RIO GRANDE VALLEY METROPOLITAN PLANNING ORGANIZATION

510 South Pleasantview Drive, Weslaco, TX. 78596
(956) 969-5778

PLANNING PARTNERS:

MAYOR AMBROSIO HERNANDEZ
CHAIRMAN
CITY OF PHARR

JUDGE EDDIE TREVIÑO, JR.
VICE CHAIRMAN
CAMERON COUNTY

CAMERON COUNTY RMA

CITY OF BROWNSVILLE

CITY OF EDINBURG

CITY OF HARLINGEN

CITY OF McALLEN

CITY OF MISSION

CITY OF SAN BENITO

HIDALGO COUNTY

HIDALGO COUNTY RMA

TxDOT (PHARR DISTRICT)

VALLEY METRO

STAFF:
ANDREW A. CANON
EXECUTIVE DIRECTOR

LUIS M. DIAZ
ASSISTANT DIRECTOR

EX-OFFICIO:
RIO GRANDE VALLEY
PARTNERSHIP

November 13, 2020

RE: Technical Advisory Committee (TAC), November 19, 2020

Dear Technical Advisory Committee,

At the regularly scheduled meeting to be held on Thursday, November 19th at 10 a.m., staff will be asking for adoption and consensus on many important items. Staff is asking for approval of the recommendation from the TAC workshop held on November 10th for Category 7 to remain as is in it uses, construction, ROW and PEfor project development. Staff is asking for concurrence on Category 7 project listing to be submitted to TxDOT for development of the 2022 UTP. TxDOT has informed us they have a deadline of January 28, 2021 so the RGMPO needs to act now so the TPB can act on December 10th to meet the deadline. Staff is also as seeking approval and adoption of the 2045 MTP (long range plan), Active Transportation Plan and Transit Development Plan. These plans have been developed in conjunction with Alliance Transportation Group to meet our federal requirements for the end of the year. Staff will also be seeking approval of the FY2019 CMP as prepared by CoPlan and seeking an extension in time only for the current contract. This time extension is being sought to allow for traffic volumes to increase with time to get a true perspective of the return on investment with our signalization efforts.

Staff will be presenting update on Cat. 7 project scorings and an update on the Certification Review to take place the week of December 7, 2020. As always if we can be of any assistance to you on this or anything else, please contact me at your convenience at acanon@rgvmpo.org or 956-330-3380.

Sincerely,

Andrew A. Canon
Executive Director
RGVMPO

RIO GRANDE VALLEY
METROPOLITAN PLANNING ORGANIZATION (RGVMPO)
TECHNICAL ADVISORY COMMITTEE MEETING

THURSDAY, November 19, 2020
AT 10:00 A.M.

Click here to join the meeting

AGENDA

I. CALL TO ORDER

II. ROLL CALL

III. PUBLIC COMMENTS

IV. PRESENTATION, ACTION AND DISCUSSION ITEMS

A. Consideration and Action to Approve the Minutes of October 8, 2020
B. Consideration and Action of Category 7 workshop recommendation to retain Category 7 funding as is presently
being used for ROW, PE and construction.
C. Consideration and concurrence on FY 2022 UTP submittal
D. Consideration and Action to approve Executive Summary of 2019 CMP
E. Consideration and Action to adopt 2045 MTP (long rage plan)
F. Consideration and Action to adopt Active Transportation Plan
G. Consideration and Action to adopt Transit Development Plan
H. Consideration and Action to extend CMP contract for time purposes only (3 Months) from December to March 31, 2021

V. RGVMPO EXECUTIVE DIRECTORS' REPORTS AND UPDATES

A. Director Update
B. Update on Federal Certification Review
C. Financial Update

VI. STATUS REPORTS

A. TxDOT Project Status Reports
B. Cameron County RMA
C. Hidalgo County RMA
D. McAllen Metro
E. Brownsville Metro
F. Valley Metro

VII. NEW OR UNFINISHED BUSINESS

VIII. ADJOURNMENT

RIO GRANDE VALLEY METROPOLITAN PLANNING ORGANIZATION
Technical Advisory Committee
Via MICROSOFT TEAMS

October 8, 2020

I) CALL TO ORDER

Pete Sepulveda, (Cameron County RMA) Chairman called the TAC Microsoft Teams Meeting to order at 10:06 a.m. The RGVTAC Microsoft Teams Meeting was held remotely with the following TAC Members.

II) ROLL CALL

RGVTAC Representative in attendance were as follows:

MEMBERS PRESENT	
ENTITY	**VOTING MEMBERS**
Cameron County RMA	Pete Sepulveda, Chairman
City of Mission	JP Terrazas, Vice Chairman
City of Brownsville	Joel Garza
City of Edinburg	Tom Reyna
City of Harlingen	Gabriel Gonzalez (ALTERNATE)
City of McAllen	Yvette Barrera
City of Pharr	ABSENT
City of San Benito	ABSENT
Cameron County	Benjamin Worsham
Hidalgo County	Armando Garza, Jr.
TxDOT Pharr District	Melba Schaus
Valley Metro	Frank Jaramillo
Brownsville Metro	Norma Zamora / Antonio Zubieta
McAllen Metro	Jon Ray Bocanegra
Port of Brownsville	Ariel Chavez, III (ABSENT)
Port of Harlingen	ABSENT
Port Isabel-San Benito Navigation District	ABSENT
Hidalgo County RMA	Eric Davila
STAFF	
RGVMPO	Andrew A. Canon
RGVMPO	Luis Diaz
RGVMPO	Staff

III) PUBLIC COMMENTS

NONE

IV) PRESENTATION, ACTION AND DISCUSSION ITEMS

A. Consideration and Action to Approve the Minutes of September 16, 2020

Pete Sepulveda (Cameron County RMA) Chairman asked if there were any corrections to the minutes of September 16, 2020. ***No corrections were noted to the minutes of September 16, 2020, Tom Reyna from the City of Edinburg made a motion to approve the minutes as presented by staff. The motion was seconded by Benjamin Worsham from Cameron County; and upon a vote, the motion carried unanimously.***

B. Discussion on TASA Project Call update

Andrew A. Canon, RGVMPO Executive Director, provided a TASA Project call update. He provided a PowerPoint slide explaining five highlighting points from TASA updates as per minute order #115825 adopted by TxDOT Transportation Commission on September 24, 2020. Mr. Canon emphasized how MPO's are now required to include TX Dot's Direct Cost for PE and Construction, currently seeking specific guidance on this matter. RGVMPO is working closely with TxDOT throughout this process. Mr. Canon recommended re-visiting the TASA Project Call at the beginning of 2021. During this discussion, City of Harlingen asked if the cost of TxDOT includes the dollar amount for direct cost for PE. Mr. Canon directed the question to TxDot to provide an explanation. Melba Schaus, TxDOT, answered the direct cost be included on these projects was not being done before, e.g., CAT 7.

After some discussion on this item, Melba Schaus, TxDOT made a motion to approve the TASA Project call update the motion was seconded by Gabriel Gonzalez, City of Harlingen; and upon a vote, the motion passed unanimously.

C. Discussion and Consideration of Category 7 workshop date(s)

Andrew A. Canon discussed the need to determine a date for the Category 7 virtual workshop. Mr. Canon proposed holding the workshop in November as he and his staff are currently busy with Certification and upcoming AMPO conference. Mr. Armando Garza, Hidalgo County, recommended bringing this up at the next Policy Board meeting so they could act on what the TAC proposes. Mr. Canon agreed and stated that he would like to share dates that the TAC is considering as well. Mr. Garza then asked who would be presenting and what would be presented. Mr. Canon shared the presentations will be a combination effort between RGVMPO staff and TxDOT. He stated that they could present what the TAC would like to see but certainly show the historical trends of how CAT 7 has been used. Mr. Canon then asked if the TAC would entertain a kick-off meeting for Wednesday, November 4, 2020 at 10:00 a.m., the TAC members agreed that date and time worked. Yvette Barrera, City of McAllen, asked if the workshops would provide more information than had already been presented to them. Andrew responded that he wants to provide additional information that originally went out because it was on the sparse side. Chairman Pete Sepulveda asked if there were any other questions from the members, though there were none.

D. Discussion and Update of Federal Certification review

Andrew A. Canon discussed the importance of Federal Certification requiring all staff to come into the office for two weeks, with expectation to return to rotation once certification review notebook is submitted on October 16th. Mr. Canon stated that they are waiting for an agenda and there might be a need for Chairman Pete Sepulveda to be present and provide his feedback on the TAC. Possibly kick off December 7th continuing with Dec.8th ,9th ,10th. Conceitedly, the certification review will be completed by December 10th, the same day as the last policy meeting for this year. It is also the meeting where it is anticipated that the Policy Board will be adopting the RGVMPO's long-range plan, active transportation plan, transit plan, congestion study and the MTP overall. It will be a huge meeting for the RGVMPO as it will be when we finalize all the documents and materials that we need to move forward for the next couple of years with Federal Highways Administration, Federal Transit Agency, and Texas Department of Transportation.

With no questions from the committee Yvette Barrera, City of McAllen, made a motion to acknowledge the discussion. The motion was seconded by Joel Garza, City of Brownsville; and upon a vote, the motion passed unanimously.

E. Discussion and update on Active Transportation Plan

Andrew A. Canon discussed the Active Transportation Plan was included in the TAC packet to give everyone an opportunity to read through and comment. He stated that there was a hard date of Friday, October 9th at the end of the working day for submittal of comments. This is giving us a tool to look at implementation of the next couple of years for bike/ped oriented facilities throughout Hidalgo and Cameron Counties to achieve the goal of a seamless network for the region. Mr. Gabriel Gonzalez, City of Harlingen, asked if the feedback/comment date was a hard target date and Mr. Canon explained that the reasoning for the hard target is due to the necessary public involvement period needing 30 days and the goal of getting the adoption of the plan to the Policy Board's December 10th meeting. Yvette Barrera, City of McAllen, then asked if there was funding set aside for the implementation of the active transportation plan and, if not, how would it be funded. To this Mr. Canon responded no funding is set aside but members could look at the budget and strategize potential funding for the implementation of the proposed network like other projects. Ms. Barrera explained that she wanted to better understand how the implementation would be funded, whether it would impact TASA funds or future funding, and if comments should be left expressing priority routes of the municipality as the regional routes may not be the priority of the cities. Mr. Canon explained the plan provides recommendations for connectivity and is not set in stone, they welcome input regarding other routes and that the plan did not impact funding at all. The plan is a template to use when funding opportunities unveil themselves through grants, TASA, Category 7, etc. that we have something that TAC has looked at, has been through public input, and the Policy Board has approved to demonstrate supported ideas for projects. For transparency, Mr. Canon explained that the only TASA funding that is tied up is related to the projects approved through TIP for the Brownville area, agreed to upon the redesignation. Ms. Barrera further asked if there would be additional opportunities to include and amend the plan for other routes. As per Mr. Canon, public comments would be recorded and documented through an appendix as part of the public comment, but document itself might not change. There being no further questions regarding Active Transportation Plan, Chairman Pete Sepulveda requested a motion.

Yvette Barrera, City of McAllen, made a motion to acknowledge the update. The motion was seconded by Eric Davila, of the Hidalgo County RMA; and upon a vote, the motion passed unanimously.

V) RGVMPO STAFF REPORTS AND UPDATES

A. Director Update

B. Introduction of new RGVMPO staff

New RGVMPO staff was introduced, including Natalie coming on board as a Planner I. She is new to the planning environment but studious and helping with the certification. Eva Garcia, who those from Cameron County may know, has come on board as a Planner III. Eva was brought over from the Rails-to-Trails Conservancy where she did extensive work on the Caracara Trails system there to help with implementation and connectivity of the bicycle and pedestrian transportation opportunities we have in the future.

- TAC Meeting Moved to November 19, 2020

Reminder the next TAC meeting as been moved to November 19th as approved per the Policy Board. It is the last meeting right before Thanksgiving to facilitate before the joint Policy Board meeting set for December 10th.

- Update from statewide MPO meeting, TEMPO

Mr. Canon updated the members of TEMPO meeting held yesterday but no real surprises, the biggest as discussed in the last TAC and Policy Board meeting was hoping to move forward with TIP revisions for November but the brakes have been pumped. Mr. Canon understands that TxDOT will be approve STIP in the first quarter of next year. No approved TIP 2021-2024 to make amendments as there is now a halt on the MTP to prevent overlapping of projects. RGVMPO is working closely with TxDOT until the TIP is adopted. Pete Sepulveda, Chairman, asked which projects might be impacted by a delay in letting or funding issues. Melba Schaus, TxDOT responded that to-date only two projects might be affected depending on when the STIP is adopted and approved by FHWA. These two projects could be in jeopardy of shifting to later than April 2021, maybe by a couple of months but potentially more than that. Mr. Sepulveda asked if staff are foreseeing a loss in funding at this time. Ms. Schaus stated the delay was not related to a lack of funding but to the need for STIP approval by FHWA. Norma Garza further reiterated Ms. Schaus comments by explaining the do not anticipate any loss of funds but anticipate a shifting with letting having a later date.

C. Financial Update

Mr. Canon provided a slide detailing RGVMPO finances. RGVMPO staff has been expanded and current budget reflects the end this fiscal year all under budget. Next meeting the new fiscal year budget will be presented. No further questions regarding financial update.

VI) STATUS REPORTS

A. TxDOT Project Status Report

Melba Schaus (TxDOT) provided an updated Via Microsoft Teams TxDOT Project Status Report within the RGVMPO area. The following reports included TxDOT Monthly Letting Update (Nov. 2020, Dec. 2020, Apr. 2021, May 2021, July 2021) and Pharr District Master Letting Plan. Ms. Schaus notified members of delayed letting process and assured everyone will be updated should any changes arise for 2021 letting dates. She encouraged to reach out to their project managers for any questions, but she would also be available to answer questions. ***Report only, no action taken at this time.***

B. Cameron County RMA

Pete Sepulveda **(**Cameron County RMA) provided an updated presentation Via Microsoft Teams on projects that are currently within the Cameron County RMA. All projects are moving forward as scheduled and Cameron County RMA report following the project process: Environmental, Preliminary Engineering, ROW & Utilities, Design, and Funding filed with the October 8, 2020 RGVTAC Packet. ***Report only, no action taken at this time.***

C. Hidalgo County RMA

Eric Davila, PE, (Hidalgo County RMA) provided an updated presentation Via Microsoft Teams on projects that are currently within the Hidalgo County RMA; he discussed the major milestones of each project. All projects are continuing to move forward despite seeing COVID-19 related challenges and adjusting to the news of approval of the STIP. They are working closely with TxDot. The Hidalgo County RMA monthly report is filed with the October 8, 2020 RGVTAC Packet. ***Report only, no action taken at this time.***

D. McAllen Metro

Jon Ray Bocanegra provided a brief update Via Microsoft Teams and noted a small passenger increase since the previous month, utilizing CARES ACT grant, and everything appears to be moving upwards. The McAllen Metro report is filed with the October 8, 2020 RGVTAC Packet. ***Report only, no action taken at this time.***

E. Brownsville / Island Metros

Antonio Zubieta provided an updated report Via Microsoft Teams which included the Brownsville Metro and Island Metro. These reports include on-going connecting community projects and combined ridership. He explained compared to previous years numbers are low, however, there is an increase since COVID-19. The reports are filed with October 8, 2020 RGVTAC Packet. ***Report only, no action taken at this time.***

F. Valley Metro

Frank Jaramillo provided an update Via Microsoft Teams for ridership for both rural and urban year to date report. COVID-19 continues to impact services, however, there is a steadily increase. The reports are filed with the October 8, 2020 RGVTAC Packet. ***Report only, no action taken at this time.***

VII) NEW OR UNFINISHED BUSINESS

Pete Sepulveda, Chairman, wants to make sure everyone receives a calendar invite for Category 7 workshop. Luis will be forwarding the invites at a later time through Microsoft Teams. Yvette Barrera, City of McAllen, wants to add an item to discuss emergency relief program she has questions as does Tom Reyna, City of Edinburg. Mr. Sepulveda clarified Cat 6 falls under FHWA and not classified (local roadways) would be the FEMA program. Ms. Barrera wants to include another item to review how the functional classification is used to determine emergency relief funding. Mr. Sepulveda suggested including this for the next meeting.

VIII) ADJOURNMENT

There being no further business to come before the RGVTAC Members, Pete Sepulveda, (Cameron County RMA) Chairman called for a motion to adjourn. The Hidalgo County made a motion to adjourn the meeting at 11:00 AM. The motion was seconded by City of McAllen; and upon a vote, the motion carried unanimously.

DRA

CSJ	PROP. FY	County	HWY	Limit From	Limit To	Description	Estimate with Inflation (4,8,12% TO FY 2,3,4)
CONSTRUCT AUTHORITY (TIP 2021-2024)							
0039-07-257	2022	CAMERON	IH 69E	INDUSTRIAL BLVD.	LOOP 499 (PRIMERA RD.)	NB & SB RAMPS REVERSAL	**$3,337,618.09**
1064-01-032	2022	HIDALGO	FM 676	SH 364, EAST	SH 107	WIDEN TO 4 LANE DIVIDED	**$17,315,078.96**
0342-01-093	2023	HIDALGO	SH 107	BUS 281W	IH 69C	OPERATIONAL IMPROVEMENTS & REHABILITATION	**$19,024,575.43**
0528-01-118	2023	HIDALGO	SH 107	FM 1924	SH 495	WIDEN FROM 4 LANE TO 6 LANE WITH RAISED MEDIAN	**$21,208,973.76**
0865-01-108	2023	HIDALGO	SH 495	VETERANS BLVD., FROM IH-2 (US 83)	LA HOMA RD.	CONSTRUCT 4 LANE DIVIDED_URBAN SECTION	**$17,393,082.58**
0921-06-254	2023	CAMERON	CS	FM 509 ON NEW LOCATION,	FM 1599	CONSTRUCT 2 LANE RURAL	**$7,880,600.00**
0864-01-068	2024	HIDALGO	FM 494	SH 107	FM 676(MILE 5)	WIDEN FROM 2 LANE TO 4 LANE	**$20,855,106.07**
1803-01-092	2024	HIDALGO	FM 1925	10TH ST.	MCCOLL RD	WIDEN FROM 2 LANE TO 6 LANE WITH RAISED MEDIAN	**$10,777,861.62**
1803-02-035	2024	HIDALGO	FM 1925	FM 907 (ALAMO RD)	SHARP RD.	WIDEN FROM 2 LANE TO 4 LANE DIVIDED	**$9,992,406.50**
2094-01-063	2024	HIDALGO	FM 2220	FM 1925	SH 107	WIDEN FROM 2 LANE TO 6 LANE WITH MEDIAN	**$21,739,893.53**
						CONSTRUCT AUTHORITY Subtotal	**$149,525,196.54**

CSJ	PROP. FY	County	HWY	Limit From	Limit To	Description	Estimate with Inflation (4,8,12% TO FY 2,3,4)
DEVELOP AUTHORITY (2025-2031)							
1064-01-027	2025	HIDALGO	FM 676	SH 107	TAYLOR RD.	WIDEN TO 4 LANE WITH LEFT TURN LANE	**$24,798,819.10**
1803-01-094	2025	HIDALGO	FM 1925	WALLACE RD.	10TH ST.	WIDEN FROM 2 LANE TO 6 LANE WITH RAISED MEDIAN	**$28,784,710.08**
0220-04-049	2026	CAMERON	US 281	.5 Miles West of FM 1577	FM 1421	WIDEN FROM 2 LANE TO 4 LANE RURAL	**$15,010,800.00**
0220-04-050	2026	CAMERON	US 281	FM 732	.5 Miles West of FM 1577	WIDEN TO 4 LANE RURAL	**$14,410,368.00**
0327-08-098	2026	CAMERON	BU 77X	SS 206	COMMERCE ST.	CONSTRUCT RAISED MEDIAN	**$2,907,785.98**
0863-01-048	2027	HIDALGO	FM 493	MILE 14	MILE 10	CONSTRUCT 4 LANE DIVIDED	**$10,003,197.12**
1228-03-041	2027	HIDALGO	FM 1015	MILE 12 RD.	SH 107	PROPOSED 4 LANE DIVIDED URBAN	**$37,611,546.83**
1429-02-036	2027	HIDALGO	FM 1426	NOLANA LOOP	IH-2	WIDEN FROM 4 LANE TO 6 LANE WITH RAISED MEDIAN	**$19,597,853.11**
2717-01-027	2027	CAMERON	FM 3248	IH-69E	FM 1847	WIDEN FROM 4 LANE TO 6 LANE WITH RAISED MEDIAN	**$19,303,747.05**
3468-01-021	2027	HIDALGO	FM 3362	BUS 83S	SH 495	WIDEN AND RECONSTRUCT ROADWAY (4 TO 6 LANES)(DIVIDED)(URBAN)	**$11,011,922.88**

CSJ	PROP. FY	County	HWY	Limit From	Limit To	Description	Estimate with Inflation (4,8,12% TO FY 2,3,4)
0039-07-049	2028	CAMERON	IH 69E	@ IH-69E & FM 732 INTERSECTION	@ SHERER RD./BUS 77 INTERSECTION	PROPOSED CONTINUOUS FRONTAGE RDS. & INTERSECTION IMPROVEMENT	**$21,126,079.52**
0039-12-254	2028	CAMERON	BU 77X	COMMERCE ST.	ARROYO BRIDGE	CONSTRUCT RAISED MEDIAN	**$286,589.80**
0684-03-019	2028	CAMERON	FM 1732	US 281	IH-69E	WIDEN FROM 2 LANE TO 4 LANE URBAN	**$27,091,491.84**
0342-03-040	2029	CAMERON	SH 107	HIDALGO/CAMERON CL	LOUISIANA ST.	RECONSTRUCT & WIDEN TO 4 LANE RURAL_ROADWAY	**$5,511,965.76**
1803-01-095	2029	HIDALGO	FM 1925	FM 681	WALLACE ST.	PROPOSED 4 LANE C&G W/ SHOULDERS	**$29,397,150.72**
2094-01-062	2029	HIDALGO	FM 2220	SH 107	MILE 5	WIDEN FROM 2 LANE TO 6 LANE WITH MEDIAN	**$20,806,106.01**
0528-01-113	2030	HIDALGO	SH 107	FM 1924 NORTH	FM 676	WIDEN FROM 4 LANE TO 6 LANE DIVIDED RURAL	**$19,453,996.80**
0220-05-076	2031	CAMERON	SH 48	SH 4	FM 511	WIDEN TO 6 LANE W/RAISED MEDIAN	**$33,675,829.15**
						DEVELOP AUTHORITY Subtotal	**$340,789,959.75**
						UTP TOTAL	**$490,315,156.30**

CSJ	PROP. FY	County	HWY	Limit From	Limit To	Description	Estimate with Inflation (4,8,12% TO FY 2,3,4)
PLAN AUTHORITY (OUTSIDE UTP)							
1137-01-029	2035	CAMERON	SL 499	IH-69E	BUS 77X	CONSTRUCT RAISED MEDIAN	**$14,197,793.25**
1137-02-038	2035	CAMERON	SL 499	BUS 77	SS 206	WIDEN FROM 4 LANE TO 6 LANE WITH RAISED MEDIAN	**$5,724,462.22**
0039-12-057	2035	CAMERON	BU 77X	ARROYO COLORADO BRIDGE	FM 510	WIDEN FROM 4 LANE TO 6 LANE WITH RAISED MEDIAN	**$39,484,845.55**
0342-03-037	2035	CAMERON	SH 107	LOUISIANA ST.	HOOKS E. HODGES RD.	RECONSTRUCT TO 4 LANES C&G	**$13,209,504.00**
0528-01-112	2035	HIDALGO	SH 107	FM 676	FM 681/FM 2993	WIDEN FROM 4 LANE TO 6 LANE DIVIDED URBAN	**$21,915,768.00**
0528-01-116	2035	HIDALGO	SH 107	FM 681	FM 2220	WIDEN TO 6 LANE_W/RAISED MEDIAN	**$39,220,218.24**
1427-01-033	2035	HIDALGO	FM 1423	IH-2	BUS 83	PROPOSED 4 LANE C&G WITH SHOULDERS	**$3,116,853.17**
1939-02-036	2035	HIDALGO	FM 2061	BUS 83 S	HALL ACRES RD.	PROPOSED 6 LANE W/ RAISED MEDIAN	**$22,780,390.08**
2966-01-014	2035	HIDALGO	SH 364	FM 2221	FM 676	WIDEN FROM 2 LANE TO 5 LANE CURB & GUTTER	**$6,604,752.00**
						PLAN AUTHORITY Subtotal	**$166,254,586.51**

*Inflation has been added to base estimates as follows (Yr 1- 0%., Yr 2 - 4%, Yr 3 - 8%, and Yrs 4-10 - 12%)

*UTP estimate includes Base Construction Estimate + Inflation + Contingencies (Safety and Change Order)

*UTP estimate shown does not represent authorized amounts. All projects have partial Cat 2 funding and a request for the funding gap will be made as part of the FY 22 UTP.

Rank	CSJ	Area	Highway	FY	Limits From	Limits To	Description	Cat 7
2	0921-06-293	BROWNSVILLE	CS	2022	ON WEST RAIL TRAIL, FROM PALM BLVD @ FORMER RAIL LINE	I-69 E SOUTHBOUND FRONTAGE RD W OF OLD ALICE RD	CONSTRUCT MULTI- MODAL FACILITY	$1,000,000
1	0921-06-315	BROWNSVILLE	CS	2022	ON EAST LOOP FROM I-69	SH 4	CONSTRUCTION OF 4 TO 6 LANE ROADWAY	$2,963,485
3	0921-06-290	BROWNSVILLE	CS	2022	ON OLD ALICE ROAD, FROM SH 100	SPORT PARK BLVD	WIDEN FROM 2 LANE TO 4 LANE URBAN ROADWAY	$1,100,000
4	0684-01-068	BROWNSVILLE	SH 550	2022	0.203 MI S OF FM 1847	1.13 MI SE OF UPRR OVRPSS FM 3248	CONSTRUCT CONTOLLED ACCESS TOLLED FACILITY	$17,500,000
5	0921-06-280	BROWNSVILLE	VA	2022	SOUTHMOST TRAIL, FROM MANZANO ST	LA POSADA DR.	CONSTRUCT 10" CONCRETE TRAIL	$356,250
6	0921-06-289	BROWNSVILLE	VA	2022	SOUTHMOST NATURE TRAIL FROM 1847	ALAMEDA DR./MONSEES RD	CONSTRUCT 10" CONCRETE TRAIL	$6,968,000
7	0921-02-321	HIDALGO COUNTY	CS	2022	ON MILE 3 N TOM GILL ROAD	FM 492 (GOODWIN RD)	WIDEN FROM 2 TO 4 LANE DIVIDED - CURB & GUTTER SECTION	$16,813,674
8	0921-02-328	HIDALGO COUNTY	CS	2022	ON TAYLOR RD @MILE 2 N	BUSINESS 83	WIDEN FROM 2 LANES TO 4 LANES DIVIDED URBAN	$6,894,192
9	0921-02-286	HIDALGO COUNTY	CS	2022	ON MILE 6W, FROM SH 107	MILE 11 N	ROW ACQUISITION FOR RECONSTRUCTION AND WIDEN FROM 2 TO 4 LANES	$4,396,313
10	1804-01-068	HIDALGO COUNTY	FM 1926	2022	AT FM 1926 (23RD ST) HACKBERRY AVE		ADDITION OF NORTH AND SOUTHBOUND CENTER TURN LANES	$86,265
11	1804-01-071	HIDALGO COUNTY	FM 1926	2022	AT FM 1926 (23RD ST) & EBONY AVENUE		ADDITION OF EAST, NORTH, AND SOUTH BOUND CENTER TURN LANES	$141,219
12	1804-01-072	HIDALGO COUNTY	FM 1926	2022	AT FM 1926 (23RD ST) & JACKSON AVENUE		ADDITION OF NORTH AND SOUTH BOUND CENTER TURN LANES	$116,618
13	0621-01-106	HIDALGO COUNTY	SH 336	2022	INTERSECTION BUSINESS US 83	135 FT S INTERSECTION US BUSINESS 83	ADDITION OF NORTHBOUND RIGHT TURN LANE	$77,958
14	0921-02-303	HIDALGO COUNTY	VA	2022	ANZALDUAS INT BRIDGE PORT OF ENTRY	SOUTHBOUND	CONSTRUCTION OF SOUTHBOUND INSPECTION STATION	$508,291
15	0921-02-376	HIDALGO COUNTY	CS	2023	ON HI LINE WEST, FROM JACKSON RD.	CAGE BLVD.	WIDEN TO 2 LANE WITH CONTINUOUS LEFT TURN LANE	$5,860,000
16	0921-02-194	HIDALGO COUNTY	CS	2023	LIBERTY BLVD. FROM MILE 3	US 83	WIDEN FROM 2 LANES TO 4 LANES WITH DEDICATED LEFT TURN LANE	$10,135,477
17	0921-02-400	HIDALGO COUNTY	CS	2023	ON ANAYA RD. FROM CAGE	VETERANS BLVD.	WIDEN FROM 2 LANES TO 5 LANES	$5,930,000
18	0921-02-375	HIDALGO COUNTY	CS	2023	ON HI LINE EAST FROM CAGE BLVD	VETERANS RD	WIDEN TO 2 LANE WITH CONTINUOUS LEFT TURN LANE AND SHOULDERS	$4,523,551
19	1064-01-043	HIDALGO COUNTY	FM 676	2023	Taylor Rd	FM 2220	Widen from 2 lane to 4 lane Divided	$4,500,000
20	0921-02-358	HIDALGO COUNTY	CS	2024	On Owassa Rd from IH-69C (US 281)	I Road	Widen from 2 lane to 4 lane roadway	$5,500,000
21	0921-02-327	HIDALGO COUNTY	CS	2024	ON TAYLOR RD FROM BUSINESS 83	I-2 (US 83)	WIDEN FROM 2 LANES TO 4 LANES ROADWAY	$5,000,000
22	0921-06-293	BROWNSVILLE	WEST RAIL TRAIL	2025	WEST BLVD ON PALM BLVD @ RAIL LINE	I-69 E SOUTHBOUND FRONTAGE RD W OF OLD ALICE RD	CONSTRUCT MULTIMODAL FACILITY	$2,170,000
23	0921-02-332	HIDALGO COUNTY	MILE 3N (PHASE 1)	2025	TOM GILL ROAD	FM 2221	NEW LOCATION 2 LANE RURAL ROADWAY	$7,190,000
24	0921-02-254	HIDALGO COUNTY	MILE 1 EAST	2025	BUS 83	MILE 8 NORTH	RECONSTRUCTION AND WIDEN TO URBAN 2 LANES AND SHOULDERS	$6,804,774
25	0921-02-361	HIDALGO COUNTY	NOLANA LOOP (S1)	2025	FM 1426 (RAUL LONGORIA)	FM 907	WIDEN TO 4 LANE DIVIDED	$13,340,418
26	0921-06-334	BROWNSVILLE	LOS FRESNOS HIKE & BIKE TRAIL	2026	CIRCLES THE CITY OF LOS FRESNOS		ESTABLISH HIKE & BIKE TRAIL	$3,027,100
27	0921-06-313	BROWNSVILLE	VETERANS INTERNATIONAL BRIDGE AT LOS TOMATES	2026	CBP PRIMARY INSPECTION LANES		EXPANSION OF PRIMARY LANES FOR PASSENGER VEHICLES	$14,578,845
28	0921-02-363	HIDALGO COUNTY	I RD	2026	RANCHO BLANCO	MILITARY HWY	CONSTRUCT 2 LANES W/SHOULDERS	$11,698,586
29	0921-02-399	HIDALGO COUNTY	CESAR CHAVEZ	2027	BUS 83	RIDGE	WIDEN TO 4 LANES	$10,957,120
30	0921-02-405	HIDALGO COUNTY	CESAR CHAVEZ	2027	BUS 83	NOLANA LOOP	DIVIDED URBAN SECTION	$25,202,068
31	0921-02-395	HIDALGO COUNTY	INSPIRATION RD/MILITARY PKWY LOOP	2027	IH-2	FM 1016	WIDEN TO 4 LANE DIVIDED	$22,253,200
32	0921-02-322	HIDALGO COUNTY	LIBERTY BLVD (PHASE II)	2028	MILE 3 RD	FM 2221	CONSTRUCT 2 LANE ROADWAY WITH SHOULDERS (ON NEW LOCATION FROM MILE 4 TO FM 2221)	$10,175,384
33	0921-02-403	HIDALGO COUNTY	ELDORA RD	2028	FM 3363 (JACKSON RD)	VETERANS BLVD (I RD)	DIVIDED URBAN SECTION	$13,722,559
34	0921-06-292	BROWNSVILLE	WHIPPLE RD	2029	ON WHIPPLE RD, FM 1847	FM 1575	PROPOSED 2 LANE ROADWAY WITH CONTINUOUS LEFT TURN LANE	$4,440,000
35	0921-06-290	BROWNSVILLE	CS	2029	ON OLD ALICE RD, SH 100	SPORTS PARK BLVD	WIDEN FROM 2 LANE TO 4 LANE URBAN ROADWAY	$16,650,000
36	0921-02-360	HIDALGO COUNTY	MILE 10 NORTH	2029	WESTGATE (MILE 6 W)	FM 1015	WIDEN TO 4 LANES - URBAN	$13,894,434
37	0921-02-169	HIDALGO COUNTY	NOLANA LOOP (S 2-4)	2029	FM 907	FM 88	WIDEN TO 4 LANES DIVIDED	$3,500,000
38	0921-02-448	HIDALGO COUNTY	MILE 6 W RD	2029	SH 107	MILE 14 1/2	WIDEN TO 4 LANE	$12,000,000
39	0921-02-396	HIDALGO COUNTY	NOLANA LOOP	2029	FM 2220 (WARE RD)	FM 1926 (23RD ST)	WIDEN TO 6 LANE	$3,730,959
40	0921-06-330	BROWNSVILLE	DANA RD	2030	FM 802	FM 3248	WIDEEN ROADWAY AND ADD SIDEWALKS	$10,560,000
41	0921-06-305	BROWNSVILLE	INDIANA AVE REALIGNMENT	2030	.1 MILE N. OF CALIFORNIA RD	.62 MILE N. OF FM 1419	REALIGNMENT, CONSTRUCT 2 LANE RURAL ROADWAY	$2,808,500
42	0921-02-398	HIDALGO COUNTY	E YUMA AVE	2030	JACKSON RD	McCOLL RD	WIDEN TO 4 LANE URBAN WITH SIPHON	$2,101,363
43	0921-02-440	HIDALGO COUNTY	FREDDY GONZALEZ	2030	SH 336 (10TH ST)	FM 2061 (McCOLL RD)	WIDEN AND RECONSTRUCT ROADWAY (2 TO 4 LANES) DIVIDED URBAN	$6,370,467
44	0921-02-442	HIDALGO COUNTY	TRENTON RD	2030	US 281	FM 1426 (RAUL LONGORIA)	CONSTRUCT 4 LANES	$12,864,094
45	0921-02-466	HIDALGO COUNTY	SPRAGUE AVE	2030	SUGAR RD	SH 336 (N 10TH ST)	WIDEN TO 4 LANES	$5,643,323
46	0921-06-291	BROWNSVILLE	MORRISON RD	2031	FM 1847	FM 511	CONSTRUCT 4 LANE URBAN ROADWAY	$16,400,000
47	0921-02-447	HIDALGO COUNTY	Mile 6 W Rd	2031	Mile 14 1/2	Mile 11 N	Widen to 4 lane	$22,612,489

Brownsville Area CAT 7 Projects for FY 2022-2031

CSJ	Area	Highway	City	FY	Sponsor	Limits From	Limits To	Description
0921-06-305	BROWNSVILLE	CS	BROWNSVILLE	2022	CCRMA	ON INDIANA AVENUE, FROM 0.1 MILE N OF CALIFORNIA RD	0.62 MILE N OF FM 1419 (SOUTHMOST RD)	REALIGNMENT, CONSTRUCT 2 LANE RURAL ROADWAY
0921-06-293	BROWNSVILLE	CS	BROWNSVILLE	2022	CCRMA	ON WEST RAIL TRAIL, FROM PALM BLVD @ FORMER RAIL LINE	I-69 E SOUTHBOUND FRONTAGE RD W OF OLD ALICE RD	CONSTRUCT MULTI- MODAL FACILITY
0921-06-315	BROWNSVILLE	CS	BROWNSVILLE	2022	CCRMA	ON EAST LOOP FROM I-69	SH 4	CONSTRUCTION OF 4 TO 6 LANE ROADWAY
0921-06-290	BROWNSVILLE	CS	BROWNSVILLE	2022	CAMERON COUNTY	ON OLD ALICE ROAD, FROM SH 100	SPORT PARK BLVD	WIDEN FROM 2 LANE TO 4 LANE URBAN ROADWAY
0684-01-068	BROWNSVILLE	SH 550	BROWNSVILLE	2022	CCRMA	0.203 MI S OF FM 1847	1.13 MI SE OF UPRR OVRPSS FM 3248	CONSTRUCT CONTOLLED ACCESS TOLLED FACILITY
0921-06-280	BROWNSVILLE	VA	BROWNSVILLE	2022	BROWNSVILLE	SOUTHMOST TRAIL, FROM MANZANO ST	LA POSADA DR.	CONSTRUCT 10" CONCRETE TRAIL
0921-06-289	BROWNSVILLE	VA	BROWNSVILLE	2022	BROWNSVILLE	SOUTHMOST NATURE TRAIL FROM 1847	ALAMEDA DR./MONSEES RD	CONSTRUCT 10" CONCRETE TRAIL
0921-06-292	BROWNSVILLE	CS	LOS FRESNOS	2023	CCRMA	ON WHIPPLE RD, FM 1575	FM 1847	PROPOSED 2 LANE ROADWAY WITH CONTINUOUS LEFT TURN LANE
0921-06-293	BROWNSVILLE	WEST RAIL TRAIL	BROWNSVILLE	2025	CCRMA	WEST BLVD ON PALM BLVD @ RAIL LINE	I-69 E SOUTHBOUND FRONTAGE RD W OF	CONSTRUCT MULTIMODAL FACILITY
0921-06-334	BROWNSVILLE	LOS FRESNOS HIKE & BIKE TRAIL	LOS FRESNOS	2026	CITY OF LOS FRESNOS	CIRCLES THE CITY OF LOS FRESNOS		ESTABLISH HIKE & BIKE TRAIL
0921-06-313	BROWNSVILLE	VETERANS INTERNATIONAL BRIDGE AT LOS TOMATES	BROWNSVILLE	2026	CCRMA	CBP PRIMARY INSPECTION LANES		EXPANSION OF PRIMARY LANES FOR PASSENGER VEHICLES
0921-06-292	BROWNSVILLE	WHIPPLE RD	BROWNSVILLE	2029	CCRMA	ON WHIPPLE RD, FM 1847	FM 1575	PROPOSED 2 LANE ROADWAY WITH CONTINUOUS LEFT TURN LANE
0921-06-290	BROWNSVILLE	CS	BROWNSVILLE	2029	CAMERON COUNTY	ON OLD ALICE RD, SH 100	SPORTS PARK BLVD	WIDEN FROM 2 LANE TO 4 LANE URBAN ROADWAY
0921-06-330	BROWNSVILLE	DANA RD	BROWNSVILLE	2030	CITY OF BROWNSVILLE	FM 802	FM 3248	WIDEEN ROADWAY AND ADD SIDEWALKS
0921-06-305	BROWNSVILLE	INDIANA AVE REALIGNMENT	BROWNSVILLE	2030	CCRMA	.1 MILE N. OF CALIFORNIA RD	.62 MILE N. OF FM 1419	REALIGNMENT, CONSTRUCT 2 LANE RURAL ROADWAY
0921-06-291	BROWNSVILLE	MORRISON RD	BROWNSVILLE	2031	CCRMA	FM 1847	FM 511	CONSTRUCT 4 LANE URBAN ROADWAY

	TPC	TPC:PE	TPC:ROW	TPC:CONSTRUCTION	TPC:CE	TPC:CONTINGENCIES	TPC:INDIRECT	TPC:PCO	FEDERAL	STATE	REGIONAL	LOCAL	LC	CATEGORY	FEDERAL	STATE	REGIONAL	LC
Total Project Cost (TPC)																		
0921-06-305	$11,876,687	$312,500	$0	$10,766,345	$100,000	$90,000	$20,000	$587,842	$250,000	$0	$0	$62,500	$0		$0	$0	$0	$0
0921-06-293	$12,600,000	$1,000,000	$0	$10,000,000	$1,100,000	$500,000	$0	$54,600	$800,000	$0	$0	$200,000	$0		$0	$0	$0	$0
0921-06-315	$119,975,000	$3,875,000	$5,600,000	$100,000,000	$5,600,000	$4,900,000	$0	$5,044,434	$2,370,788	$0	$0	$592,697	$0	10	$911,515	$0	$0	$0
0921-06-290	$21,881,623	$1,100,000	$0	$19,131,623	$1,650,000	$0	$0	$715,523	$880,000	$0	$0	$220,000	$0		$0	$0	$0	$0
0684-01-068	$18,243,425	$1,000,000	$0	$14,868,497	$1,631,503	$743,425	$0	$918,918	$14,000,000	$0	$0	$3,500,000	$0		$0	$0	$0	$0
0921-06-280	$413,709	$0	$0	$356,250	$18,750	$26,250	$0	$12,459	$285,000	$0	$0	$71,250	$0	3LC	$0	$0	$0	$18,750
0921-06-289	$7,450,792	$0	$0	$6,968,000	$341,432	$139,360	$2,000	$289,869	$5,574,400	$0	$0	$1,393,600	$0		$0	$0	$0	$0
0921-06-292	$5,080,300	$380,300	$0	$4,000,000	$440,000	$260,000	$0	$152,592	$304,240	$0	$0	$76,060	$0		$0	$0	$0	$0
0921-06-293	$7,660,000	$1,000,000	$0	$6,000,000	$660,000	$0	$0	$0	$1,736,000	$0	$0	$434,000	$0	Other	$0	$0	$0	$4,730,000
0921-06-334	$3,235,667	$148,328	$0	$3,027,100	$0	$60,239	$0	$0	$2,421,680	$0	$0	$605,420	$0	Other	$0	$0	$0	$484,336
0921-06-313	$19,900,221	$500,000	$0	$13,134,449	$1,444,396	$898,345	$0	$0	$11,663,076	$0	$0	$2,915,769	$0	Other	$0	$0	$0	$2,200,000
0921-06-292	$5,080,300	$380,300	$0	$4,000,000	$440,000	$260,000	$0	$0	$3,552,000	$0	$0	$888,000	$0	Other	$0	$0	$0	$1,263,727
0921-06-290	$20,999,794	$1,100,000	$0	$15,000,000	$0	$30,246	$0	$0	$13,320,000	$0	$0	$3,330,000	$0		$0	$0	$0	$3,249,794
0921-06-330	$11,811,360	$517,440	$0	$10,560,000	$523,776	$210,144	$0	$0	$8,448,000	$0	$0	$2,112,000	$0		$0	$0	$0	$3,902,976
0921-06-305	$3,003,691	$0	$0	$2,808,500	$139,302	$55,889	$0	$0	$2,246,800	$0	$0	$561,700	$0	Other	$0	$0	$0	$1,040,000
0921-06-291	$18,343,400	$803,600	$0	$16,400,000	$813,440	$326,360	$0	$0	$13,120,000	$0	$0	$3,280,000	$0	Other	$0	$0	$0	$300,000

Rio Grande Valley
Metropolitan Planning Organization

CONGESTION AND DELAY STUDY
Winter 2019 / 2020

Prepared for:

Rio Grande Valley
Metropolitan Planning Organization
510 South Pleasantview Drive
Weslaco, TX. 78596

Prepared by:

CoPLAN

5508 Sandalwood Drive
McKinney, Texas 75072

November 13, 2020

EXECUTIVE SUMMARY

The Rio Grande Valley Metropolitan Planning Organization (RGVMPO) has an established congestion management process (CMP) to monitor the transportation network in Hidalgo and Cameron Counties. The goal of the monitoring system is to ensure optimal performance of the transportation system by identifying congested areas and related transportation deficiencies.

Traffic studies are conducted each year, rotating among the seasons. In 2019 / 2020 update, the Winter season was studied in Hidalgo and Cameron Counties. Past CMP studies in Hidalgo County include Spring 2001, Fall 2002, Summer 2003, Spring 2004, Winter 2005, Fall 2006, Spring 2007, Winter 2008/2009, Summer 2009, Fall 2010, Spring 2013, and Winter 2015. Past CMP studies were performed in the Brownsville region in 2011 and 2019. The 2020 study is the was the first update performed following the merger of the Hidalgo County, Harlingen, and Brownsville MPOs.

Over the years, the majority of the recommended mitigation for the “congested” segments was to optimize and coordinate the arterial signal system to provide more consistent travel speeds along major corridors and avoid frequent stopping at most signals. The most common situation that results in a “congested” determination is travel unconstrained for most a link between signals at or above posted speed, but the driver is forced to stop at the downstream intersection / signal long enough to bring the average speed for the segment down to a lower average speed. This condition is being referred to as “delay” instead of “congestion”… a small but very important distinction. In order to mitigate “delay”, it will more commonly be a local intersection or corridor signal system operational issue, thus much lower capital cost vs. “congestion” that may more typically be a capacity issue with a large required investment.

Immediately after notice to proceed, CoPLAN met with the CMP sub-committee to identify the 1,000 centerline miles to be part of the study. In addition to the study routes, CoPLAN made recommendations to the sub-committee for the 80 intersections to be evaluated for possible operational improvements. The majority of the study network includes arterials and thus many traffic signals. It has been observed over the years, that the vast majority of the signalized corridors do not include coordinated signal timing. Therefore, there is a large amount of delay that is not due to capacity issues, but more operational in nature and considered more delay than congestion. The fieldwork portion of the study started in January 2020 and focused on performing the travel time studies on the study corridors and assessment of the traffic signal hardware operations for the 80 intersections.

Prior to completing the travel time run data collection, COVID-19 was beginning to peak in March 2020 and forced the closure of schools and many businesses. We then made the decision to put a hold on data collection due to the dramatic decrease in travel, volumes, closures, and lack of school traffic. Even after summer in 2020, traffic was still noticeably lower and local schools were mostly operating remotely. Therefore, the decision was made to base the results of this years CMP on the data collection through March before the impacts of COVID-19 begin to play a role on traffic patterns.

Many of the current and past study recommendations included the need to address delay through signal timing optimization. Signal timing improvements are a relatively inexpensive way to make significant improvements on a transportation network. Improved signal timing can decrease delay by appropriately allocating green time among competing phases. This allows more traffic to pass through the signal with less delay. By adjusting cycle lengths and offsets,

drivers can travel longer distances along a corridor before having to stop for a red light. This decreases travel time and improves air quality.

In addition to the timing of the signals, the key element for efficient operation of a traffic signal is the vehicle detection. As determined during the previous CMP Tier II, a large majority of the regions traffic signals do not have a full complement of vehicle detection for all movements. This leads to substantial unnecessary delays due to the lack of working detection giving a continuous "call" when a minor side-street may have no activity. This leads to red lights on the major approach and delay while all vehicles stop, but the side-streets has a green light but no vehicles pass through intersection.

Signal timing optimization, traffic signal progression, vehicle detection maintenance are relatively low cost improvements that make the best use of existing capacity and optimize allocation of funding. The cost for a signal timing improvement project varies depending on the number of traffic signals, the controller capabilities, the location of the traffic signals and adjacent signals, the number of timing plans required, and implementation and fine-tuning needs.

One-tenth of a mile (0.1 mile) Segments

In order to create common length segments, the intersection segments that include a signal, stop sign, or major cross street on each end were further broken down into relatively common lengths. These lengths vary slightly depending on the intersection segment length, but the lengths closely match approximately 0.1 mile (approximately 500 feet). This allows close comparison of each segment and further allows assessment of the root and location of congestion / delay. The vast majority of the congested 0.1-mile segments fall at the intersection with a signal or stop sign. The overall length of congestion also is greatly reduced given the fact that the majority of congestion is limited to the controlled intersection segment and not those mid-block. **Table 1** below shows the number of congested, stable, and free-flow miles on 0.1-mile segments. In contrast to the summary of congested intersection segments, the number of congested miles is far less based on 0.1 mile segments which can be interpreted to mean congestion does not occur on entire segments and mostly occurs on a shorter portion within the segments. This helps further narrow down the congestion in the region.

Table 1 - Summary of Study Roadways in Terms of CI on 0.1-mile Segments Congestion < 0.75

	Measure	Roadway Condition			Total
		Free Flow	Stable	Congested < 0.75	
	2019 % of Miles	17%	55%	28%	100%

In the Winter 2019 / 2020 study, a total of 2252 - 0.1-mile segments were congested.

When comparing the 0.1 results to those of the intersection segments, it becomes clear that the vast majority of the measured delay occurs within 500' of a traffic signal and a large percentage of the signals could benefit from an operational assessment and update. The results indicate that 222 miles of 0.1 segments contribute to bring 377 miles of intersection segments into the

"congested" category of CI. This means that there is sufficient delay in those short segments to bring the average speed for the longer segment low enough to fall below the 0.75 CI threshold.

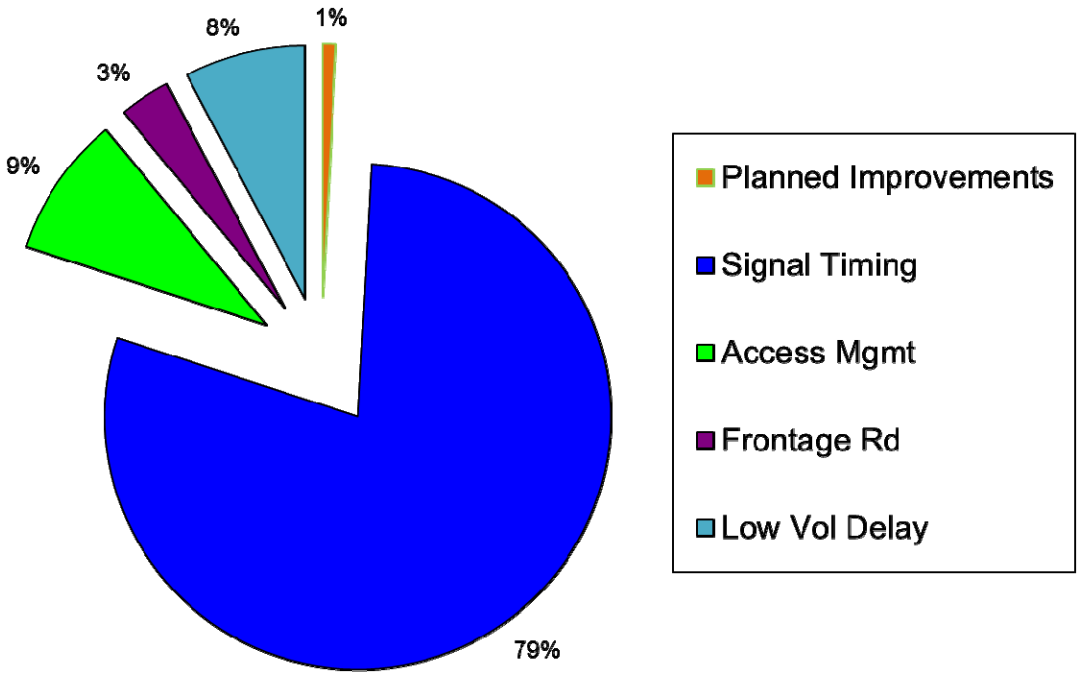
2019 Recommendations

Recommendations for the congested roadways included traffic signal timing optimization, access management, roadway widening, and adding traffic signals (when warranted) in place of existing stop signs.

Figure 1 illustrates the distribution of recommendations for the previous update in the Winter of 2015. The categories are similar to the findings of past studies. The majority of the segments found to be congested would improve by optimizing and coordinating the signals along the corridors. In general, the majority of the study network would recognize improved operations before warranting larger capital expenditures. Of the roadway segments that were congested, 79% would improve to acceptable levels with optimized and coordinated signal timing. In previous studies, signal timing was found to be an area that deserved attention within the region to allow maximum efficiency of the existing system before costly widening to add capacity. The results will be very evident as has been demonstrated previously with local municipal projects. A regional perspective will produce consistent travel time runs even when crossing from one city / agency to another. A comprehensive review of the benefits of the coordinated signal timing implemented over the last 4 years will be completed as part of the next update and recovery from the impacts of COVID-19.

The operational study results from the 2019 / 2020 Congestion and Delay Study clearly demonstrated the opportunities for improvement with minimum cost and interruption of traffic. Signal timing optimization and coordination facilitate smoother operations, less stops, less delay, vehicle emissions, and less headaches for drivers. The cost / benefit of signal timing projects far exceeds projects 100 times as expensive and can be accomplished in far less time and much less impact to drivers and property owners to endure roadway construction.

Figure 1 – Breakdown of Winter 2015 Improvement Recommendations



Key Findings

Of the 688 directional miles of roadways studied in Winter 2019 / 2020, during the PM Peak Period, 42 miles were free-flow, 252 miles were stable, and 394 miles were congested. Therefore, for the Winter 2019 / 2020 season, 43% of the roadways operated within an acceptable range during the PM Peak Period.

Within the Top 20 worst segments for the 2019 / 2020 study, many are thought to be secondary approaches as compared to what many feel are the busiest or most congested intersections. In order to address this issue, a new performance measure was first introduced with the Spring 2013 update and is once again included this year. It is referred to as volume weighted delay. This performance measure will be used to highlight those areas where the combination of delay and higher volumes lead to congestion and delay. The resulting value highlights the total exposure or relative number of vehicles that encounter the measured delay from the travel time runs. The volumes used are gathered from the 2004 validated travel demand model maintained by TxDOT. The average daily volumes are conflated to the intersection segments in GIS where a weighted average volume is determined based on the lengths of each model link. One element to note in using the model volumes is the distinction that the volumes represent daily (24 hour) volumes combined for both directions, while the delays calculated are directional for a specific time period (AM or PM peak period). Therefore, the performance measure is solely a relative measure of the magnitude of delay for a peak period which highlights the expected daily

volumes along the link in question. The average volumes for 2-way segments used in the calculation were divided in half to represent the relative volumes on the directional link in order to be able to compare to other segments that include 1-way volumes in the model such as frontage roads, mainlanes, or 1-way streets.

As expected, the results found with this new performance measure vary substantially from those using only Congestion Index. Congestion Index has been used exclusively for over 15 years by the MPO to rank deficient segments on the network. Over the years, it was seen that many of the higher ranked "congested" segments were secondary approaches or intersections that had high delays but lower volumes. By applying volume to the delay results, we can now represent the relative number of seconds of total delay given the number of vehicles experiencing the measured delay. For those approaches with high delays but relatively low volumes, they will fall down the list vs. those with less delay but very-high volumes. Thus, the list will represent those approaches where the most vehicles could benefit from some form of improvement.

Together with the TAC, a list of intersections was compiled to analyze further in the form of operational studies. The 80 intersections chosen are part of regional significant corridors that complement previous work performed with the 2016 CMP Tier II. It should be noted that no signals in the City of McAllen were included this time around since the City had begun its own in-house citywide signal coordination effort. The operational study results highlighted the benefits of traffic signal timing improvements. The results demonstrated the benefits of signal timing optimization while maintaining the existing geometry of each intersection by slightly increasing delay on adjacent secondary intersections, the overall corridor benefits.

In review of the results of the 2016 Winter CMP Tier II, 80 priority 1 locations were identified to be included in the 2019 / 2020 study. The initial task of this years' update included the performance of a "Self-Assessment" with each respective City responsible for signal maintenance. CoPLAN, along with a City representative, visited each intersection and performed a 97-point assessment of the signal equipment contents, working condition, capabilities, and limitations. The number 1 issue identified through the assessment was the determination that the majority of the intersections had limited vehicle detection. The percentages within each city ranged from 29% – 73%. These findings are the primary factor contributing to the unnecessary intersection delay caused by poor performing traffic signals. When detection fails, as a safety measure, the respective approach will put in a continuous call even though at times there are no vehicles. This leads to times when the minor side streets are given an extended green signal while the major arterial and high-volume approaches are forced to stop and be delayed while no vehicles are pass through the intersection.

In order to optimize the operations of the corridors and get the most value out of the coordinated signal timing, the intersection detection needs to be addressed by the cities responsible for the signals.

CoPLAN worked directly with designated representatives for each City (Brownsville, Edinburg, Pharr, and Mission) responsible for maintenance of the study signals. CoPLAN, along with the City representative, visited each study intersection as shown in **Figure 2 – 4** and **Table 2,** and performed an assessment of the signal equipment contents, working condition, capabilities, and limitations. The results of the detection assessment have been digitally coded and highlighted in **Table 3**. As included in **Table 3**, those intersections with at least 1 failing detector exceeded at least 29% and as high as 73% for those intersections maintained by the Cities. This along with the less than optimal signal timing are the two large contributing factors for the observed delay on the arterial network. Ideally, we would hope to see number closer to 10% of the

intersection needing maintenance. This needs to be given more attention by the cities to make sure things continue to function well following the completion of this project.

In addition to highlighting the need repair detection at a large percentage of intersection, the assessment also documented the need to replace a large number of aging signal controllers and cabinets. The age of many of the signal hardware are causing equipment failures and are beginning to act as roadblocks to addressing national requirements for standardization.
What that means is that all TS 1 cabinets need to be replaced at all the intersection to meet national requirements. This relates to not only dependability needs within the City for maintenance but for the required implementation of “flashing yellow” left turns and “countdown” pedestrian heads. Many of the regions’ cabinets do not have the capacity to incorporate these left turn treatments. To be in compliance, this is an initiative each City needs to dedicate funds to address over the next few years.

Based on the results of the assessment and consultation with each city, a few of the study intersections were removed while others were added. The number of study intersections were maintained while keeping a focus on those intersections and corridors identified as regionally significant. Factors to be considered include: maintenance needs, presence of and working condition of traffic detection (loops, video, etc.), controller model and software version, communications, pedestrian amenities, and ability to accommodate GPS clock if applicable.

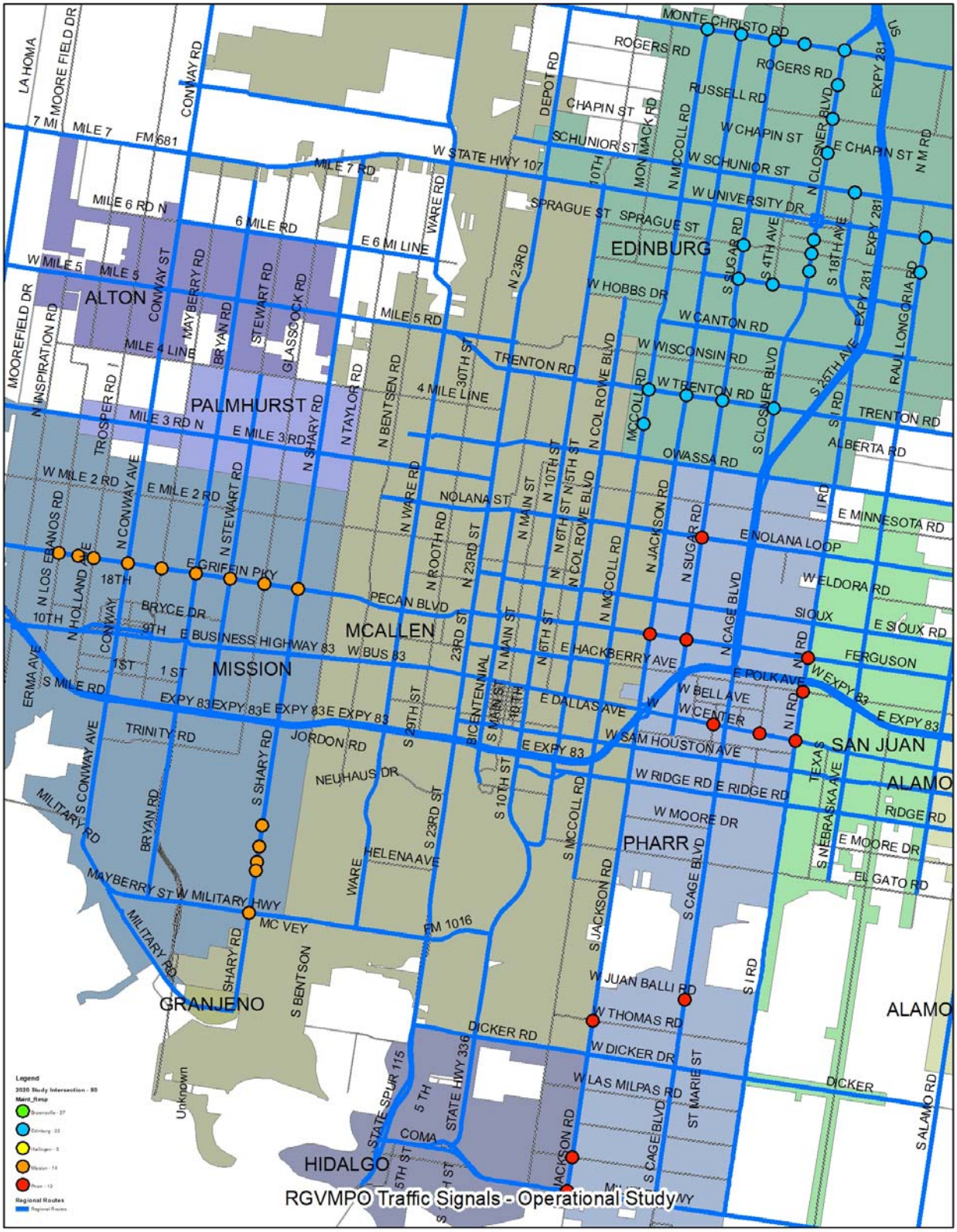


Figure 2 – Base Study Intersections (Hidalgo County Area)

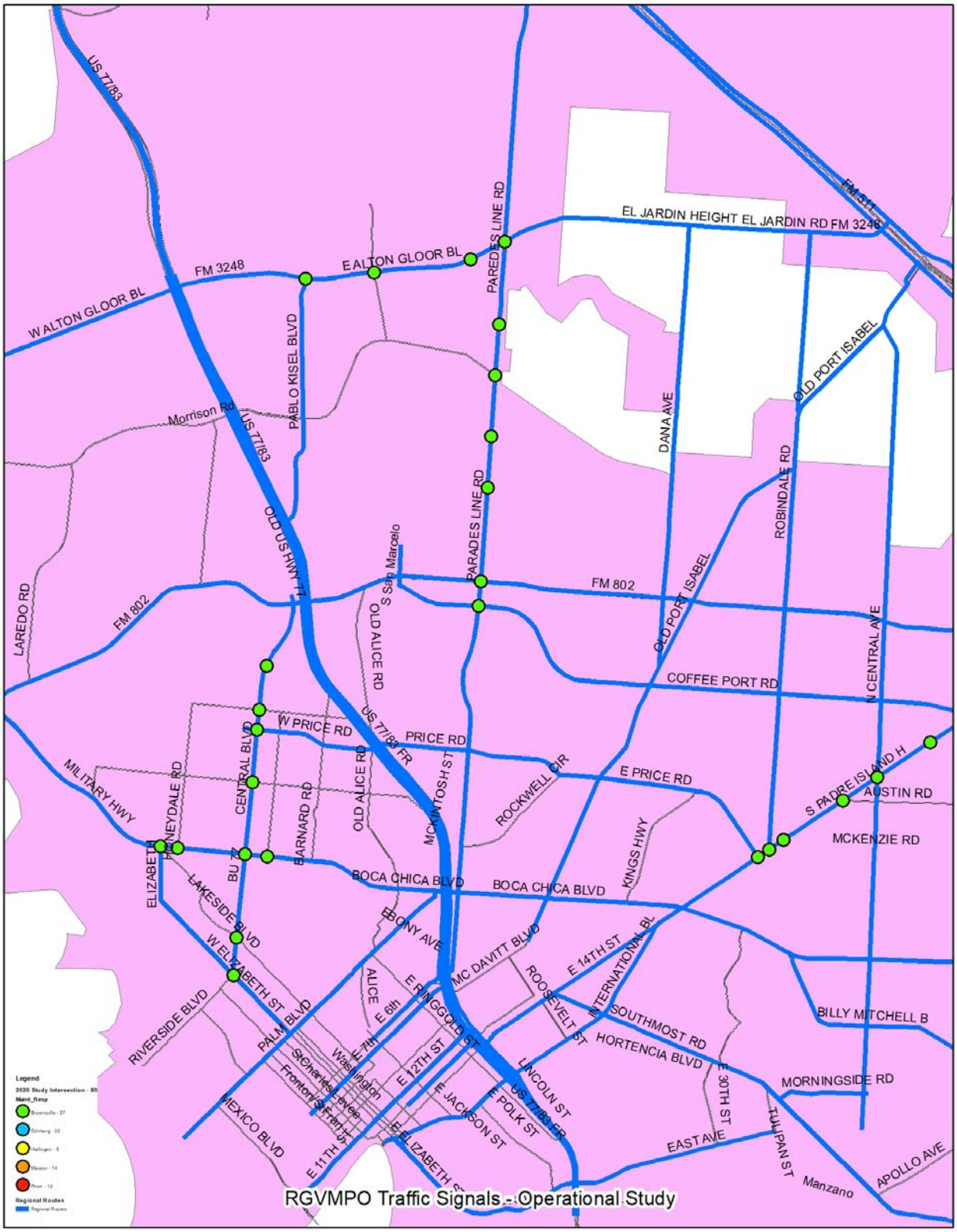


Figure 3 – Base Study Intersections (Brownsville Area)

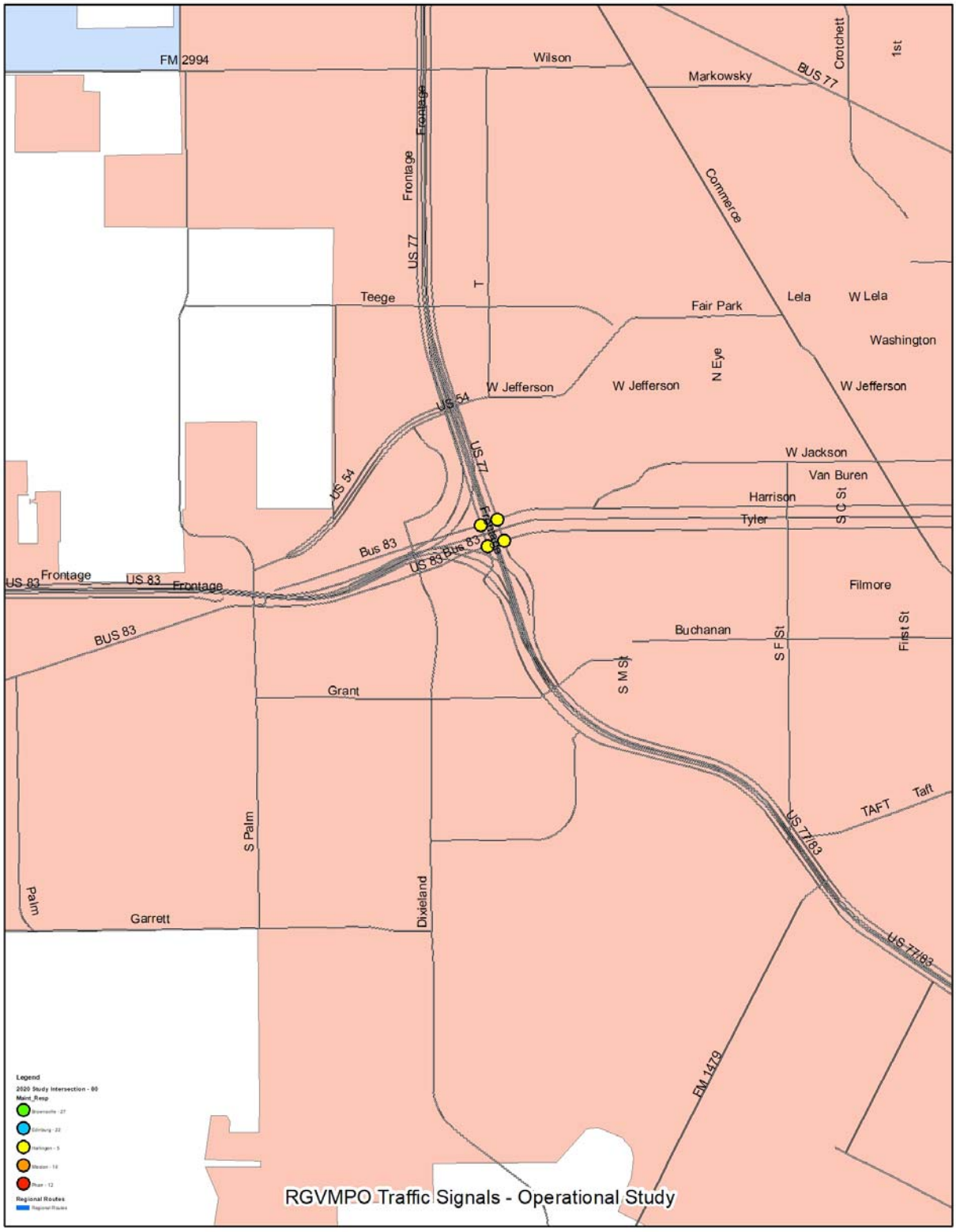


Figure 4 – Base Study Intersections (Harlingen Area)

Table 2 – Final Study Intersections

Study Int #	Major Approach	Minor Approach	City
1	Alton Gloor	Pablo Kisel	Brownsville
2	Alton Gloor	Stagecoach Trail	Brownsville
3	Alton Gloor	Ridgeline	Brownsville
4	Alton Gloor	Paredes Line	Brownsville
5	Paredes Line	Carlos Ave	Brownsville
6	Paredes Line	Morrison	Brownsville
7	Paredes Line	Heritage Trail	Brownsville
8	Paredes Line	Emerald Valley	Brownsville
9	Paredes Line	FM 802	Brownsville
10	Paredes Line	Coffee	Brownsville
11	SH 48	Price	Brownsville
12	SH 48	Robindale / Fruitdale	Brownsville
13	SH 48	McKenzie	Brownsville
14	SH 48	Austin Rd	Brownsville
15	SH 48	Central Ave	Brownsville
16	SH 48	Zena Dr	Brownsville
17	Military/Boca Chica	Old Military Hwy	Brownsville
18	Boca Chica	Honeydale	Brownsville
19	Boca Chica/ SH 48	Coria	Brownsville
20	Bus 77	Media Luna Rd / Old Hwy 77	Brownsville
21	Bus 77	Wild Rose	Brownsville
22	Bus 77	Price	Brownsville
23	Bus 77	Los Ebanos	Brownsville
24	Bus 77	SH 48	Brownsville
25	Bus 77	Jefferson / Lakeside	Brownsville
26	Bus 77/W 8thST	Elizabeth	Brownsville

Table 2 – Final Study Intersections ('Cont)

Study Int #	Major Approach	Minor Approach	City
27	Bus 281	SPRAGUE	Edinburg
28	Bus 281	FAY	Edinburg
29	Bus 281	RUSSELL	Edinburg
30	Bus 281	EBONY& CANAL	Edinburg
31	Bus 281	CHAPIN	Edinburg
32	Bus 281	RODGERS	Edinburg
33	SPRAUGE	4TH	Edinburg
34	FM 1926 (23rd / Depot)	SH 107	Edinburg
35	FM 1926 (23rd / Depot)	SPRAUGE	Edinburg
36	FM 1925	BUS 281	Edinburg
37	FM 1925	SUGAR	Edinburg
38	FM 1925	JACKSON	Edinburg
39	FM 1925	SALINAS	Edinburg
40	FM 1925	MCCOLL	Edinburg
41	McColl	ALBERTA	Edinburg
42	Schunior	18TH STREET / Veterens	Edinburg
43	Sugar	SPRAGUE	Edinburg
44	Sugar	FREDDY GONZALEZ	Edinburg
45	Trenton	SUGAR	Edinburg
46	Trenton	MCCOLL	Edinburg
47	Trenton	BUS 281	Edinburg
48	Trenton	JACKSON	Edinburg
49	Military Hwy	FM 509	Harlingen
50	US 77 NBFR	Harrison	Harlingen
51	US 77 NBFR	Tyler	Harlingen
52	US 77 SBFR	Harrison	Harlingen
53	US 77 SBFR	Tyler	Harlingen

Table 2 – Final Study Intersections ('Cont)

Study Int #	Major Approach	Minor Approach	City
54	FM 495	GLASSCOCK	Mission
55	FM 495	SH 107 (CONWAY)	Mission
56	FM 495	FM 494 (SHARY)	Mission
57	FM 495	BRYAN	Mission
58	FM 495	MAYBERRY	Mission
59	FM 495	HOLLAND	Mission
60	FM 495	STEWART RD	Mission
61	FM 495	GOLD	Mission
62	FM 495	LOS EBANOS	Mission
64	Shary	LOS INDIOS	Mission
65	Shary	FM 1016 (MILITARY)	Mission
66	Shary	LOS MILAGROS	Mission
67	Shary	PLANTATION GROVE	Mission
68	Bus 83	BLUEBONNET	Pharr
69	Bus 83	I ROAD / Veterens	Pharr
70	Bus 83	FIR	Pharr
71	Cage	Juan Balli Rd	Pharr
72	FM 495	SUGAR	Pharr
74	I Rd	FM 495 (FERGUSON)	Pharr
75	I Rd	ALAMEDA / Polk	Pharr/ San Juan
76	Jackson	HI - LINE	Pharr
77	Jackson	MILITARY HIGHWAY(US 281)	Pharr
78	Jackson	THOMAS	Pharr
79	Nolana	SUGAR	Pharr

Table 3 – Self Assessment Highlights (Detection)

	Brownsville	Edinburg	Mission	Pharr
Study Intersections	26	22	14	11
Intersections w/ Bad Detection	19	13	4	7
Average	73%	59%	29%	64%

Signal Timing Model Development

The existing timing plans were used to summarize the existing parameters used by each City and how they may vary between adjacent cities. The existing timing plans were used to create the initial Synchro baseline traffic signal model. Following the development of the baseline model, CoPLAN had one-on-one meetings to discuss local details and progress. CoPLAN facilitated discussions with representatives of each city to address timing parameter differences and work through options for those corridors that serve multiple cities. It was expressed by each City that they were flexible and willing to adjust local timing parameters based on what is best for the region.

Recommended Equipment and Implementation

Based on the agreed to parameters, CoPLAN developed the optimized traffic signal model for both and AM and PM periods. The AM and PM models reflected the recommended timing and include the results of discussions with each City regarding preferences for signal phasing. The existing signal phasing was maintained even though many intersections would benefit from the implementation of lead/lag left turns. This would be beneficial especially when trying to provide 2-way progression vs. giving priority in the higher peak direction. Lead/Lag was set aside for now but should be reconsidered once the region completes the implementation of “flashing yellow” left turns. Nationally it is felt that lead/lag left turns should not be used with protected/permission left turns without also having implemented “flashing yellow” arrows.

In contrast to the optimized timing implemented with the Cities in the 2016 Tier II CMP, there are no funds currently allocated to address traffic signal hardware deficiencies. Therefore, the implementation of optimized signal timings for the 80 intersections, was done with the respective cities without addressing vehicle detection failures or with any planned funds allocated for equipment procurement. Many of the study intersections include those intersections that received new equipment identified through the 2016 Tier II CMP.

The improved timing plans and maintenance of loop detectors will show a substantial improvement in operations. The tabulation of such benefits will be documented with the next CMP following the complete installation of the new equipment and comprehensive “after” studies when traffic volumes stabilize after COVID-19.

RGV MPO 2045

Metropolitan Transportation Plan



December
2020

This document was prepared in cooperation with:

The Rio Grande Valley Metropolitan Planning Organization

and

The Texas Department of Transportation

The document was reviewed and approved by:

The Rio Grande Valley Metropolitan Planning Organization – Transportation Policy Board

On 12/10/2020

Rio Grande Valley Planning Organization (RGVMPO)

Notice of Non-Discrimination

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Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d-1) and 49 CRF part 21; The Older Americans Act, as amended (42 U.S.C. 6101), prohibiting discrimination on the bases of age in programs or activities receiving Federal financial assistance; and Section 324 of title 23 U.S.C. regarding the prohibition of discrimination based on gender;

The RGVMPO is committed throughout the development of its plans and programs to ensure that no person on the grounds of age, gender, race color or national origin is excluded from participation in, denied the benefits of, or subjected to discrimination under any program receiving federal financial assistance. No plans, programs or policies developed or implemented by the RGVMPO will have a disproportionately high adverse human health or environmental effect on minority and low-income populations. The RGVMPO plans continue to work on improving the accessibility of employment to the identified protected populations. Further, many of the current MPO public meetings are held in minority and low-income communities in the region and are located near accessible public transit facilities. Funding is allocated as part of the Unified Planning Work Program for a Title VI Plan to maintain an analytical approach that produces procedures that meet Title VI requirements by ensuring that federally-funded transportation projects adequately consider effects on low-income and minority segments of the population.

In order to be processed, signed original complaint forms must be mailed or hand delivered to:

Rio Grande Valley Metropolitan Planning Organization ATTN: Title VI Coordinator 510 South Pleasantview Drive Weslaco, Texas 78596

Disadvantaged Business Enterprises (DBE) in planning projects: 49 U.S.C. 5332, prohibiting discrimination on the basis of race, color, creed, national origin, sex or age in employment business opportunity; and Section 1101 (b) of the SAFETEA-LU (Pub. L. 109-59) and 49 CFR part 26 regarding the involvement of disadvantaged business enterprises in USDOT funded projects; 23 CFR part 230, regarding the implementation of an equal employment opportunity program on Federal and Federal-aid highway construction contracts;

The RGVMPO follows the TXDOT DBE Plan. Funding is allocated as part of the Unified Planning Work Program to maintain an analytical approach that produces procedures that meet Environmental Justice requirements by ensuring that federally-funded transportation projects adequately consider effects on low-income and minority segments of the population.

Americans with Disabilities Act of 1990: The provision of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) and 49 CFR parts 27, 37, and 38; and Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794) and 49 CFR part 27 regarding discrimination against individuals with disabilities.

It is the policy of the RGVMPO to ensure that all agency programs and services are accessible to people with disabilities and are in compliance with the applicable regulations as a condition of receiving Federal financial assistance from the Department of Transportation. The RGVMPO will make reasonable accommodations to a qualified individual with a disability who attends on-site meetings and meeting facilities meet this requirement. Every effort is made to ensure that meeting facilities off-site are ADA accessible. A notice is published in advance of all MPO public meetings that reasonable accommodations will be provided for meeting locations on and off-site with a phone number and contact persons listed to provide assistance if needed. In addition, the RGVMPO staff is actively involved in various ADA-related initiatives which are being carried out as part of the Unified Planning Work Program including Elderly and Disabled Planning, the Job Access/Reverse Commute Program, and the review of ADA compliance documents developed by the region's transit and paratransit agencies, all of which focus on ensuring that transportation program and services across the region are accessible to those citizens with disabilities.

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Restrictions on influencing certain federal activities: CFR 29, Part 20;

It is the policy of the RGVMPO that no state or federal funds received by the agencies shall be paid to any person for the purpose of influencing the award of a federal contract, grant, or loan or the entering into of a cooperative agreement. NO state or federal funds received by the agencies shall be used directly or indirectly to influence any member of Congress, any member of the State Legislature, or any local elected official to favor or oppose the adoption of any prosed legislation pending before any federal, state, or local legislative body.

Credit/Disclaimer Statement

"The preparation of this report has been financed in part through grant[s] from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation, under the State Planning and Research Program, Section 505 [or Metropolitan Planning Program, Section 104(f)] of Title 23, U.S. Code. The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation."

Questions or other interest regarding the plan may be directed to:

Andrew Canon
Executive Director
acanon@rgvmpo.org

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1 INTRODUCTION TO THE PLANNING PROCESSES

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This chapter provides an introduction to the Metropolitan Transportation Planning process and the purpose of this document.

The chapter also provides a review of Federal and State enabling legislation for Metropolitan Planning Organization; background on the formation of the Rio Grande Valley Metropolitan Planning Organization; and a discription of the committees and staff that help ensure the process is conducted efficiently and in compliance with Federal and State requirements.

INTRODUCTION TO THE MTP PROCESS

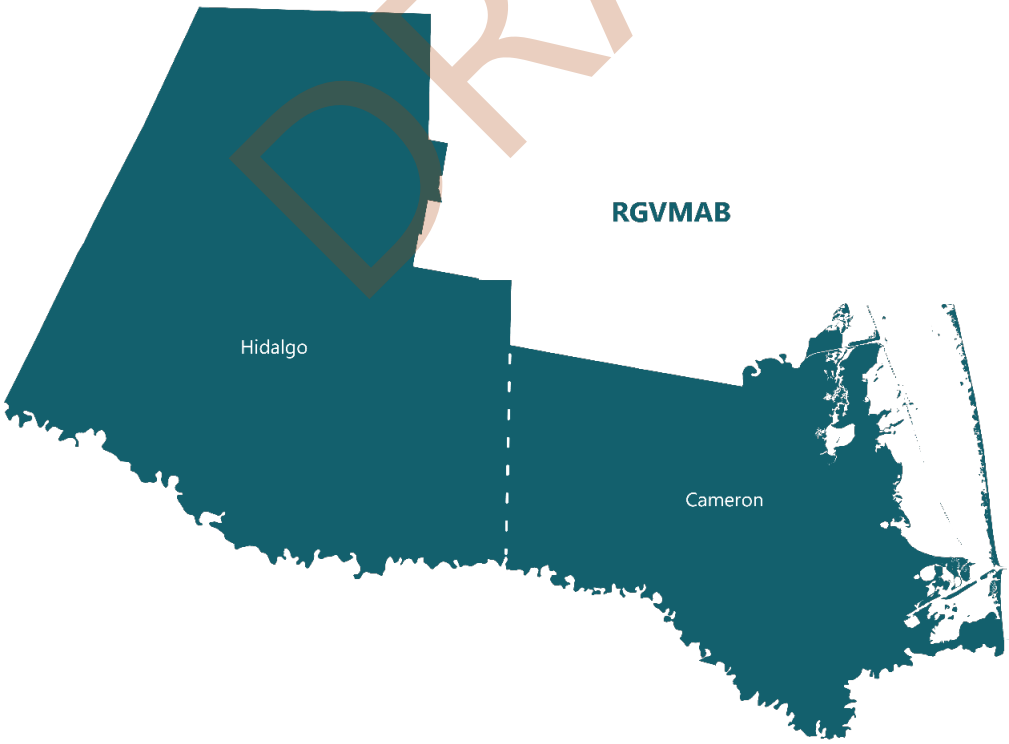
Since the establishment of the Federal Highway Act of 1962, all major cities within the United States are required to adopt a Metropolitan Transportation Plan (MTP) to guide the long-term development of each region's multimodal transportation system. The Act established specific rules and regulations for carrying out the long-range transportation planning process and required the formation of metroplitan planning organizations (MPOs) for any urbanized area (UZA) with a population greater than 50,000.

The Metropolitan Transportation Planning Process is a cooperative, comprehensive, and continuous (3-C) effort conducted by an MPO. Although the process is federally mandated, the process must be executed in coordination with the state's Department of Transportation, local transit operators, regional stakeholders, and the public to create a vision for the community and future multimodal transportation system.

The Rio Grande Valley Metropolitan Planning Organzation (RGVMPO) is the newly designated MPO for the Rio Grande Valley Metropolitan Area Boundary (RGVMAB). The RGVMPO 2045 MTP update is the first MTP using comprehensive methods and data for the newly aggregated RGV Metropolitan Area Boundary (RGVMAB) which consists of Cameron and Hidalgo counties (Figure 1-1). This plan is driven by previous state, regional, and local plans; robust technical analysis on all aspects of the RGVMAB transportaton system; as well as inclusive stakeholder and public outreach. The plan is developed in coordination with the Texas Department of Transportation (TxDOT).

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Figure 1-1: RGV Metropolitan Area Boundary



Plan Purpose

The MTP is critical for creating and maintaining an efficient multimodal transportation system. The MTP achieves this outcome through the facilitation of regional coordination and the prioritization of multimodal transportation projects. This prioritization is accomplished through a performance-driven, outcome-based approach to planning.

MTP updates are conducted every four to five years to ensure that the MPO is basing its decsions on the latest planning assumptions and that changing local conditions and trends are being taken into consideration in the long-range transportation planning process The initial planning is also followed by a performance management process that collects data on the performance of the regional transportation system to track progress over time and ensure that the MTP results in the continuous enhancement of the region's transportation system.

Federal regulations require specific content to be included in the plan document which ties into project prioritization. The RGVMPO is responsible for carrying out provisions of 23 USC §134, 59 USC §5303 (Metropolitan Transportation Planning) and 23 CFR 450.300 et seq. (Metropolitan Transportation Planning and Programming). Under these regulations, the planning process and final MTP are required to include:

- A vision that aligns with community goals;
- A multimodal approach that includes projects spanning all aspects of the transportation system;
- A minimum 20-year planning horizon (the RGVMPO 2045 MTP update planning horizon is approximately 25 years);
- A financial outline proving the plan is financially responsible and fiscally constrained;
- An air quality analysis to show forecasted emissions will not exceed National Ambient Air Quality Standards (NAAQS); and
- A comprehensive and inclusive public participation process that engages all interested parties with particular sensitivity to traditionally disenfranchised communities.

This process allows for the creation of an MTP that promotes an understanding of existing regional conditions of the transportation system, supports intergovernmental coordination, and develops a fiscally constrained and prioritized list of transportation projects and strategies to achieve regional mobility goals.

A Comprehensive Approach

The RGVMPO 2045 MTP update is being created concurrently with the RGVMPO Active Transportation and Transit Development Plans. While the MTP process has been designed to create a framework for multimodal transportation planning within the RGVMPO, it also works in tandem with these other two plans to create a deeper understanding of the conditions and needs of the multimodal network.

Public engagement efforts for all three plans were carefully coordinated to ensure that the community vision, goals and objectives were aligned across the plans. This comprehensive approach allows for more informed multimodal transportation investments and implementation moving forward.

ROLE OF THE MPO

The development of the RGVMPO 2045 MTP is goverend by the requirements of the Fixing America's Surface Transportation (FAST) Act and its accompanying metropoltan planning regulations. Under these federal regulations, the RGVMPO is responsible for carrying out the 3-C planning process in cooperation

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with all levels of government to develop the MTP. Doing so allows the RGVMPO and its planning partners to determine how best to invest federal transportation funding in the region. The RGVMPO also serves as the designated forum for transportation program related decision making by principal elected officials of general-purpose local governments in the metropolitan planning area.

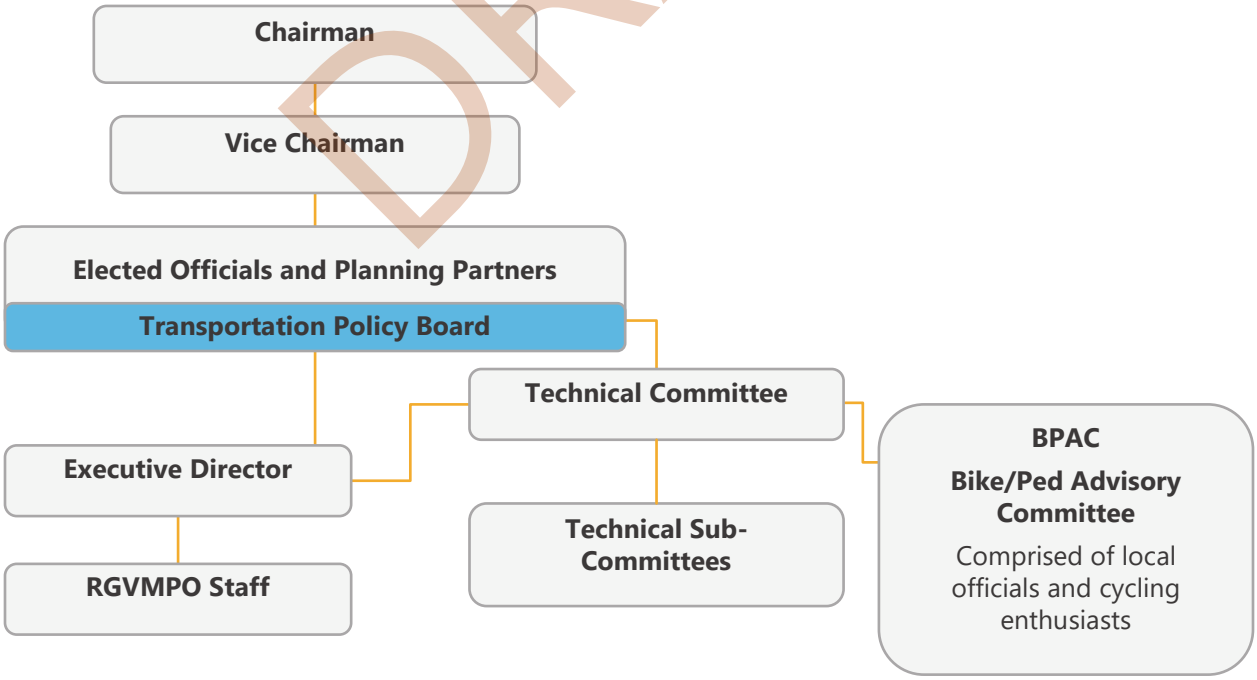
Formation of the RGVMPO

On April 24, 2019 elected officials from units of general-purpose local governments that together represented at least 75% of the existing metropolitan planning area population (previously Brownsville, Harlingen-San Benito, and Hidalgo County MPOs - as well as the largest city in each of these MPOs), executed an agreement to re-designate into one consolidated MPO. This agreement established a proposed boundary area for the RGVMPO to include all the territory in the existing metropolitan planning areas for the three MPOs (i.e., Hidalgo and Cameron counties). After a period of review, Governor Abbot accepted and signed the proposed re-designation agreement. On October 1, 2019, the RGVMPO was officially formed.

Since its formation, the RGVMPO has sought to improve the area's quality of life through its vision/mission "to provide clear, concise transportation planning to positively impact the daily lives of RGV residents by planning for a safe and efficient multimodal system." The RGVMPO strives to accomplish this by incorporating four core values: trust, communication, innovation, and collaboration.

The following sections detail the personnel behind the MTP planning process, which consists of the Transportation Policy Board, Technical Advisory Committee, Bicycle and Pedestrian Advisory Committee, and MPO staff. Figure 1-2 represents the RGVMPO Organizational Chart.

Figure 1-2: RGVMPO Organizational Chart



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Transportation Policy Board

Elected and appointed officials comprise the Transportation Policy Board (TPB), which is responsible for approving and adopting all transportation planning activities and programs of the RGVMPO. The TPB was established in 2019 with the re-designation of the RGVMPO to meet federal requirements and serves as a spokesperson for citizens of the RGVMAB. Membership of the TPB is governed by an agreement between the affected local governments and the Governor of Texas and is reviewed periodically to ensure adequate representation of all parties. The current TPB consists of 14 voting members, with representatives from member agencies as presented in Table 1-1.

Table 1-1: RGVMPO Transportation Policy Board

Title/Representation	Current Representation
City of Pharr - Mayor	Ambrosio "Amos" Hernandez (Chairperson)
Cameron County - Judge	Eddie Treviño, Jr. (Vice-Chairman)
Cameron County – Regional Mobility Authority	Frank Parker, Jr.
City of Brownsville - Mayor	Trey Mendez
City of Edinburg - Mayor	Richard Molina
City of Harlingen - Mayor	Chris Boswell
City of McAllen - Mayor	Jim Darling
City of Mission - Mayor	Armando O'Caña
City of San Benito - Mayor	Benjamin Gomez
Hidalgo County - Commissioner Precinct 2	Eduardo "Eddie" Cantu
Hidalgo County - RMA	S. David Deanda, Jr.
TxDOT Pharr District - Engineer	Pedro "Pete" Alvarez, P.E.
Valley Metro - Director	Tom Logan
LRGVDC* - Executive Director	Manuel Cruz

**Lower Rio Grande Valley Development Council*

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Technical Advisory Committee

The Technical Advisory Committee (TAC) makes planning recommendations to the TPB regarding subject matter issues such as MPO generated documents and analysis; project selection criteria; special transportation planning studies; and other issues for immediate action. The TAC totals 19 voting members, and includes planners, engineers, and representatives from ports and transit providers as listed in Table 1-2.

Table 1-2: RGVMPO Technical Advisory Committee

Representation	Current Representation
Cameron County - Regional Mobility Authority	Pete Sepulveda, Jr. (Chairman)
City of Mission	JP Terrazas, P.E.
Cameron County	Benjamin L. Worsham, P.E.
City of Brownsville	Joel Garza
City of Edinburg	Tomas D. Reyna
City of Harlingen	Carlos Sanchez
City of McAllen	Yvette Barrera
City of Pharr	Eleazar Guajardo
City of San Benito	Bernard Rodriguez
Hidalgo County	Armando Garza
Hidalgo County - Regional Mobility Authority	Eric Davila
TxDOT - Pharr District	Melba Schaus, P.E.
Valley Metro	Frank Jaramillo
Brownsville Metro	Norma Zamora
McAllen Metro	Jon Ray Bocanegra
Port of Harlingen	Alan Johnson
Cameron County Spaceport Development Corp	Mark Yates
Port of Brownsville	N/A
Port Isabel - San Benito Nav. District	N/A

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Bicycle & Pedestrian Advisory Committee

The Bicycle and Pedestrian Advisory Committee (BPAC) is a subcommittee of the TAC. The BPAC addresses subject matter concerning bicycle and pedestrian mobility and presents its recommendations to the TAC. Members include appointed TAC members, bicycle advocates, pedestrian advocates, and organizations with a stake in bicycle and pedestrian mobility (Table 1-3).

Table 1-3: RGVMPO Bicycle & Pedestrian Advisory Committee

Title/Representation	Current Representation
Citizen at Large	Rose Gowen (Chair)
Citizen at Large	Michael McNew (Vice Chair)
Bicycle Advocate at Large	William "Bill" Barr
City of Brownsville	Cody Baczewski
City of Brownsville	Antonio Zubieta
Citizen at Large	Eudy Carrillo
City of Pharr	Cynthia Garza Reyes
City of Pharr	Maria Rangel
Citizen at Large	Michael Padgett
City of McAllen	Marlen Garza
City of McAllen	Martina Mejia
Citizen at Large	Richard Cavin
Rio Grande Valley B-Cycle	Juan Macias
Valley Metro	Frank Jaramillo
Estero Llano Grande State Park	Javier De Leon
City of Harlingen	Andy Vigstol
City of Harlingen	Javier Mendez
City of Edinburg	Larry Ayala
Bicycle World Rio Grande Valley	Ana Adame
TxDOT	Craig Wuensche
TxDOT	Joseph E. Leal
TxDOT	Evan Roberts

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RGVMPO Staff

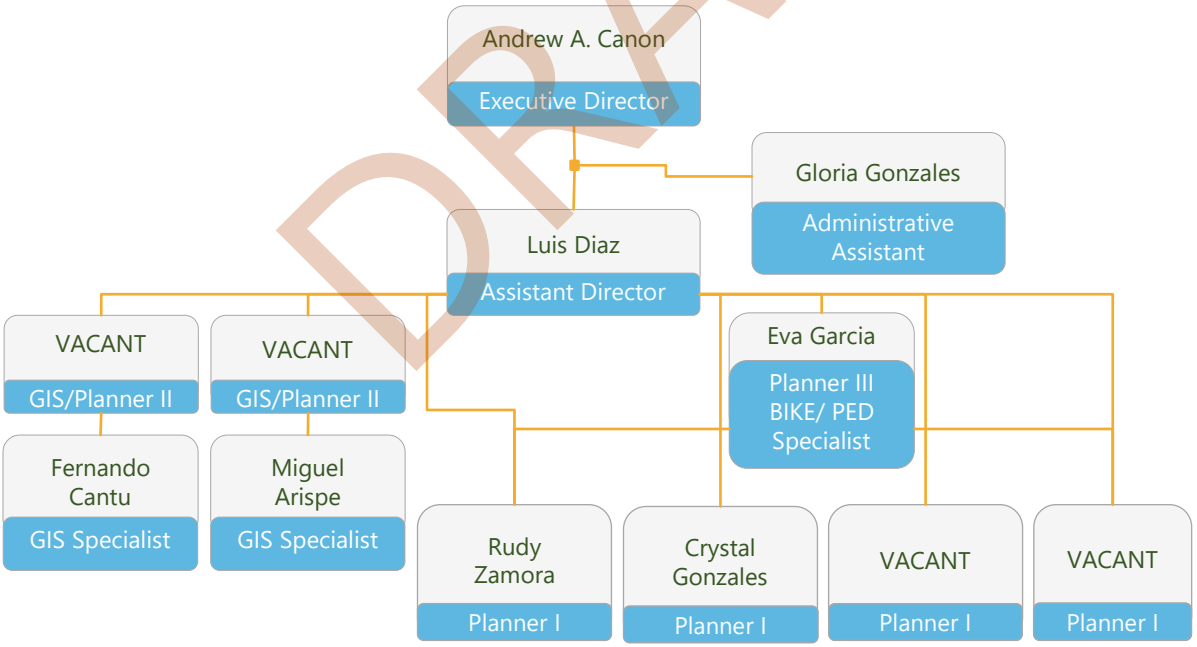
The MPO Board and Committees are supported by a staff of professional planners and administrators who conduct and oversee the Metropolitan Planning Process and carry out the day to day administration of the metropolitan planning program in accordance with federal, state and local guidelines. Table 1-4 lists existing MPO staff and Figure 1-3 shows the organizational structure for the staff.

Table 1-4: RGVMPO Staff

Title	Current Representative
Executive Director	Andrew Canon
Administrative Assistant	Gloria Gonzales
Assistant Director	Luis Diaz
Planner III & Bike/Ped Specialist	Eva Garcia
Planner I	Crystal Gonzales
Planner I	Rudy Zamora
GIS Specialist	Miguel Arispe
GIS Specialist	Fernando Cantu

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Figure 1-3: RGVMPO Staff Organizational Chart



2 DEVELOPING VISION, GOALS, AND OBJECTIVES

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This chapter describes the process used in developing the guiding vision, goals, and objectives of the planning process established for the RGVMPO 2045 MTP.

The Chapter further summarizes how this process uses performance measures to gauge how well proposed strategies support the established vision and goals.

Together the vision, goals, objectives, and performance measures comprise the RGVMPO 2045 MTP's guiding principles.

FEDERAL GUIDELINES

In 2015, the Fixing America's Surface Transportation (FAST) Act became the fifth intermodal surface transportation bill passed by Congress since 1991, the previous four laws being the Intermodal Surface Transportation Efficiency Act (ISTEA), the Transportation Equity Act for the 21st Century (TEA-21), the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), and the Moving Ahead for Progress in the 21st Century Act (MAP-21). The FAST Act and its predecessors have served as a means to provide funding to states and local governments for surface transportation planning and investment. The FAST Act authorized $305 billion nationally for projects related to highways, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail, and research, technology, and statistics programs over five fiscal years (2016 – 2020). Though this initial time period is concluding, Congress is reviewing continuing legislation to extend FAST Act authorization on a yearly basis untill a new bill is formed.

Planning Factors

The FAST Act retains the eight federal planning factors established under ISTEA and expanded under SAFETEA-LU, while adding two additional factors for consideration in the planning process. This MTP describes how the RGVMPO provides for consideration and implementation of projects, strategies, and services that address these FAST Act planning factors, which include investments that:

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness
2. Increase the safety of the transportation system for motorized and nonmotorized users;
3. Increase the security of the transportation system for motorized and nonmotorized users
4. Increase accessibility and mobility of people and freight
5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight
7. Promote efficient system management and operation
8. Emphasize the preservation of the existing transportation system
9. Improve resiliency and reliability of the transportation system and reduce or mitigate storm water impacts of surface transportation*, and
10. Enhance travel and tourism*.

*New factors introduced by the FAST Act

Though these planning factors are discussed throughout the entirety of the MTP, Chapter 5 describes, in detail, how each of these factors is given consideration during the planning process.

National Performance Goals

The FAST Act also maintains the requirement for a continuing, cooperative, and comprehensive long-range transportation planning process for making transportation decisions in metropolitan areas, while

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continuing and further defining requirements set forward in MAP-21 for state DOTs and MPOs to set performance measures and goals.

The application of performance measures to evaluate whether policies and transportation investments addresses goals in transportation planning creates the framework for a performance-based decision-making process. This decision-making process uses objective, data-driven analysis to identify issues and assess proposed improvements against existing and expected future performance in these goal areas. The process also inspires reasonable expectations that this data driven approach inherently increases transparency in decision making, and in turn yields investments that better align with the long-term mobility needs and goals of the community.

As major stakeholders in the multimodal transportation system, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have set forward National Performance Goals in order to encourage efficient investment of Federal transportation funds, increase the accountability and transparency of funding decisions, and to improve project decision-making through performance-based planning and programming. The FHWA defined national performance goals[1] are as follows:

1. **Safety** — To achieve a significant reduction in traffic fatalities and serious injuries on all public roads
2. **Infrastructure condition** — To maintain the highway infrastructure asset system in a state of good repair
3. **Congestion reduction** — To achieve a significant reduction in congestion on the National Highway System (NHS)
4. **System reliability** — To improve the efficiency of the surface transportation system
5. **Freight movement and economic vitality** — To improve the National Highway Freight Network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development
6. **Environmental sustainability** — To enhance the performance of the transportation system while protecting and enhancing the natural environment
7. **Reduced project delivery delays** — To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices

The FTA has set additional performance goals focusing on Safety and Asset Management that provide guidance on the implementation of scalable systems-level thinking processes for FTA funding recipients nationwide. Both FHWA and FTA performance goal areas and associated performance measures are presented in Table 2-1.

The application of these goals and the performance measures used in identifying existing needs and reporting transportation system performance to inform the decision-making process are discussed in greater detail in Chapters 4 and 5. A system performance report is also provided in the final chapter of the MTP.

[1] https://uscode.house.gov/view.xhtml?req=(title:23%20section:150%20edition:prelim)

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Table 2-1: Performance Goal Areas and Associated Performance Measures

Performance Goal Area	Performance Measure
FHWA PM1 Safety	Number of Fatalities
	Rate of Fatalities per 100 million Vehicle Miles Traveled (VMT)
	Number of serious injuries
	Rate of serious injuries per 100 million VMT
	Number of non-motorized fatalities
	Number of non-motorized serious injuries
FHWA PM2 Infrastructure Condition	Percentage of pavements of the Interstate System in Good condition
	Percentage of pavements of the Interstate System in Poor condition
	Percentage of pavements of the non-Interstate NHS in Good condition
	Percentage of pavements of the non-Interstate NHS in Poor condition
	Percentage of NHS bridges classified as in Good condition
	Percentage of NHS bridges classified as in Poor condition
FHWA PM3 System Performance/Freight/ Congestion Management and Air Quality	Percentage of person-miles traveled on the Interstate that are reliable
	Percentage of person-miles traveled on the non-Interstate NHS that are reliable
	Percentage of Interstate system mileage providing for reliable truck travel time (TTTRI)
	* Annual Total Tailpipe CO2 Emission on NHS
	* Annual Hours of Peak Hour Excessive Delay (PHED) per capita
	* Percent of Non-SOV Travel on network
FTA State of Good Repair	Percentage of revenue vehicles (by type) that exceed useful life benchmark (ULB)
	Percentage of non-revenue service vehicles (by type) that exceed ULB
	Percentage of facilities (by group) rated less than 3.0 on Transit Economic Requirements Model (TERM) scale
FTA Safety	Total number of reportable fatalities
	Rate of reportable fatalities per total vehicle revenue miles by mode
	Total number of reportable injuries
	Rate of reportable injuries per total vehicle revenue miles by mode
	Total number of reportable events
	Rate of reportable events per total vehicle revenue miles by mode
	Mean distance between major mechanical failures by mode

**Applies to areas designated as nonattainment or maintenance for ozone, carbon monoxide or particulate matter.*

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PLAN REVIEW

The metropolitan transportation planning process also considers directly or by reference how the goals, objectives, performance measures, and targets beyond those set by federal guidance. The additional input is derived from state, regional, and local transportation plans and transportation processes, as well as other locally developed plans by providers of public transportation, all of which are integrated in the metropolitan transportation planning process.

The integration of the goals, objectives, and performance measures in these plans helps both ensure that the stakeholder input is maximized, and that the planning process is comprehensive.

The following sections review and summarizes planning documents at the state, regional, and local level as part of this process to ensure consistency with regional planning efforts and ongoing state and local planning activities.

Multimodal Transportation Planning Efforts

Documents produced by the three former MPOs in the Rio Grande Valley (Brownsville MPO, Harlingen San Benito MPO, and Hidalgo County MPO, represent considerable effort and coordination in establishing and working towards regional goals. These three MPOs and their regional planning partners, have been the primary authors of the following documents.

Hidalgo County MPO 2015-2040 Metropolitan Transportation Plan

In 2014, the HCMPO adopted the 2015-2040 MTP, a long-range transportation planning document which identifies priorities for development programs and transportation projects within the Hidalgo County Urbanized Planning Area. The document identified existing and future land use trends and transportation needs and developed coordinated strategies to deliver transportation projects essential for the continued mobility and economic vitality of the Hidalgo County Urbanized Planning Area.

The Hidalgo County MTP sought to balance investments in various transportation modes against anticipated funding from federal, state, and local sources, while maintaining flexibility to address the dynamic changes in both the needs and resources of the community. Levels of acceptable system performance may vary among local communities, so performance measures were tailored to the specific needs of the area and established cooperatively by the state, the MPO, and local officials in consultation with the operators of major modes of transportation in the coverage area.

2040 Harlingen-San Benito Metropolitan Transportation Plan

In 2014, the HSBMPO adopted the 2040 Harlingen-San Benito MTP. The plan assessed the existing conditions of the region related to demographics, socioeconomics, and the transportation system, set a vision for the future of the transportation system to be implemented by stated goals and objectives, explored potential areas of system improvements, defined a program of transportation projects, set forth a financial plan to fund the projects, and discussed concerns about environmental/community impacts and how the MPO planned to address such impacts. In addition, the plan provided a summary of public engagement efforts conducted, the questions asked, and feedback provided by citizens who participated in the process.

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The most recent update of the list of 2040 MTP projects were adopted in October of 2018 and identified 31 projects falling into the following categories:

- Mobility (contains primarily roadway projects along with a handful of sidewalk projects)
- Safety
- On/Off System Bridges
- Transportation Enhancements
- Operational Improvements
- Comprehensive Development Agreement
- Preliminary Engineering
- Transit

2020-2045 Brownsville Metropolitan Transportation Plan

In 2019, the Brownsville MPO adopted the 2020-2045 MTP, which identified policies, programs, and improvement projects to address the evolving needs of the Brownsville Urbanized Planning Area over the long-range planning horizon of 25 years. This plan also prioritized transportation projects based on a variety of values (such as indicating environmental impacts, adding roadway capacity, contributing towards economic vitality, improving transit, etc.), which guide the development of the overall transportation system. The overarching goals for this MTP were to:

- Support economic vitality
- Increase safety and security
- Increase accessibility and mobility
- Protect and enhance the environment
- Promote efficient management and operation of the transportation system

One Vision, One Harlingen

One Vision, One Harlingen is the City of Harlingen's 2016 Comprehensive Plan and was adopted in 2016. The plan's transportation-focused goal is that "Harlingen will continue to maintain and create excellent regional and local transportation options that enhance the character of the city and provide for all modes of travel." Objectives to meet this goal include planning for connectivity, improving the appearance and aesthetics of key roadways in gateway areas, diversifying mode choice by providing more options for pedestrian and bicyclists, and strengthening the networks that provide for freight movement (airport, rail, ports) and border crossings. The plan lists a set of key strengths that already exist within the region and that should be expanded or utilized to their full potential to help achieve the plan's vision. Two of these strengths include the existing transportation network with its potential to increase connections to the international network, and the Valley International Airport with its potential to expand and act as an engine for economic growth. In addition, one of the major themes in the plan's vision and goals is economic development, which is directly affected by the quality and extent of the region's transportation system. The plan's transportation section recommends a multimodal approach to address transportation issues as well as context sensitive solutions and complete streets as guides for decisions about the future transportation system.

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City of Hidalgo Comprehensive Plan 2015-2035

Adopted in August 2015, the *City of Hidalgo Comprehensive Plan 2015-2035* focuses on issues of growth and development including community facilities/infrastructure, economic development, transportation, housing, social vulnerability, parks, and environment. Issues and threats are addressed with proposed solutions and supported with maps and other analytical tools. Through a brief description of grants and other funding opportunities in the areas of transportation, community facilities, historic preservation, economic development, parks and environment, and housing, the comprehensive plan provides an implementation table which matches funding programs to action items.

City of Edinburg Comprehensive Plan 2025 & Ongoing Edinburg Gateway Plan

The Edinburg Comprehensive Plan provides goals, objectives, and related policies as ways to determine planning and development strategies through the year 2025. Currently, the City is developing an updated comprehensive plan entitled Edinburg Gateway Plan. The current plan integrates the areas of land use and community character, growth and development, transportation, economic development, and utilities while offering short- and long-term program and development activities.

Harlingen Long-Range Thoroughfare Plan

Adopted in May 2013, the City of Harlingen's Long-Range Thoroughfare Plan consists of a map that shows the locations of existing and proposed roadways, from local roadways up to freeways/expressways. The plan is meant to act as "a tool for guiding right-of-way dedications, land subdivisions, and other development actions." The map shows that the north and south sides of the City's Extraterritorial Jurisdiction (ETJ) contain the most proposed new roadways, particularly major and minor arterials.

San Benito Comprehensive Plan

In 2016, the City of San Benito adopted its most recent Comprehensive Plan. Some of the plan's guiding principles most directly related to transportation include a diversified economy, maintenance of infrastructure, a revitalized downtown, recreational amenities, trails, and connectivity. The Transportation and Circulation chapter identifies several focus areas as part of a policy framework to guide the future development of the San Benito multimodal transportation network. These focus areas include:

- Improving International and Regional Mobility
- Ensuring a Well-Connected and High-Quality Street Network
- Improving Corridor Design and Appearance
- Providing Enhanced Pedestrian and Bicycle Mobility
- Establishing a New Thoroughfare Plan

In addition, a set of strategies, initiatives, and actions is provided to aid in accomplishing or implementing the goal of each focus area. The plan's implementation section also identifies a list of transportation programs and projects, the time frame in which each should be accomplished, and entities that should be involved.

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La Feria Comprehensive Plan

The *La Feria Comprehensive Plan* was adopted in 2007 with a plan horizon of 2025. The plan's stated purpose is to act as "a guide for the physical development of the community by identifying characteristics and features, which influence community growth patterns." The plan includes sections on implementation, history of the area, economy, population, housing, land use, parks and recreation, thoroughfares, the central business district, subdivision regulations, zoning, and capital improvements. The thoroughfare section identifies two goals with several objectives each. These goals relate to implementing the City's street standards and possibly updating them as well as developing "major" and "collector" streets with adequate right-of-way and pavement width. Key recommendations identified in the plan involve developing some specified roadways into "major" streets. Several transportation-related objectives are also reiterated in other sections of the plan, such as the economic section, the housing section, the land use section, and the parks and recreation section.

Imagine Brownsville, Comprehensive Plan, 2014

In 2009, the City of Brownsville adopted the *Imagine Brownsville Comprehensive Plan*, which strives to take a holistic approach at connecting the community vision and goals, which were based on public feedback, to future growth and development patterns. The plan consists of four sections: Planning Process, Vision and Challenges, Comprehensive Plan Elements, and the Implementation Plan. Facilitation of this plan was done by forming a planning task force, which was made up of representatives from all core elements of the plan. Comprehensive Plan Elements consist of ten elements, which include four core elements supported by six smart growth/sustainability elements. Core elements include Land Use, Downtown, Economic Development, and Mobility/Infrastructure, which are supported by Smart Growth/Sustainability Elements (Civic, Education, Equity, Healthcare, Emergency Management, and Environment).

Comprehensive Plan, South Padre Island, 2014

In 2014, the City of South Padre Island adopted their latest Comprehensive Plan. This mission of the plan is as follows:

"South Padre Island is a unique, friendly seaside resort community that values its residents and tourists, preserves and protects the natural environment, and provides for quality sustainable growth and development that is highly diverse and responsive to changing economic conditions."

This mission statement is the basis of the comprehensive plan, which can be seen through the goals and objectives set throughout. The plan focuses on increasing the quality of life for current residents by continuing to provide attractive amenities to the tourist culture they have cultivated. This includes enhancing physical aesthetics, while minimizing health risks and environmental hazards and degradations, which includes enhancing parks and recreational opportunities. Another aspect of the plan focuses on providing more efficient, reliable multimodal transportation to support local travel and help move tourists throughout the city.

With these two goals in mind, the plan would also like to ensure that future growth is both smart and met with the proper amount of public service by facilitating growth using infill development, building with sustainable resources, and preventing future development from becoming a source of pollution or degradation. As growth occurs, the City would also like to ensure that the proper precautions are taken to ensure the economy and the residents are safe from any type of emergency or unexpected event.

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South Padre Island, Transportation Plan Report, 2011

The Transportation Plan Report, which was drafted in 2011, expands on Comprehensive Plan goal of providing an efficient and reliable multimodal transportation system, while creating a corridor master plan focused on the Entertainment District and Padre Boulevard. This plan includes a market analysis of future market demand and short- and long-term forecasts. The plan report also contains, a summary of design workshops and meetings used to establish a vision for Padre Boulevard and the Entertainment District, a form-based code, and an integrated multimodal plan. A stated purpose in this report is to establish a framework to address transportation needs of the future as the population grows and tourism increases.

Cameron County Non-Radioactive Hazardous Material Route Plan

This plan, adopted in May 2010, was created to designate routes where commercial vehicles carrying non-radioactive hazardous materials can travel through Cameron County. The objective of the study was to select "routes that minimize both the potential for hazardous materials incidents and the consequences for the residents of Cameron County should an incident occur." The recommended routes that resulted from the study include segments of US 77, SL 499, FM 106, US 83, FM 509, and SH 550.

Traffic Light Synchronization Study

The HSBMPO's Traffic Light Synchronization Study was adopted in 2012. Its purpose was to "improve overall traffic flow at signalized intersections by optimizing traffic signal timings and reducing overall delays." The study collected data such as turning movement counts, intersection lane configurations, speed limits, storage lengths and pedestrian volumes to conduct its analysis and make recommendations for signal timing optimization. The result of the study was optimized signal timing plans for 41 signalized intersections throughout Harlingen, San Benito, and La Feria. Operations are expected to improve with the implementation of the timing recommendations, however the study also found that some of the intersections in the region did not have adequate configurations to handle the traffic volumes experienced regardless of signal timing optimization. The study provided a set of intersection improvement recommendations for those intersections.

Congestion Management Plan – Currently Being Drafted

The scope of Congestion Management Process (CMP) is to gather data on congestion levels in the urbanized areas of Rio Grande Valley. This CMP network consists of roadways within the RGVMPO area that are either FHWA functionally classified or identified as a transit route. The information to be gathered, includes but is not limited to, the travel times and delays for each identified road segment in the network. This process resulting plan likewise informs cost balanced strategies for reducing delay and congestion. Data gathering and traffic counts for the current CMP are being carefully reviewed and balanced in light of atypical traffic due to COVID-19.

Public Transportation Planning Efforts

Public Transportation Operational Analysis and Implementation Plan

Adopted in February 2013, this plan's purpose was "to evaluate existing transit services within the former HSBMPO's service area and to determine how service can be improved over the next decade." The plan inspects the existing system, which is served by Valley Metro, including the current routes, ridership information, and markets served. The plan also provides design guidelines, service improvement

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scenarios, and a funding analysis. The service improvement scenarios include recommendations for new routes, bus stops and passenger amenities, and proposed adjustments to existing routes and services.

LRGVDC Valley Metro Transit Asset Management Plan

On October 17th, 2018, HSBMPO passed a resolution in support of *Valley Metro's Transit Asset Management (TAM) Plan*. TAM Plans are required by the FTA for transit agencies receiving federal funding. The purpose of TAM plan is to help ensure that transit agencies maintain a state of good repair for all their assets so that their operations will continue to be safe and cost effective. The Valley Metro TAM Plan sets forth a series of performance targets and measures that will help the agency plan ahead for asset replacement and cap amount of allowable assets past their ULB or in an unacceptable condition at any given time for each year of the plan.

Move McAllen: A Short-Range Transit Plan for Metro McAllen

Move McAllen, a Short-Range Transit Plan for Metro McAllen, which was adopted in 2019, is a three-phased, five-year study. The plan aims to improve ridership, productivity, and on-time performance of the transit service by assessing the strengths and weaknesses of the existing system, identifying opportunities to improve service for exiting riders, attracting new riders, and ensuring the best use of public funds.

Brownsville Transit Plan

Adopted in 2017, the Brownsville Public Transit Plan was comprised of an assessment of existing conditions in the Brownsville area, a transit market analysis, the identification of service issues and opportunities, the development of service scenarios, and final service recommendations. The final recommendations included a mixture of elements from the service scenarios developed, which incorporated immediate, short, and long-term implementation strategies. The proposed service changes resulted in a 0.14% increase in annual revenue service, which ultimately resulted in a cost-neutral upgrade to the past services. Detailed route alignments and service schedules were produced as a result of this plan for all routes and ADA paratransit services.

LRGV Regional Public Transportation Coordination Plan

The *Lower Rio Grande Valley Regional Public Transportation Coordination Plan* was adopted in January 2017 with the purpose of meeting the Moving Ahead for Progress in the 21st Century Act (MAP-21) requirements for the FTA's Section 5310 Program. The Section 5310 Program's purpose is to enhance mobility for seniors and persons with disabilities. The overarching goal of the Regional Public Transportation Coordination Plan is to "help provide for more trips for more people while providing cost effective high quality and safe transportation for our community."

The plan provides an identification and analysis of existing transportation resources, an analysis of needs, a gap analysis, and a set of transportation strategies and pilot programs to meet goals and implement the plan. These strategies include coordination strategies, service strategies, and financial strategies focusing on coordination between FTA funded service and health and human services transportation (medical transport, etc.).

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RGVMPO Transit Development Plan - Currently Being Drafted

As a major component of the RGVMPO 2045 MTP, the newly formed RGVMPO is working collaboratively with regional transit providers to develop a Transit Development Plan (TDP). This plan, being developed concurrently with the 2045 MTP, will help tell the regional transit story of the Rio Grande Valley community. The development and delivery of tools and strategies will empower the MPO and the regional transit providers to evaluate, coordinate, and deliver transit on behalf of the community. The TDP will provide the following key components:

- Operational Analysis
- Market Analysis
- Origins and Destinations/Ridership Analysis
- Regional Service Standards
- Route and Service Recommendations
- Implementation Plan

Active Transportation Planning Efforts

The following represent a sampling of active transportation planning efforts at the regional and local level in the Rio Grande Valley.

The Active Plan

The *Lower Rio Grande Valley Active Transportation and Tourism Plan* was adopted in September of 2016. The goal of the plan is to help create "one of the finest and most extensive region-wide non-motorized transportation networks anywhere in the United States" by providing facilities and infrastructure for active transportation, and active tourism more specifically, which will create benefits for transportation, health, and the economy. The plan proposes a network of various active transportation and recreational facilities, some of which include multi-use trails and bike facilities and provides design considerations and potential facility costs. The plan also proposes a set of catalyst projects, two of which fall within the HSBMPO planning area (Arroyo-Resaca Multi-Use Trail segment and Arroyo Colorado Paddling Trail segment). The Active Tourism portion of the plan explores the possibility of bicycle tourism and trail tourism as potential programs and economic markets, which would have a significant impact on the use of and need for active transportation facilities in the HSBMPO region.

Hidalgo County MPO Bicycle Plan

Adopted in 2017 by the HCMPO, the Bicycle Plan 2018 serves as a complement to the existing HCMPO Pedestrian Plan and as a core component in the overall multimodal plan for Hidalgo County. Additionally, the Bicycle Plan provides solutions to issues such as gaps within the sidewalk network, identifies safer approaches to street crossings and paths, provides environmental and health benefits, and encourages a bicycle-friendly environment.

Recommendations were developed based on analysis of existing facilities, policies, and plans as well as suggestions from the HCMPO's Bicycle and Pedestrian Advisory Committee (BPAC), Technical Advisory Committee (TAC), and through a series of public meetings and workshops.

The plan uses the 5 E's approach: engineering, education, enforcement, encouragement, and evaluation of outcomes. The plan also includes an approach to document and monitor trends through data collection

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to recognize progress and to identify achievement of plan goals and objectives. Localized data gathered in this process allows planners to better recommend courses of action designed to increase bicycling compared to more general data available at the national level. Surveys are used on a recurring basis to assess presumed preferences for driving over cycling and provide insight for ways to encourage a shift in behavior.

Hidalgo County MPO 2016 Pedestrian Plan

The 2016 Pedestrian Plan, adopted by the former HCMPO, was updated from the 2014 plan and was intended to serve as a comprehensive planning tool for the Texas Department of Transportation (TxDOT), the HCMPO, and the local jurisdictions within the former MPO's boundaries to develop a safe and comfortable pedestrian network and an increased standard for walkable communities. Coordination and collaboration with the other neighboring former MPO's like HSBMPO and Brownsville MPO was designed to improve regional connectivity on cooperative projects. Planning directly for a pedestrian network has previously been left to the cities within the HCMPO's old planning boundaries resulting in a lack of connectivity in sidewalk infrastructure between cities. The Pedestrian Plan promoted a continuous and safe pedestrian network required as part of a federally mandated comprehensive multimodal transportation plan. This cross MPO coordination has been adopted and merged into the newly formed RGVMPO's vision and efforts.

2016 Bicycle and Pedestrian Master Plan

Finalized in 2016, the HSBMPO Bicycle and Pedestrian Master Plan provided a set of recommended projects, policies, and practices meant to improve and expand the active transportation network in the old HSBMPO study area. The plan's recommendations resulted from a combination of public engagement, best practices, and an assessment of community conditions and needs. In addition, the plan includes an implementation program that defines roles and responsibilities, identifies funding options, and provides detailed information about the recommended projects.

Harlingen Trails Master Plan

Adopted in March of 2010, the Harlingen Trails Master Plan's purpose is to aid in the creation of a trails system that provides safety, accessibility, and connects people to existing destinations; represents the identity and character of the city and enhances its physical appearance; and provides opportunities to learn about the city and form public/private partnerships. The plan aims to create a trails system that provides recreational/functional mobility opportunities for active transportation modes, promotes a sense of place, and provides a safe environment; develop tools and mechanisms to implement the plan and facilitate trail development; develop and identify funding sources; and incorporate public participation into the planning and design process for new trails. The plan's recommendations identify four types of opportunities for trail development, including arroyo trails, irrigation trails, rail trails, and street trails.

Harlingen Parks and Recreation Master Plan

In conjunction with the City of Harlingen's One Vision and One Harlingen Comprehensive Plan, the city also developed a Parks and Recreation Master Plan, which was adopted in early 2016. One of the major findings to come out of this plan is the need for trails. Citizen input resulting from a needs assessment ranked "Add more trails or places to ride a bicycle" as the community's second highest concern under the

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parks and recreation umbrella. Therefore, the plan includes trails under the list of "very high" needs, noting that there are still key gaps and that the western part of the city currently has no trails.

The plan includes trail development as one of the improvement categories in its final recommendations, with an aim of "developing a citywide connected trails system based on the recommendations of the city's adopted 2010 Trails Master Plan."

San Benito Parks and Recreation Master Plan

With its most recent draft in 2015, the San Benito Parks and Recreation Master Plan acts as a supplemental piece of the San Benito Comprehensive Plan. The Parks and Recreation Master Plan's purpose is to "provide thoughtful guidance and sound direction to the city in its commitment to acquire, develop, and manage an adequate and easily accessible system of parks and recreation facilities and programs to serve the residents of San Benito." One of the specific goals of the plan involves building an active transportation network to improve connectivity throughout the community. Under this goal, the plan provides a set of actionable objectives as recommendations for achieving the goal. These actionable objectives include items such as taking steps to create more focused and detailed plans/designs, identifying and obtaining funding, coordinating with relevant entities, and obtaining the necessary rights-of-way or easements to use in the creation of the network.

San Benito Downtown Revitalization Plan

Adopted in August of 2016, the *San Benito Downtown Revitalization Plan* is a supplement to the San Benito Comprehensive Plan. Though transportation is not the primary focus of this plan, there are concerns, opportunities, and recommendations discussed that are related to transportation. Traffic is listed as both a major opportunity and concern for the downtown area. Some of the recommendations in the plan include steps such as enhancing connectivity to downtown, in particular for active transportation modes and the trail network, improving the traffic environment through traffic calming strategies, reconfiguring certain roadway sections, and implementing Complete Streets.

Brownsville Parks & Recreation Open Space Master Plan, 2008

This plan takes an inventory of the existing parks and open space in Brownsville, while creating an implementation plan to connect the existing infrastructure to the current and anticipated needs of community by improving the quality of the resources available with a planning horizon of 2008-2022. Procedures within this plan follow guidelines set forth by the Texas Parks and Wildlife Department (TPWD) to ensure the city continues to maintain eligibility for funding future parks projects.

Priorities identified through community engagement included:

- Provide more efficient maintenance and security
- Provide more recreational amenities and facilities
- Include educational/interactive opportunities with natural areas
- Expand the existing park system through acquisition of more open space/natural areas

The plan's goals also focus on improving existing parks and open space, while identifying potential areas for acquisition that would play a major role in improving connectivity between open spaces and enhance the quality of life of Brownsville residents.

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Connecting Brownsville, The 2013 Bicycle and Trail Master Plan

The City of Brownsville took a progressive approach in 2013 to meet the evolving transportation needs of their fast-growing population. To increase resident's quality of life and number of transportation choices, the City created *Connecting Brownsville* which builds on the previous efforts set forth in the *Parks & Recreation Open Space Master Plan*. This plan emphasizes five major goals to accomplish its overarching mission:

- Create an interconnected network
- Form partnerships throughout the community that will help facilitate this mission
- Invest, when feasible, in comfortable infrastructure that separates non-vehicular and vehicular traffic
- Ensure ease of accessibility to infrastructure
- Encourage short trips to connect longer trips (i.e. bike to a bus stop)
- Provide a variety of facility types

Recommendations were developed based on analysis of existing facilities, policies, and plans as well as suggestions from the public participation process. The public participation process was conducted through a series of public meetings, workshops, surveys, and conversations at local events. Recommendations were also separated into four different phases based on timeline of implementation (rapid implementation, near-term, mid-term, and long-term).

South Padre Island, Parks & Open Space Master Plan, 2013

The *Parks & Open Space Master Plan*, adopted in 2013, takes an inventory of existing parks, open space, and recreational facilities, while identifying opportunities to improve those existing spaces or acquire new lands to be converted to parks, open spaces, or recreational facilities. Public participation was used to highlight and support the existing facilities analysis, giving the community a voice to help identify and set priorities within the scope of the plan. Additionally, this plan holds strong connections to the tourism sector of South Padre Island's economy, ensuring that all parks and open spaces will continue or build upon the support of tourist activities. Through the planning process, the Parks & Open Space Master Plan identified three major goals:

- Protect and improve the existing system of parks and open space.
- Enhance tourism by networking local resources and system of parks and open space.
- Provide healthy environments to residents.

RGVMPO Active Transportation Plan - Currently Being Drafted

In coordination with the RGVMPO 2045 MTP update, the RGVMPO Active Transportation Plan includes a holistic examination of the MAB to assess where current facilities for walking and biking exist, while also conducting an analysis to examine where demand for walking and biking is most prominent. Gap areas where demand is not adequately served by either walking or biking facilities are identified, and projects are recommended to serve those high demand areas. In addition, an important component of this plan is creating a unified approach to improvements to the active transportation network. To help support the design of new infrastructure for walking and biking, guidelines were developed based on national best practice to support MPO staff and partners. A policy review at the state, MPO, county, and municipal level shows where policies and programs supporting active transportation do, and do not occur, along with an

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action plan of approaches to build support and implement such policies and programs. The collection of these analyses and recommendations provide a unified path forward to benefit those who use or will use the active transportation network throughout the Rio Grande Valley.

Economic and Cultural Development Planning Efforts

Cameron County Regional Mobility Authority Annual Report 2017

The Cameron County Regional Mobility Authority (CCRMA) releases this report annually to identify progress made towards objectives and key transportation projects in the county. This report also lists out the financial information related to these projects, such as the traffic counts and toll revenue. The latest annual report summarized efforts in 2017, some of the highlighted transportation projects include:

- State Highway (SH) 550
    - A stretch already signed as Interstate 169 (I-169)
- The first toll road opened in the Rio Grande Valley (RGV) and South Texas
- The West Railroad Relocation Project
    - The first International Railroad crossing into Mexico in over 100 years

Cameron County Regional Mobility Authority Strategic Plan 2017-2021

The CCRMA Strategic Plan outlines eight different goals for CCRMA to tackle over the five-year period of 2017 to 2021, which directly focus on meeting the transportation needs of Cameron County as the population continues to grow. The plan then identifies strategies and transportation projects that correspond with the eight goals, as well as key partnerships that will make these goals feasible. "The ultimate goal of the CCRMA is to make significant contributions to a high quality of life by providing our residents and visitors with effective, accelerated mobility to encourage economic growth in South Texas from borders to beaches, at a minimal cost to the taxpayers."

Downtown in Action, Main Street Brownsville, 2017

In 2017, the Main Street Brownsville Program published *Downtown in Action*, a plan to revitalize and preserve downtown Brownsville while utilizing a four-point approach. Through revitalization, the program aims to make downtown Brownsville a "vibrant, prosperous business district offering premier leisure, retail, cultural, and entertainment experiences."

The four-point approach focuses on the following areas: Organization, Promotion, Design, and Economic Vitality. Ten (10) goals were then identified, and strategies were detailed and separated into the four focus areas.

Mitte Cultural District Master Plan, 2015

The Brownsville Historical Association, along with several other local partners, came together to create the *Mitte Cultural District Master Plan*, which was adopted in April of 2015. This plan incorporates five different sections, which are composed of a peer comparison of other cultural districts, the stakeholder engagement process, identification of design and development opportunities immediate, mid- and long-range), and additional information consisting of community engagement results and further analysis. Immediate actions include developments that create a structure to facilitate more long-term developments, such as creating revenue streams through priced parking and the creation of a City Pass

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(allowing residents to buy a single pass to gain entrance to all facilities), while also hiring a district director to maintain oversight of the program. The more long-term developments include actions that would require more effort such as building a large performance plaza, museum, and unified sidewalk branding and system.

Revitalizing Downtown Brownsville, 2013

Revitalizing Downtown Brownsville is a culmination of policies and programs that seek to reinvent the way downtown Brownsville will look and operate. The program was released in November of 2013, forming an action plan for reactivating downtown Brownsville. These policies include: Place-Based Planning, Complete Streets, Traffic-Calming, Improving Parking Efficiency, "Town-Gown" Connection, Re-Envision the Alleys, and Envision It. Together these policies will create a more active lifestyle for the city of Brownsville, while improving connectivity and making downtown Brownsville a focal point of the city.

RGV2020

RGV2020 is a regional economic plan being developed by Lower Rio Grande Valley Development Council (LRGVDC) using the Comprehensive Economic Development Strategy (CEDS) method, which launched in 2017 and is expected to be implemented in 2020. This effort includes a comprehensive assessment of the region's current needs using a SWOT analysis (strengths, weaknesses, opportunities, and threats) combined with community engagement to help determine the region's priorities. Based on the determined priorities, the plan sets the framework to prioritize investments in the following areas of concern:

- Education & Workforce
- RGV Destinations, Geographic Assets & Quality of Life Factors
- Urban & Rural Entrepreneurship
- Industry, Growth, Diversity & Resilience
- Transportation, Technology & Infrastructure
- Foreign Trade & International Competitiveness
- Operations and Management Planning Efforts

Texas Statewide Documents

The following documents were authored by state agencies and contain statewide applications for the state of Texas, which in turn applies to the entire Rio Grande Valley Region.

Freight Mobility Plan

The 2018 Texas Freight Mobility Plan gives a blueprint for increasing economic growth in Texas through a plan for addressing freight and transportation needs in all parts of the state. The plan took a comprehensive approach building on the 2017 Mobility plan and used an outreach process with the Texas Freight Advisory Committee along with stakeholder workshops and webinars with MPOs. The plan concludes with an implementation strategy for meeting TxDOT freight transportation needs, along with a list of projects and considerations regarding funding and performance measures.

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The Texas Rural Transportation Plan

Adopted by the Texas Transportation Commission in 2012, the *Texas Rural Transportation Plan* is the rural component of the Statewide Long-Range Transportation Plan (SLRTP) 2035. This plan brings forth the priorities of the rural transportation stakeholders within the state, which adds their concerns to the overall priority list for transportation projects and improvements. This expands on the effort to create coordination between transportation stakeholders within the state to create one unified mission of improving Texas' multimodal transportation system by giving weight to rural interests.

Statewide Long-Range Transportation Plan 2050

The Texas Transportation Commission adopted the Texas Transportation Plan (TTP) 2050 in 2020 to serve as TxDOT's performance-based long-range transportation plan (LRTP). This plan is the culmination of coordination between planning partners and transportation agencies throughout Texas to guide and improve the development, management, and operation of the multimodal transportation system on a statewide basis over the next 25 years. This plan also sets performance goals, measures, and targets for the following items:

- Promote Safety
    - Utilize the 5 "E's" of Evaluation, Engineering, Encouragement, Education, and Enforcement to support a safety culture that decreases the number of crashes and fatalities.
        - 2030: 2,280 Fatalities & 0.70 Fatality Rate
        - 2050: 0 Fatalities & 0 Fatality Rate
- Preserve Assets
    - Keep Texas' infrastructure in good repair by providing cost efficient preventative maintenance.
        - 90% Good or Better Pavement Lane-miles by 2030, maintain through 2050
        - Statewide Bridge Condition Score of 90 by 2030, maintain through 2050
- Optimize System Performance
    - Manage an integrated transportation system that offers reliable travel, accessible mobility, and encourages economic growth.
        - Decrease Urban Congestion Index to 1.2 by 2030, to 1.15 by 2050
        - Decrease Rural Reliability Index to 1.12 by 2030, maintain through 2050
- Deliver the Right Projects
    - Effectively use state resources to help deliver the right projects on time and within budget
- Foster Stewardship
    - Environmental considerations should be included in all TxDOT activities to ensure future generations of Texans can benefits from the state's natural, historic, and cultural resources.
- Focus on the Customer
    - TxDOT's decision should be transparent to the public and stakeholders, while feedback from the public is being actively heard.

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2020 Unified Transportation Program (UTP)

The 2020 Unified Transportation Program (UTP) identifies planned investments totaling $77 billion in infrastructure improvements over the next 10 years that address TxDOT's strategic goals in the areas of safety, preservation, congestion relief, and connectivity.

The UTP is a mid-range transportation plan that links statewide LRTPs, regional MTPs, and rural transportation plans to the STIP and other short-term investment programs. Specifically, the UTP lists projects and programs planned for construction and/or development within the first 10 years of the 24-year SLRTP. Project development includes activities such as preliminary engineering work, environmental analysis, and right-of-way acquisition and design. It is a critical tool in guiding transportation project development within the long-term planning context. In addition, it serves as a communication tool for stakeholders and the public in understanding the project development commitments TxDOT is making.

2019-2022 Statewide Transportation Improvement Program

The Statewide Transportation Improvement Program (STIP) is the programming document for prioritizing and scheduling projects. The STIP contains programmed dollars for all projects for all programs including roadway, transit, and active transportation and is based on a set of needs set out in the Statewide LRTP. The STIP is revised as needed on a quarterly basis to maintain communication and transparency on the programmed components involved in delivering State and Federally funded projects. The STIP is accompanied by a System Performance report that details the performance measures and targets in support of the goals set in the TTP 2050.

Texas Strategic Highway Safety Plan 2017-2022

The 2020 update to the Texas Strategic Highway Safety Plan (SHSP) acknowledged a steady improvement in roadway safety performance since the implementation of the 2017 SHSP. The SHSP maintains a vision of moving to zero deaths on roadways, and represents a multidiscipline collaboration aspiring to make Texas travel safer by reducing crashes, fatalities, and injuries by focusing on seven key emphasis areas, being distracted driving, impaired driving, intersection safety, older road users, pedestrian safety, roadway and lane departures, and speeding.

This targeted, data driven approach to addressing roadway safety exemplifies TxDOT and partner agencies dedicated implementation of the directives set in the Highway Safety Improvement Program (HSIP). Additionally, statewide efforts are reviewed to create a uniform effort that connects and aligns goals from different planning partners throughout the state.

Texas Transportation Asset Management Plan, 2019

The Federal Highway Administration (FHWA) requires all states to develop a *Transportation Asset Management Plan (TAMP)*. The TAMP is a statewide document that sets forth standards and performance targets for managing and maintaining both the state's bridge and pavement systems. The state of Texas is required to meet the following requirements in accordance with the MAP-21 Act and Fixing America's Surface Transportation Act (FAST Act):

- Description of National Highway System (NHS) pavement and bridge assets inventory
- Statement of the asset management objectives and performance measures
- Performance gap identification
- Life cycle planning (LCP)

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- Risk management analysis
- Financial plan for a minimum of 10 years
- Investment strategies

TxDOT Transit Asset Management Group Sponsored Plan

Transit Asset Management (TAM) planning follows a similar principle of asset management as the TAMP process detailed above but deals with assets used in the provision of public transportation rather than with pavement and bridge conditions. TxDOT sponsored a group Transit Asset Management Plan building on the standards and performance measures set forth by FTA, which then fall upon the local transit agencies throughout Texas to use during the adoption of their agency specific TAM Plans. The latest Texas TAM Plan was adopted in 2019, its planning process resulted in the following seven (7) priorities: 1) Deliver the right projects, 2) Focus on the customer, 3) Foster Stewardship, 4) Optimize system performance, 5) Preserve our assets, 6) Promote safety, and 7) Value our employees.

International Trade Corridor Plan, 2018

The International Trade Corridor Plan is a biannual report conducted by TxDOT as required by the Texas Transportation Code which aims to:

- Include strategies and projects to aid the exchange of international trade using the Texas multimodal transportation system;
- Assign priorities based on amount of international trade; and
- Address implementation of the recommendations of the Border Trade Advisory Committee.

The plan highlights information on global trade in Texas (i.e. major commodities and trading partners), the state's infrastructure facilitating trade, planned investments in relevant infrastructure, and non-highway investments that affect trade. The plan also details infrastructure improvement activity at various locations such as the Pharr-Reynosa International Bridge.

Border District Trade Transportation Report, 2019

This report describes border trade activity for TxDOT's three border districts – El Paso, Laredo, and Pharr and uses that information to identify transportation needs and develop strategies and investments that support safe and efficient movement of United States (US) and Texas trade with Mexico. The report provides figures for under construction or completed project cost and type, highlighting areas of need for future analysis.

Truck Parking Study: Overview and Draft Recommendations

This study provides an overview of the findings from the Statewide Truck Parking Study for all TxDOT Districts. The study highlights the results of inventory and utilization analysis and discusses the draft findings for preliminary recommendations.

PRELIMINARY GOALS AND OBJECTIVES

The tenets, goals, objectives, and related performance measures from the aforementioned plans were compiled and reviewed alongside the federally proscribed goals, objectives, and performance measures in order to develop the preliminary goals for this MTP update. These goals and objectives were then used as a starting point for the regional visioning process carried out during public involvement.

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The preliminary RGVMPO 2045 MTP Goal Areas (Values) and objectives represented in Table 2-2 are a synthesis of previous planning efforts, current scoring criteria, and national performance goals. These proposed goals were crafted to help create a unified regional perspective on long-range transportation planning and inform the project scoring and public involvement processes.

Table 2-2: RGVMPO 2045 MTP Preliminary Visioning Goals

RGVMPO 2045 MTP Goal Areas	RGVMPO 2045 MTP Goal objectives	National Goal/ Process
Regional Planning	Conduct a planning process that builds a sense of regional identity and community by being inclusive of all geographic areas and sensitive to needs of communities across the region while promoting the theme of regional collaboration	3C Metropolitan Planning Process
Safety	Develop and invest in projects that promote and improve system safety	Safety
Security	Develop and invest in projects that promote and improve system security	
Asset Management	Maintain transportation asset systems in states of good repair (all modes – roadway, bridge, sidewalk, bicycle facilities, transit facilities, vehicles and equipment) to support system safety, resilience, and reliability	Infrastructure Condition & Transit Asset Management
Efficient System	Reduce congestion and improve travel time reliability.	Congestion Reduction
	Investment in improved/innovative technology	
Sustainable System	Design and implement a system that is resilient in the face of natural disasters and weather events (able to survive or recover from extreme events)	
Connectivity (people & freight)	Improve connectivity of transportation system	System Resilience and Reliability
	Fill in gaps in current roadway network and improve first mile/last mile connectivity (people & freight)	
Mobility and Accessibility (all modes – people & freight)	Provide access to and invest in transit	
	Provide adequate and accessible truck safety rest areas with enough parking and amenities	
	Provide access to and invest in bicycle facilities	
	Provide access to and invest in recreational trails	
	Provide access to an invest in sidewalks and ADA accessibility	
	Implement and combine multimodal context sensitive solutions where appropriate (Complete Streets)	
Economic growth	Provide multimodal access to medical facilities, employment, shopping, and recreation	Freight Movement and Economic Vitality
	Improve freight movement	
Environment	Improve or preserve the environment to ensure community resilience and sustainability	Environmental Sustainability

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RGVMPO 2045 MTP Goal Areas	RGVMPO 2045 MTP Goal objectives	National Goal/ Process
	Design and implement a context sensitive system that minimizes impact to neighborhoods, cultural resources, and historic sites.	
	Design and implement a transportation system that benefits all members of the community in a fair and equitable manner and conduct a planning process that is transparent and considers the needs and input of all segments of the community	Environmental Justice / Social Equity
Fiscal Responsibility in Improvements	Invest in feasible and regionally significant projects	Reduced Project Delivery Delays
Goals that Align with the Public Values	Leverage public outreach to refine goals and inform project prioritization process	Public Involvement

REGIONAL VISIONING PROCESS

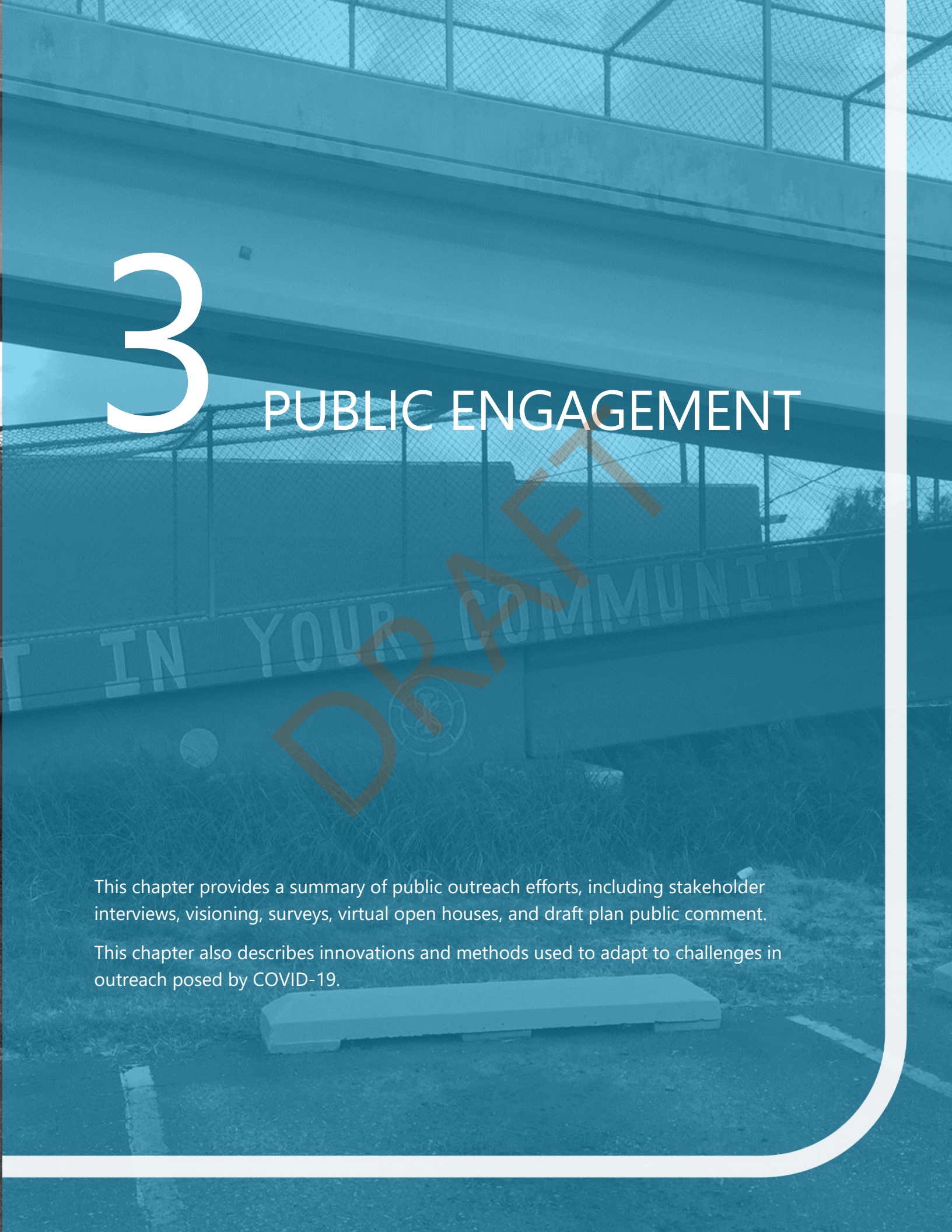
Though the planning process used for the creation of the RGVMPO 2045 MTP is prescribed by state and federal regulations, the vision is developed locally. This plan focuses on forging a new regional vision by combining the knowledge and wisdom of the previous MPOs and local community, while following the state and federal guidelines that direct the general planning process.

The vision is achieved not only through a review of locally generated plans and information described in the previous section, but extensive public input and collaboration of regional stakeholders including local, state, and federal agencies and governing bodies, public and private transportation providers, and the business community.

Input from the public and from these stakeholders is integrated into the metropolitan planning process so that the community's visions and goals coalesce into defined principles that help guide transportation policy and investment decisions within the RGVMAB. The resulting recommendations and proposed improvements impact all users of the transportation system.

The specific ways in which the research and planning review conducted in this chapter were used in the public involvement and regional visioning process and the community vision developed from that effort is described in Chapter 3 Public Involvement.

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3 PUBLIC ENGAGEMENT

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This chapter provides a summary of public outreach efforts, including stakeholder interviews, visioning, surveys, virtual open houses, and draft plan public comment.

This chapter also describes innovations and methods used to adapt to challenges in outreach posed by COVID-19.

The backbone of every well-developed MTP is public engagement. Involving early input from the public, helps ensure that planners and decision makers better understand the community's transportation needs and goals. This public input process enables decisionmakers to be more readily equipped to maintain community dialogue and address needs and goals with more effective impact.

Methods may vary by region, but the collaborative process of public involvement remains an integral part of creating a well-rounded transportation plan. To maximize public input, public participation plans were implemented early in the development of the RGVMPO 2045 MTP.

A variety of engagement strategies were used in accordance with and in addition to the federally required Public Participation Plan (PPP), including online visioning exercises, surveys, stakeholder meetings, and virtual open houses. The following sections in this chapter outline the legal requirements for a PPP and the different methods used to engage the RGVMAB community.

LEGAL REQUIREMENTS FOR PUBLIC PARTICIPATION

In addition to the federal guidelines discussed in Chapter 2, MPOs are required to provide "reasonable opportunity" for the public to comment on the MTP, TIP, and any major plan revisions, according to the FAST-Act, and 23 CFR 450.316.

The public includes "citizens, affected public agencies, representatives of public transportation employees, freight shippers, providers of freight transportation services, private providers of transportation, representatives of users of public transportation, representatives of users of pedestrian walkways and bicycle transportation facilities, representatives of the disabled, and other interested parties." [1201(i)(6)(A)] The RGVMPO is also required to consult with state and local agencies and coordinate the transportation plan with other existing plans.

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Public Participation Process

As required by the FAST-Act and 23 CFR 450.316, the RGVMPO followed the guidelines below to create the RGVMPO 2045 MTP:

- Develop a **documented PPP** that defines the process for all affected individuals and stakeholders. The RGVMPO PPP was adopted on August 7, 2019.
- **Consult** with all interested parties to develop the PPP.
- Provide reasonable **public access**. All technical and policy information used in development of the MTP, TIP, and other appropriate transportation plans and projects should be provided in electronic-accessible formats. Open house meetings should be conducted at convenient and accessible locations and times.
- Leave time for **public comment**. The public should have ample time to respond to the PPP before it is adopted; at a minimum, the comment period should be 45 days. Comment periods before the adoption of MTPs, TDPs, 5307 Program of Projects, and other appropriate transportation plans or projects should be no less than 30 days.
- **Notify** the public of participation opportunities. Notice of the public comment period should be advertised in the newspaper and sent via mail to the entire RGVMPO mailing list *before* the start of the 45-day comment period.
- **Respond in writing** (when applicable) to public input, specifically in response to substantial comments made during public engagement. Summary, analysis, and report of disposition of comments shall be made as part of the final document.

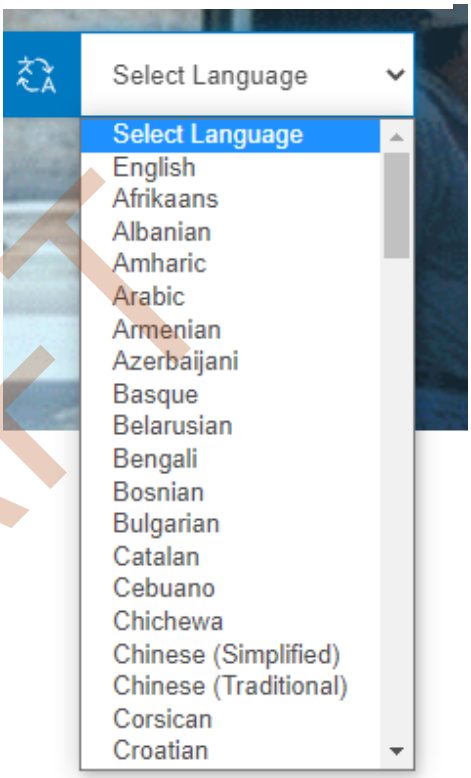
- **Seek out** and consider those traditionally underserved by existing transportation systems, such as minorities, older adults, disabled individuals, and low-income households.
- **Coordinate** the PPP with statewide transportation planning public involvement and consultation processes wherever possible.

Limited English Proficiency Plan

Under Title VI of the Civil Rights Act of 1964, the MPO planning process and tasks shall not be discriminatory of race, color, or national origin. Residents are also entitled to language assistance in compliance with Executive Order 13166 ("Improving Access to Service for Persons with Limited English Proficiency"). These requirements apply to all federal agencies, and those receiving funds from federal agencies. The following are techniques the RGVMPO has employed to ensure individuals with Limited English Proficiency (LEP) are able to participate in the public involvement process:

- Use of non-technical language to describe plans and proposed changes
- Visualization techniques to display data and proposed transportation plans
- Connecting with community leaders and organizations who can help the MPO reach more LEP residents
- Translation into different languages available (see Figure 3-1)

Figure 3-1: Desktop Translation Screenshot



PPP Evaluation

Continuous evaluation of public involvement strategies is required by the FHWA and TxDOT. Some of the key performance indicators include evaluating the extent to which the PPP:

- Provides direction for public involvement activities
- Includes descriptions of roles and responsibilities of the MPO and other agencies in the public involvement process
- Lists techniques that are or could be used by the MPO to encourage the public to engage in the planning process

A general evaluation guide for PPP key performance indicators can be found in the public involvement technical memorandum.

PUBLIC OUTREACH EFFORTS

The RGVMPO conducted multiple public and stakeholder outreach efforts to better understand the community's transportation challenges, needs, and opportunities. The participants' responses provided insight into their vision for the future of the transportation system and their goals for the RGVMAB in

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2045. This section describes all public engagement strategies used for the RGVMPO 2045 MTP update, including an online visioning exercise, public surveys, stakeholder meetings, and virtual open houses.

Online Visioning Tool

The main objective of the online visioning process for the RGVMPO 2045 MTP was to solicit input from the public regarding their priorities for the future RGVMAB transportation system. Due to unforeseen circumstances caused by the COVID-19 pandemic, the entirety of the visioning process was conducted online. Community members were notified of the survey primarily through social media posts, outreach to stakeholders, and posts on the RGVMPO website. A social media post is presented in Figure 3-2.

Figure 3-2: Online Visioning Facebook Post



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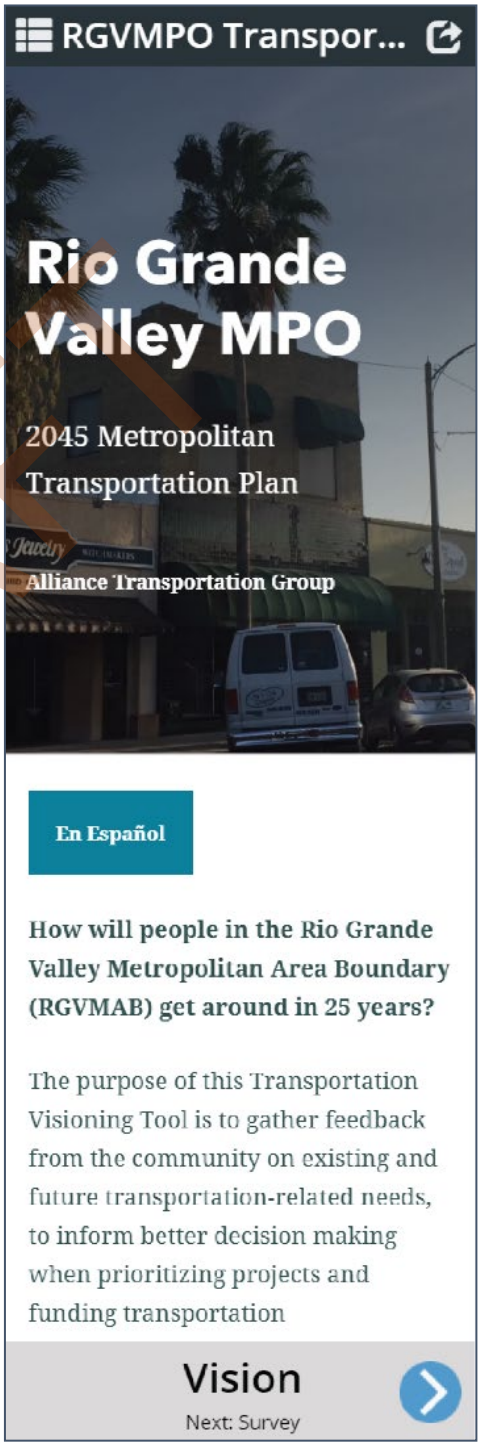
The feedback received from the online visioning tool played a role in shaping the MTP goals and objectives and provided critical insights that helped the RGVMPO prioritize the transportation improvement projects proposed for inclusion in the plan. The online tool was opened on April 1, 2020 and closed on July 20, 2020. During this time, the tool received a total of 83 survey responses and 200 comments on the interactive map.

The digital visioning process was custom-built for the development of the MTP. The tool consisted of modules that both educated the public about the plan development process and requested feedback about community values and existing conditions in the region.

Accessibility for the online visioning tool was prioritized throughout the design process, starting with responsive web design. The mobile-friendly version of the website, as shown in Figure 3-3, allowed users who only had access to a mobile device to participate in the online visioning process. Access for LEP residents was also taken into consideration. The mobile site can be accessed in English or Spanish, and the desktop site can be accessed in English, Spanish, and translated into several other languages using an imbedded translation engine.

The structure of the tool included a survey that gathered information about participants' transportation usage and an interactive map of the region. The responses from these modules are summarized in the following section.

Figure 3-3: Online Visioning Mobile Web Design



Online Visioning Responses

The survey and interactive mapping tool solicited insightful feedback from participants, and patterns often emerged in the responses. Some of the most common comments focused on inefficiency in the transportation systems, congestion and traffic, connectivity, and safety – especially for bicyclists and pedestrians.

Most frequently, participants voiced a need for safer bike and pedestrian routes. One comment said, ***"Bikers often share the roads with distracted drivers and are putting themselves at risk. Creating safe biking and walking trails would give people the options of choosing these means of conveyance over a car."***

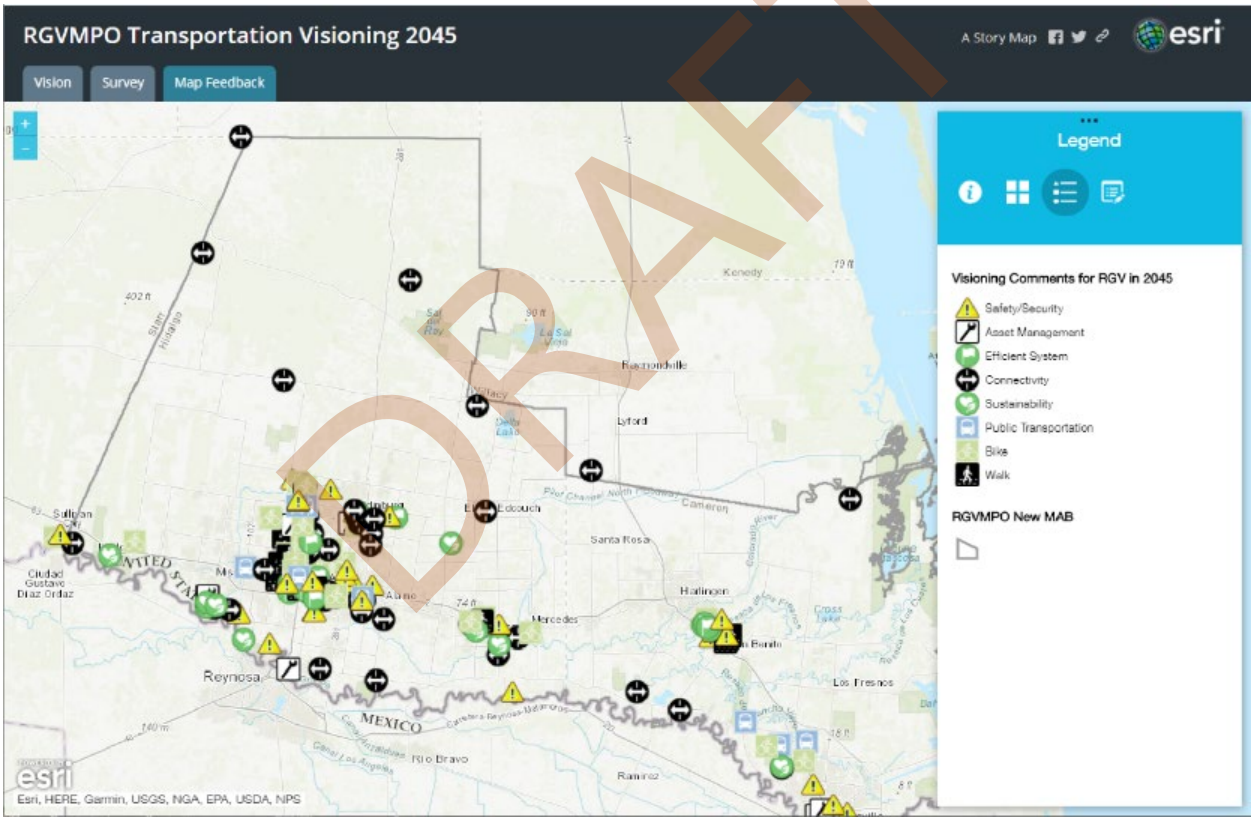
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Additionally, the heat in South Texas was mentioned, prompting the suggestion for improved bus stop amenities that provide shade, protect riders from the elements, prevent heat exhaustion, and subsequently, increase ridership.

Minimizing the delays travelers experience due to congested roadways and improving travel time reliability was also a common theme in both the survey and the interactive mapping tool. One respondent summed up the topic, accordingly, referring to transit: "We need something to help us go to other cities quicker." Additionally, some mentioned the information about bus routes and schedules was hard to find, creating another obstacle to using public transit.

System connectivity was the third-highest priority on the survey and the most common category for responses received on the interactive mapping tool. Fragmented transit and active transportation routes in the RGVMAB were a repeated complaint, and many participants expressed a desire for a regional transit connection that travels the length of the RGVMAB.

Figure 3-4: Screenshot of Feedback Map Module



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Stakeholder Interviews

The RGVMPO conducted interviews with stakeholders from a diverse and wide-ranging set of communities across the RGVMAB. The stakeholder groups included environmental groups, transit providers, municipal and county governments, educational institutions, freight industry leaders, port authorities, law enforcement and emergency services, bicycle and pedestrian advocacy organizations, and community interest groups. The purpose of the interviews was to listen and record any regional transportation issues or opportunities that stakeholders identified for the next 25 years. Like the Online Visioning Process, stakeholder interviews were conducted online via Microsoft Teams due to concerns amid the COVID-19 pandemic. Staff recorded notes during the meetings and summarized a comprehensive list of topics discussed. The feedback from stakeholders has been summarized by topic in Table 3-1 below and by general comments by group in Table 3-2.

Table 3-1: Summary of Stakeholder Comments

Topic	Stakeholder Comments
Safety	*Lacking bike/ pedestrian infrastructure causes people to travel in unsafe conditions*
	More education for drivers on how to share the road is needed
Efficient System	*Congestion can cause delays for EMS workers during emergencies*
	Evening and weekend transit service is needed
	An outer loop could help with freight traffic
Connectivity	*Improve bike/ped regional connections, especially to eco-tourism sites*
	Desire better transit connections: connecting college campuses has been good
	Connect rural areas to transit
Environmental Stewardship	*Flooding is a big issue; it can cause vehicular crashes and oil runoff that is bad for the environment. Desire for better drainage on roadways*
Asset Management	*Roads should be better maintained*
	Leveled railroad crossings and even sidewalks will allow for more active transportation
	Desire for faster completion of construction projects
Inclusive Transportation System	*Poor sidewalk infrastructure is an ADA accessibility concern*
	Transit dependent population needs better access to transit to prevent isolation
Economic Growth	*Truck traffic should be isolated; trucks divert into city streets to save time and cause inappropriate noise and heavy traffic for residential areas*
	Desire for more ports of entry at the U.S.-Mexico Border to encourage more commercial traffic

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Table 3-2: Summary of Stakeholder Comments by Group

Stakeholder Group	Summary of Comments
Freight and Port	*Congestion common during peak travel times, outer loops could help* *More relief routes should be identified* *Freight traffic has been increasing, and will continue to increase* *Bike and pedestrian trails are being used more often* *AV transportation should be highlighted in MTP* *Truck parking can be a challenge and cause visibility issues*
Valley Tourism Professionals	*RGV has drastically imporved hike and bike trails, but better connectivity still needed* *Need better maps of hike and bike trails for tourists* *Consider transit for eco tourism areas* *Flooding is an issue in several areas* *Information about transit should be easier to find*
Community Group Professionals	*Information about transit should be easier to find* *Transit is vital to quality of life, especially because most families have one vehicle and often live very remote* *Lack of sidewalks and ADA infrastructure*
EMS and Law Enforcement	*Flooding is an issue; it has caused vehicular crashes on expressways* *Bus stops need better amenities* *More bike and pedestrian infrastructure needed* *Sidewalks need improvement*
Medical	*Traffic is a problem, especially at interchange* *Small accidents can cause a large delay, and minutes are very important in the case of an emergency* *Additional lane on major highways for emergency vehicles* *Better signage for hospital needed*
Bike and Pedestrian Advisory Committee	*More driver education about sharing the road with bikes and pedestrians* *Chip seal roads are rough and difficult to ride bikes on* *Biking is becoming more common and people are using existing trail networks* *There is a need for better signage / wayfinding information, especially for those with a language barrier* *Better connectivity needed*
City Stakeholders	*Freight traffic has steadily been increasing* *Desire to extend public transit service hours and add Sunday service* *Improve hike and bike systems with safer crossings and grade separations when possible* *Drainage systems are not diesgned to accommodate runoff, flooding is common* *Cyclists are active in civic meetings and provide insightful feedback*
EDC and Chamber of Commerce	*Congestion is an issue during peak hours* *Desire for outer loop to decrease traffic* *Freight traffic has been steadily increasing* *Lack of sidewalks and bike lane has become apparent as more people are using active transportation* *Would like consideration of AV solutions for the future*

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Stakeholder Group	Summary of Comments
Education	*Connection between campuses has been successful* *Expansion in modes could be beneficial* *Fiscal constraints are a challenge to creating efficient routes* *Education needed about the benefits of transit* *Lack of bike / ped infrastructure is a safety hazard* *Campus is projected to grow, and transit is free to students*
Environmental	*Flooding is an issue in Brownsville* *Active transportation between green spaces is needed (often close in proximity but not in access)* *Connectivity is needed on major roadways where the road acts as a barrier* *Leverage funding to increase nature education and wayfinding for ecotourism in Cameron County* *Consider equity in terms of access and connectivity to nature*

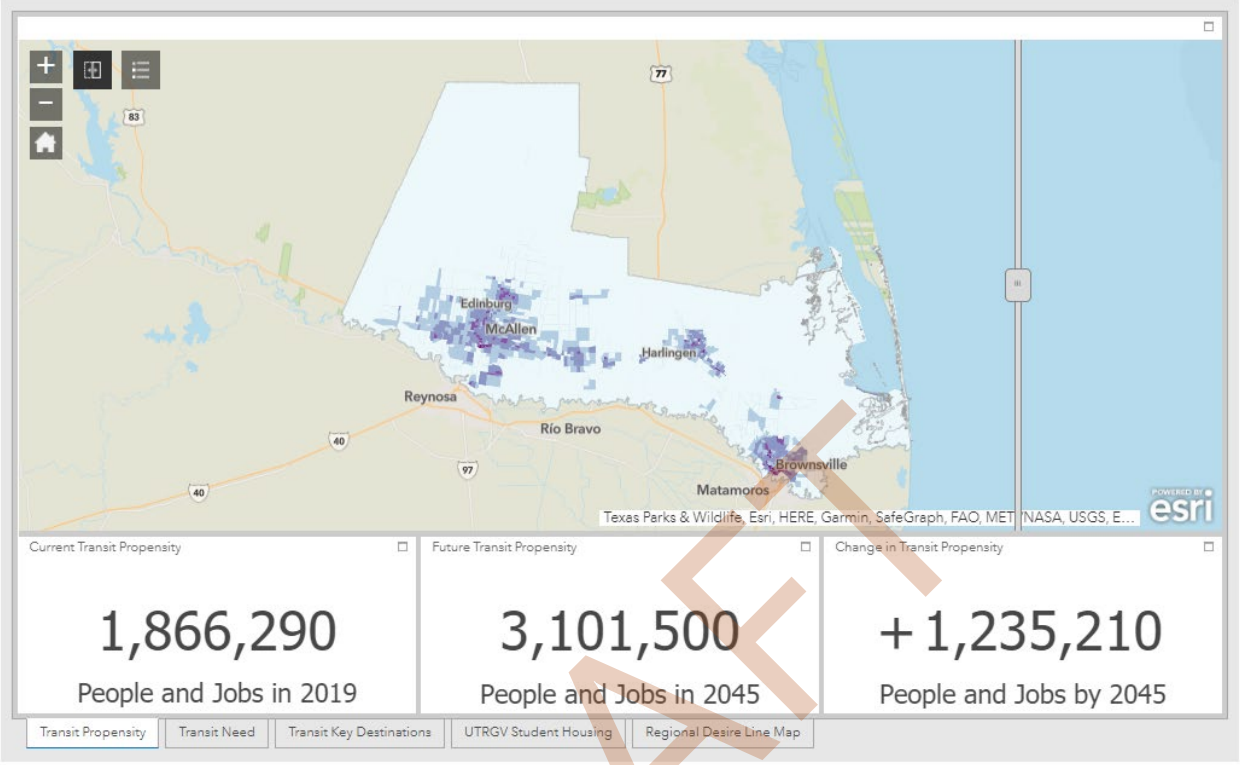
Draft Plan Review and Adoption

A virtual open house was held on November 4, 2020 to December 4, 2020 with the purpose of presenting the analysis work completed in the development of the plan as well as the 30-day public comment period for the RGVMPO 2045 MTP document, in accordance with federal PPP guidelines.

Similar to the visioning process, all open house activities were conducted virtually due to COVID-19 pandemic limitations. A custom-built website was created to display the open house information and solicit public feedback. The RGVMPO publicized the virtual open houses via social media posts and information on their website, ensuring the public was notified of the comment periods, and a mobile-friendly version of the open house site was available for people without access to desktop computers.

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Figure 3-5: Interactive Transit Propensity Map



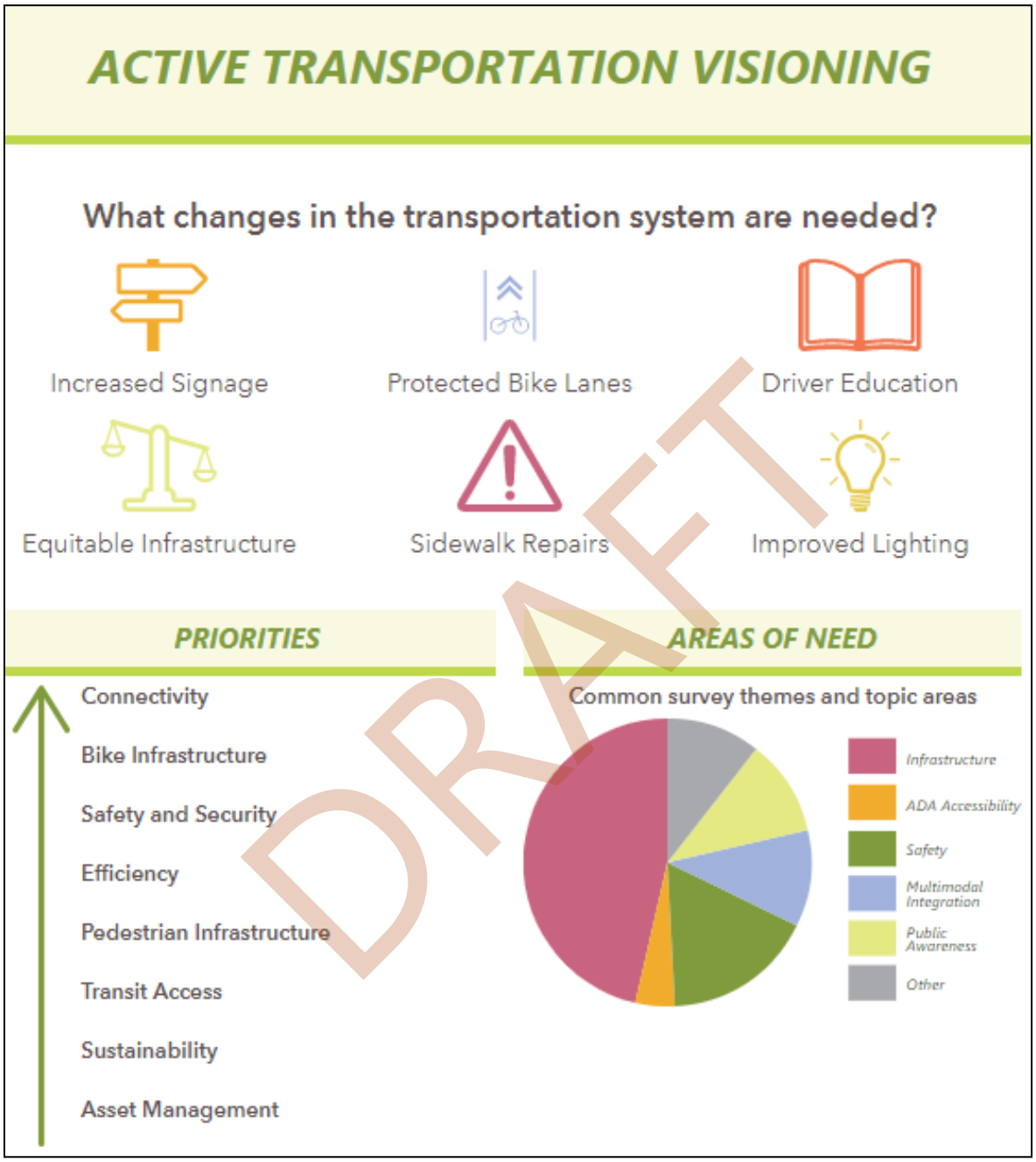
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The website provided residents with an overview of the draft RGVMPO 2045 MTP, including the proposed plan of fiscally constrained projects, and solicitations for feedback. The homepage of the open house website also included educational aspects about what an MTP is and why the MPO needs to develop one.

The Current Conditions Assessment discussed in the following chapter (Chapter 4) was a key aspect used to visualize findings and allow users to interact with data. For example, the Transit section included a map (shown in Figure 3-5) that allowed users to slide a vertical bar to reveal the future transit propensity in the RGVMAB based on demographic growth projections from the regional Travel Demand Model.

Users could also view the results of the online visioning process, shown in Figure 3-6, and take an additional survey. The survey received XX responses, much of the feedback echoing themes from stakeholders and the visioning process public feedback.

Figure 3-6: Screenshot of Infographics Displaying Active Transportation Visioning Results



Additionally, the project team provided a digital copy of the draft plan on the virtual open house platform. This section of the open house also allowed the public to navigate the proposed plan of fiscally constrained projects and provide feedback. Further to this, the RGVMPO uploaded a digital copy of the draft plan to the agency website to increase accessibility during public comment. Many comments were received during this period. A full summary of public comments and responses from the RGVMPO can be found in the public involvement technical memorandum.

The RGVMPO Transportation Policy Board, having reviewed the draft RGVMPO 2045 MTP, and having incorporated and considered public comments given during the public comment period, adopted the RGVMPO 2045 MTP as the MTP for the RGVMAB on December 10, 2020.

Summary

A robust public involvement and stakeholder engagement process was carried out by the RGVMPO to identify issues and understand the needs of the public, as well as those of agencies and organizations with a specific interest in the RGVMAB transportation system. Public participation has long been a federal requirement for the long-range transportation planning process. The public participation process carried out by the RGVMPO in support of the MTP not only complies with federal regulations, but also ensures the plan goes above and beyond the results of the technical analyses and incorporates information on how the public experiences and perceives the transportation system, which may not always align with the technical data. Developing a plan in close cooperation with the public and key stakeholders also helps to ensure broad community support for plan adoption and implementation.

Goals and objectives provide guidance to the RGVMPO and policy makers in selecting projects for inclusion in the RGVMPO 2045 MTP and help to link other transportation planning processes and documents produced by the MPO, like the TIP and the Unified Planning Work Program (UPWP), with the long term vision of the community. As state DOTs and MPOs across the nation transition to a performance-based planning and programming process as required under MAP- 21, it will be increasingly important to develop outcome-based goals and objectives that are closely tied to the adopted performance measures. A key principle of a performance-based planning and programming process is that each step in the planning process needs to be clearly connected to the next, starting with the initial goal setting phase.

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4 MULTIMODAL NEEDS ANALYSIS

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This chapter provides an overview of the multimodal analysis of existing and future (no-action scenario) conditions conducted as part of the data driven performance-based planning process. This type of analysis helps to identify locations where deficiencies are likely and what type of mobility strategies and investments in the transportation network could best address the current and future needs of the RGVMAB.

This chapter also details, where applicable, the baseline performance measures used to compare to performance targets.

MULTIMODAL NEEDS ANALYSIS

A robust data driven analysis of current and expected future needs is a critical component of informed decision making. This performance-based planning analysis is based on the latest available estimates and assumptions for population, land use, travel, employment, congestion, economic activity, and equity in the RGVMAB.

This process includes an analysis of the current and projected transportation demand of persons and goods in the RGVMAB over the period of the MTP using the latest available estimates and forecasts from the RGVMPO 2045 Travel Demand Model. The analysis is multimodal in nature, providing an assessment of existing transportation facilities that function as an integrated metropolitan transportation system, including:

- Major roadways,
- Public transportation facilities,
- Intercity bus facilities,
- Multimodal and intermodal facilities for both passengers and freight,
- Nonmotorized transportation facilities (e.g. pedestrian walkways and bicycle facilities),
- Intermodal connectors, and
- Existing facilities that serve important international, national, and regional transportation functions.

The multimodal needs assessment conducted for the RGVMPO 2045 MTP helps ensure that mobility strategies and investments recommended by the plan address the needs of the RGVMAB. The needs that drive project recommendations were analyzed for existing conditions (2019), and where applicable, for conditions likely to exist in 2045. To understand and identify transportation and mobility needs within the RGVMAB multimodal network, the analysis included the following general categories:

- Equity
- Demographics
- Roadway
- Freight
- Transit
- Active Transportation
- System Safety

This chapter is a high-level summary of the in-depth information contained in a series of nine needs analysis technical memorandums. All technical memorandums can be accessed through the RGVMPO and provide in depth detail on all analysis conducted and their key findings.

Analysis was also conducted, where applicable, to obtain baseline performance measures used to compare to FAST Act performance targets. These findings are summarized in Chapter 9. The following sections detail the tools, data, and resources used to create the multimodal needs analysis chapter.

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Tools & Data Used

Due to the complexity of travel needs and the variety of modal systems available to address them, the project team used various resources and methods to create robust analysis detailing all multimodal aspects of the RGVMAB transportation system. The following sections define the tools and data used for the multimodal need analysis for the RGVMAB.

Federal Data Sources

To ensure a) a complete understanding of existing conditions on the RGVMAB roadway and freight networks and b) a federally compliant MTP, the project team used FHWA's National Performance Management Research Data Set (NPMRDS) to calculate baseline FAST Act system reliability performance measures for the existing system. These values were aggregated from the NPMRDS and joined to the NPMRDS Texas roadway network to spatially analyze and target areas of concern. The results of this analysis provide the RGVMPO with quantitative values for performance measures for use in the evaluation and prioritization of transportation investments. The mobility measures used in the analysis include:

- Level of Travel Time Reliability (LOTTR)
- Truck Travel Time Reliability Index (TTTRI)
- Percent of person-miles traveled on interstate segments that are reliable
- Percent of person-miles traveled on non-interstate NHS segments that are reliable

The project team also used FHWA's National Bridge Index (NBI) dataset and Highway Performance Monitoring System (HPMS) data to complete the operations and maintenance analysis for the RGVMAB roadway network. This in turn produced baseline federal performance measures for the infrastructure condition goal area.

This data was used alongside the FHWA *Computation Procedure for the Bridge Condition Measures* and the Code of Federal Regulations (23 C.F.R 490.409) to determine the condition of each bridge asset, as well as guidance from the Code of Federal Regulations (23 C.F.R. 490.313) to categorize pavement conditions by International Roughness Index (IRI).

TxDOT Data Sources

Data sets from TxDOT were used throughout the multimodal needs assessment. TxDOT's Crash Records Information System (CRIS) was the basis for all regional safety analyses and provided baseline federal performance measures for the safety goal area. CRIS covers the most recent five-year period (2015-2019) of data available in support of the requirements set forward in the Safety Performance Management Measures Final Rule (49 CFR part 490). CRIS is a database that contains a collection of records regarding motor vehicle traffic crashes as submitted by law enforcement officers through a standardized crash report. These reports are processed to exclude personal information but include other crash details relevant to analysis, such as crash severity, contributing factors, time of day, location, and roadway condition.

Further, the Texas Statewide Freight Network and Texas Trunk System from TxDOT were used to define and analyze the RGVMAB freight network.

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Transportation Demand Model (TDM)

Using the Lower Rio Grande Valley's (LRGV) Travel Demand Model (TDM) and Traffic Analysis Zones (TAZ) demographic inputs, existing and future population and employment values were developed to inform the needs analysis. Existing demographics are represented by the 2019 milestone year and future demographics by the 2045 forecast year.

Further, a TDM roadway network was generated and used to analyze existing and future roadway network conditions. An existing plus committed (E+C) network was created by coding TIP projects underway or soon to be started to represent the existing roadway network. The E+C network was compared to the 2045 no-build network – a network with no other transportation investments beyond the 2019 E+C network – to highlight deficient areas within the RGVMAB. 2019 E+C values were also compared to the 2045 build scenario to show potential improvements generated by the recommended projects.

The socioeconomic data necessary to run the model was gathered from a mixture of sources. The datasets included public domain data sources, published commercial datasets, stakeholder input via a Delphi Process, table-top GIS analysis, and limited field review of the study area.

Census Demographic Data

Many demographic characteristics were used to determine the location and characteristics of people in the region. The analysis focused on existing populations and their demographic characteristics. The analysis relied primarily on 2014-2018 American Community Survey (ACS) data. ACS data is based on a sample population measured at the block group level. Employment data is derived from the work-based Longitudinal Employer-Household Dynamics Origin-Destination Employment Statistics (LODES) for 2017, which is similarly an aggregate dataset based on the census block group geography.

Destination Data

Data for destinations in the region was collected using the ArcGIS Business Analyst Web Business and Facilities Search Feature. This data is extracted from a comprehensive list of businesses licensed from InfoGroup. The data includes an estimate of total employees and categories for the business locations using North American Industry Classification System (NAICS) codes. The NAICS codes are typically six-digit codes that identify the type of business; however, these codes have been adjusted to 8 digits for this feature set by InfoGroup. The 8-digit codes provide a greater level of detail than the traditional six-digit codes. Business categories were developed from these NAICS codes to provide comparisons for different types of businesses in the RGVMAB. Businesses with no employees were excluded from this analysis. Only a subset of the available business location data (roughly 44%) was complete enough to be categorized for this analysis.

Geographical Information Systems (GIS)

Throughout the RGVMPO 2045 MTP multimodal needs assessment, GIS analysis was used to visualize data spatially, and accordingly generate key findings for all aspects of the transportation system. This quantitative analysis was paired with qualitative findings from public and stakeholder outreach, as well as plan reviews to create an in depth understanding of system deficiencies and needs currently and over the next 26 years. The primary tools used for analysis were ArcGIS Pro and ArcGIS Online.

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Existing Efforts and Resources

Existing planning resources were also used to inform the multimodal needs analysis. Existing plans spanning all levels of government were reviewed to guide analysis. This effort also included plans currently being conducted (e.g. RGVMPO Congestion Management Plan, Active Transportation Plan, Transit Development Plan). Further information from the plan review can be found in Chapter 2.

Figure 4-1: McAllen South Broadway Park and Ride



ANALYSIS RESULTS

The following sections highlight all multimodal category analyses and their key findings. As previously mentioned, detailed analysis can be found in the RGVMPO 2045 MTP technical memorandums accessible through the RGVMPO.

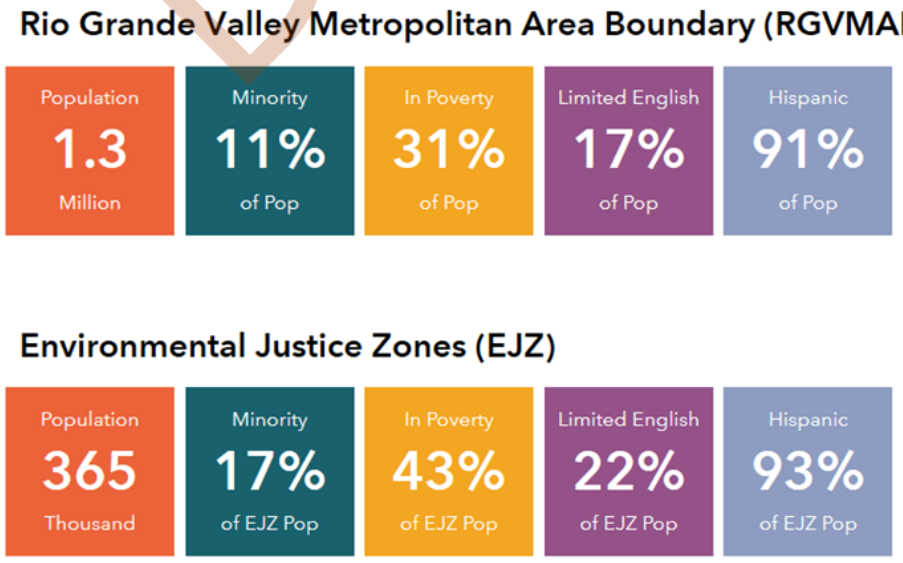
Equity

Equitable implementation of projects and plans takes into consideration historically disenfranchised people to ensure that all people regardless of race, color, national origin, or income are accounted for when planning for a region. This can be achieved analyzing Environmental Justice Zones (EJZs), which are areas that contain a high minority population, high population in poverty, or populations with high limited English proficiency (LEP). These zones are used to evaluate proposed transportation projects for equitable impacts. EJZs were defined as having at least two of the following criteria:

- High Minority Population – Block groups whose percentage of racial minorities is greater than the RGVMAB's total percentage of racial minorities (11%).
- High Population in Poverty – Block groups whose percentage of population in poverty is greater than the RGVMAB's total percentage of population in poverty (31%).
- High LEP Population – The top 10% of block groups with the highest percentage of LEP population.

'High concern' EJZs were also identified. These block groups were identified as high concern due to meeting all three of the above-mentioned criteria. It must be noted that ACS minority data is represented by race subcategories (e.g. White; Black/African-American; American Indian or Alaska Native; Asian; Native Hawaiian or Other Pacific Islander; and other Race) that do not include Hispanic, Latino, or Spanish origin ethnicity populations. Accordingly, Hispanic, Latino, or other Spanish origin ethnicities are also included in this section using overlay analysis of EJZs to identify potentially underserved and underrepresented cohorts within the RGVMAB. Results at the RGVMAB and EJZ level are presented in Figure 4-1 below.

Figure 4-2: RGVMAB Environmental Justice Results

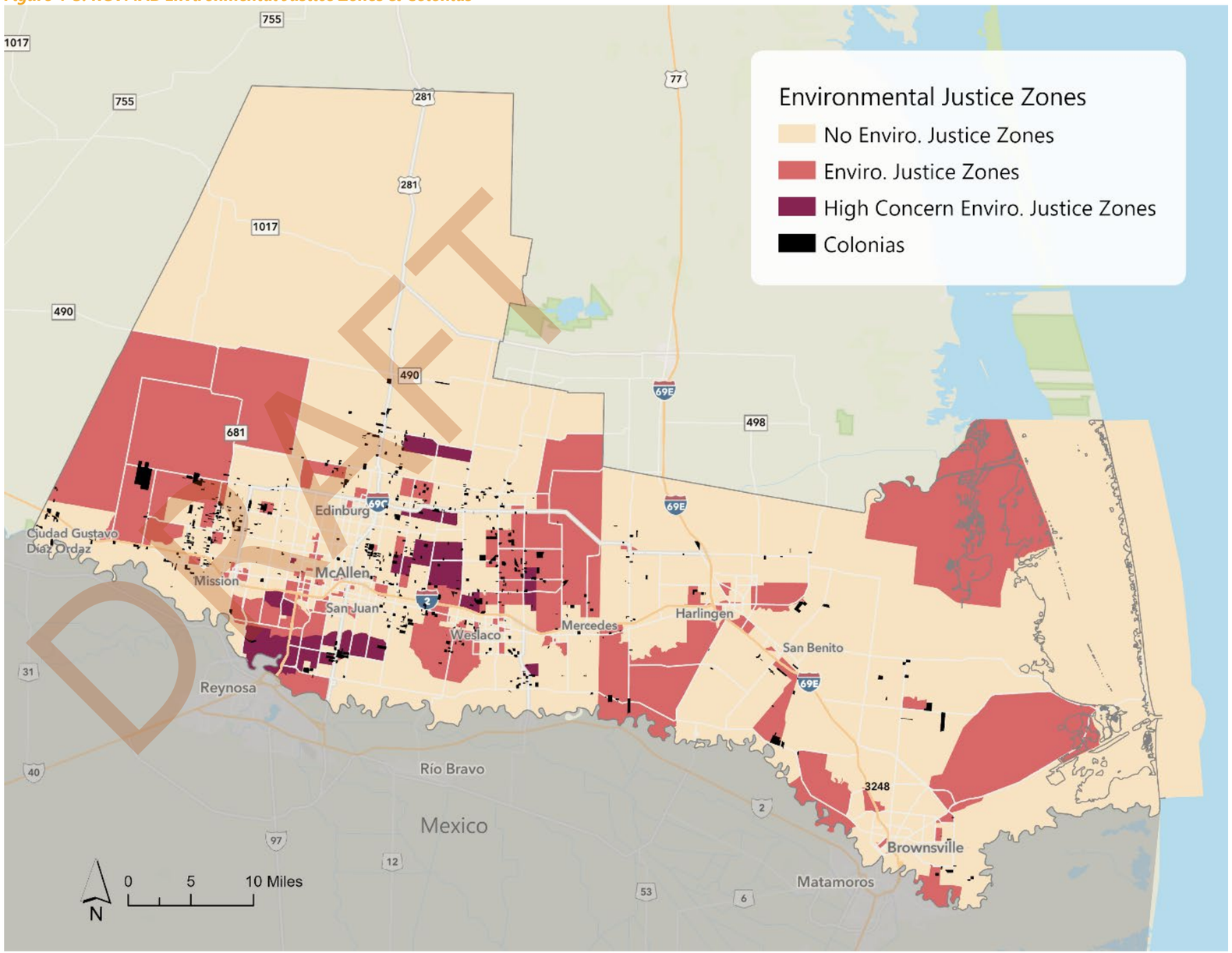


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Analysis shows 28% of the RGVMAB population (Figure 4-2) falling within an EJZ. Within this vulnerable group we see a consistent trend of higher likelihood of each demographic category being redirected to an EJZ. For instance, 11% of the total population in RGVMAB and 17% of EJZs are considered minority population - this means almost 44% of the total minority population in RGVMAB lives within an EJZ. Similar trends are seen for RGVMAB's impoverished population and LEP population where upwards of 40% of these vulnerable populations end up in a defined EJZ.

Figure 4-2 also displays colonias, which are unincorporated border communities that often lack adequate water and sewer systems, paved roads, and safe, sanitary housing. Colonias flourish in counties along the United States - Mexico border which includes the RGVMAB. Overlaying areas identified as colonias with identified EJZs creates a composite image of areas that should represent a priority when future transportation projects are being taken into consideration.

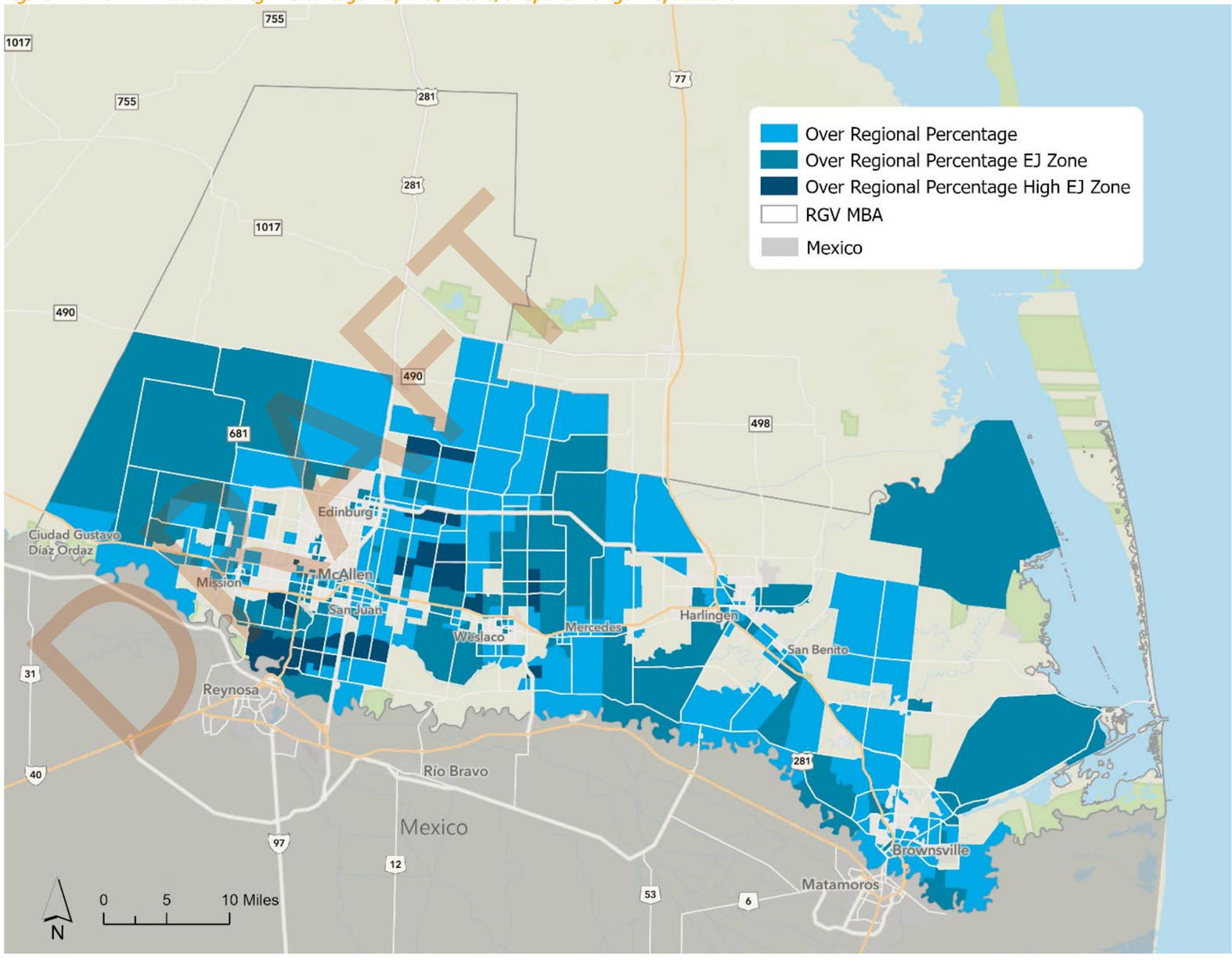
Figure 4-3: RGVMAB Environmental Justice Zones & Colonias



Due to the substantial amount of population self-reported as Hispanic, Latino, or of Spanish origin in the RGVMAB, there is a tendency for demographic measures to disguise some of the issues that the EJ analysis tries to pinpoint. While this ethnic group makes up 91% of the RGVMAB - and accordingly does not appear to be a minority population - at a national level, this population group is considered historically disadvantaged and must not be left out of the EJ analysis. Similar methods for defining EJ zones were used to find block groups with Hispanic, Latino, or Spanish origin populations greater than the regional average.

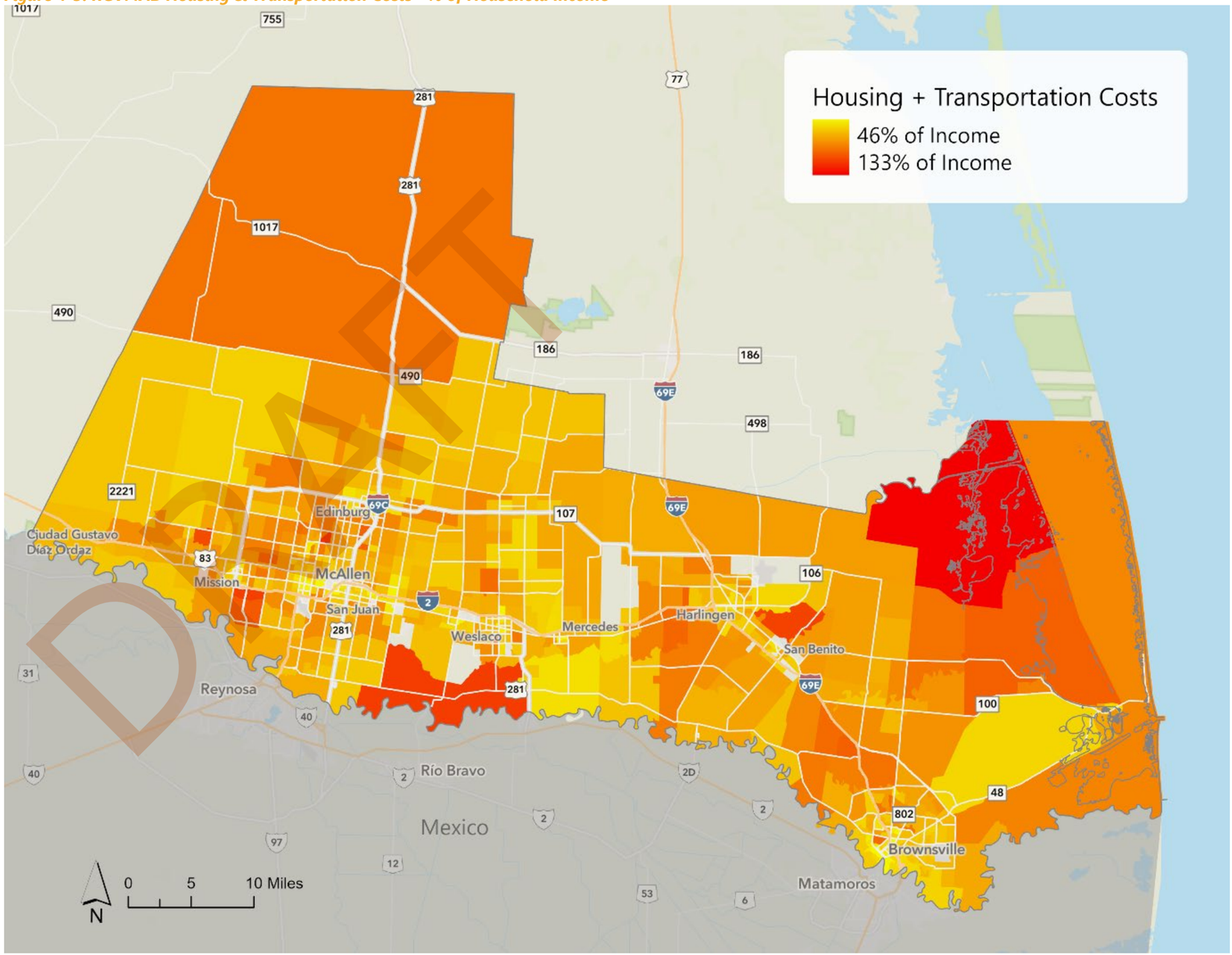
Figure 4-3 displays above average Hispanic/Latino/Spanish origin block groups overlaid with EJZs and high concern EJ zones. Colors represented by darker shades of blue indicate block groups designated as EJZs/high concern EJZs. This overlay analysis further highlights overlap in historically disadvantaged areas within the RGVMAB which can inform decision making necessary later in the planning process.

Figure 4-4: RGVMAB EJZs and High Percentage Hispanic, Latino, or Spanish Origin Populations



Further, 98% of block groups within the RGVMAB are considered unaffordable when analyzing the Housing and Transportation (H+T) Affordability Index. The index shows what percentage of a household's income is spent on housing and transportation combined, with the unaffordable threshold being 45% of income (Figure 4-4).

Figure 4-5: RGVMAB Housing & Transportation Costs - % of Household Income



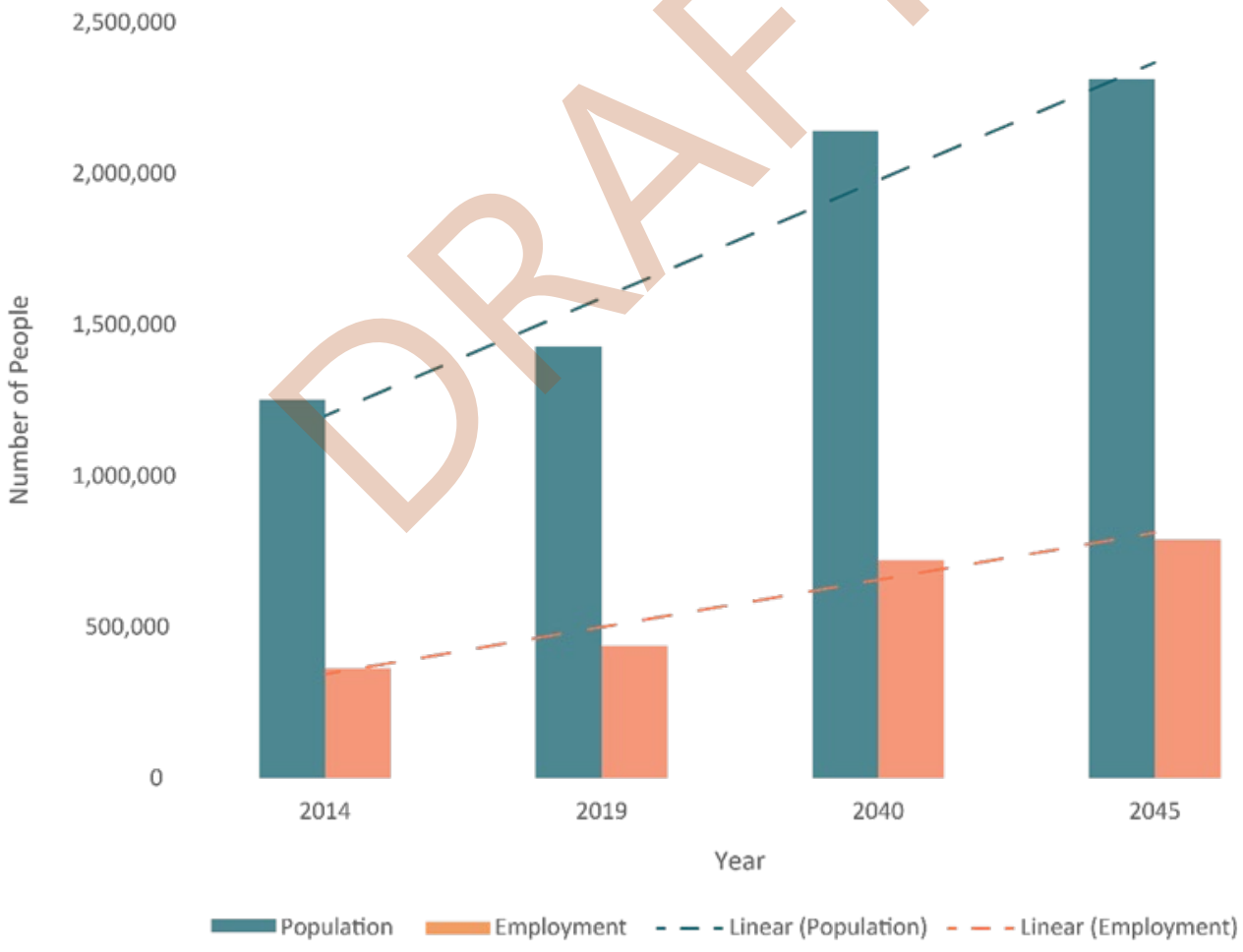
Demographics

When planning for the next 25 years, it is important to understand the population and employment trends within the RGVMAB as these factors greatly impact the transportation network. Demographic analysis was conducted using RGVMPO TDM data to compare the current estimated population and employment in 2019 to the future projections for population and employment in 2045. This analysis provides important insights into where population and employment are concentrated today and where changes are expected to occur in the future. It also helps the RGVMPO prioritize projects to ensure the transportation system is meeting the needs of the community.

Regional Growth

It is critical to understand and visualize where growth is occurring within the region to guide the MTP planning process. The RGVMAB is a dynamic, growing area in terms of both population and employment, with projected growth presented in Figure 4-5.

Figure 4-6: Projected RGVMAB Population & Employment Growth



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Figure 4-6 presents population growth by density (per acre) at the block group level over the 26-year forecast horizon. High growth is projected near McAllen/Pharr along the I-2 corridor, in Harlingen east of the I-69E corridor, and throughout the Brownsville area.

Figure 4-7: Projected RGVMAB Population Growth (2019 - 2045)

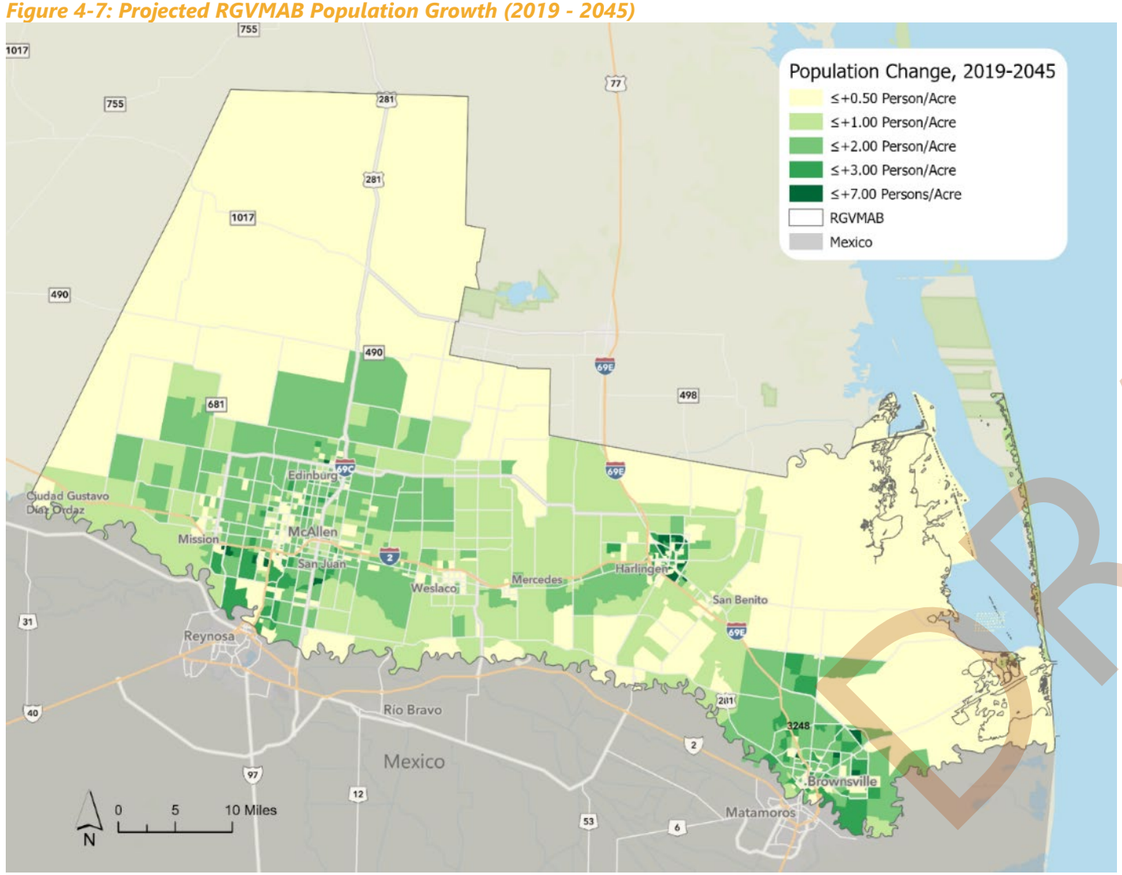
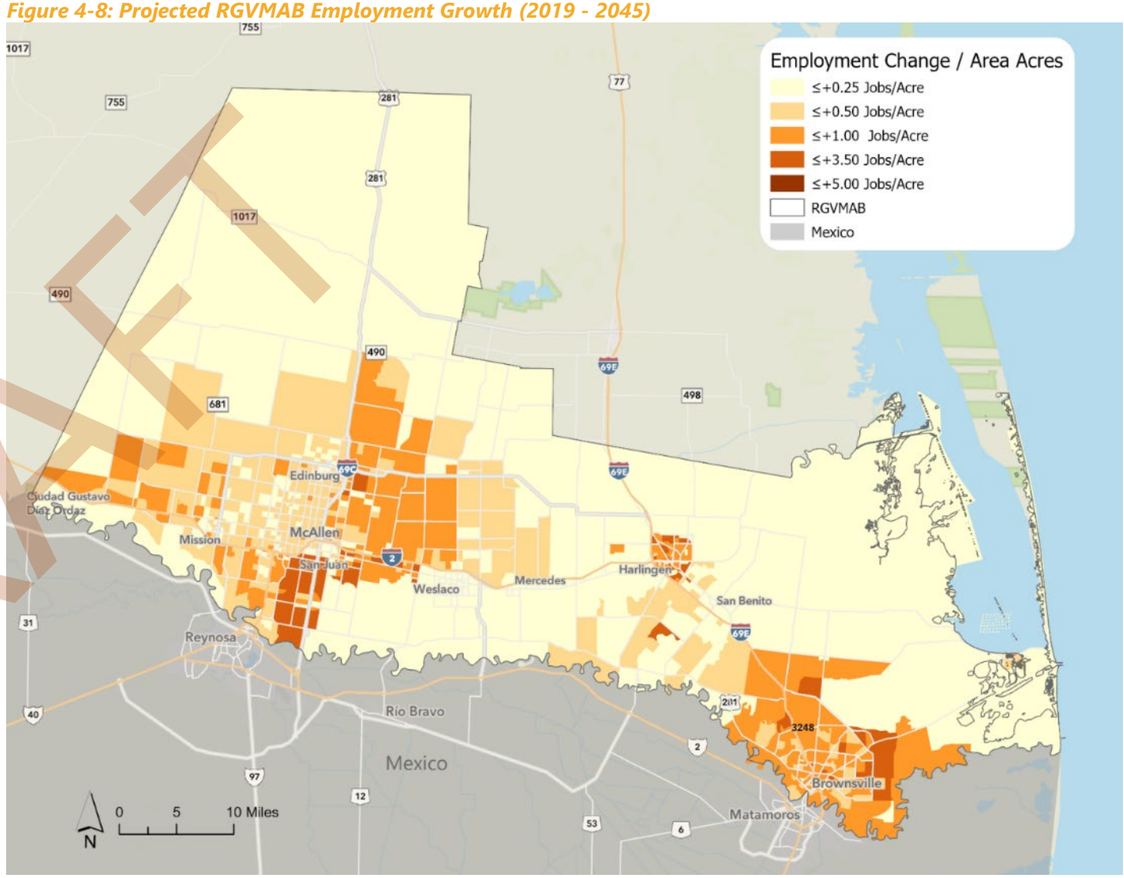


Figure 4-7 presents employment growth by density (per acre) at the block group level over the same forecast horizon. Areas projected to experience high employment growth cluster around the I-69C/US 281 corridor from the United States – Mexico border north beyond Edinburg, throughout the Harlingen municipality, and within and surrounding the Brownsville area.

Figure 4-8: Projected RGVMAB Employment Growth (2019 - 2045)

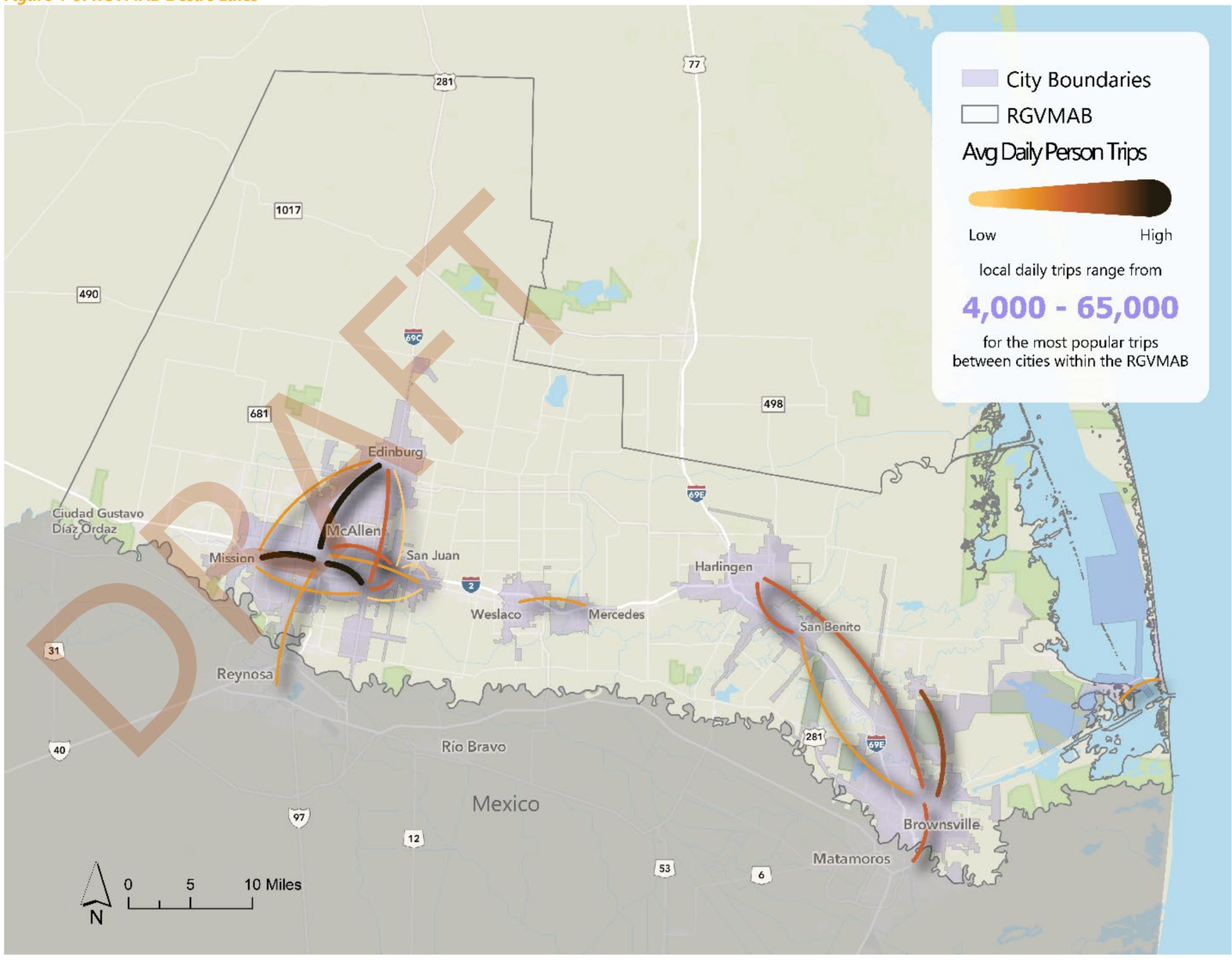


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Travel Patterns

The most common transportation mode in the RGVMAB is the automobile. Understanding where most of the population in the region is traveling reveals the most heavily used travel patterns or 'desire lines' in the region. RGVMPO TDM outputs were used to better understand the movement of people in the RGVMAB within municipal boundaries (Figure 4-8). Accordingly, results display the most traveled city pairs to be in Hidalgo County between Mission, McAllen, Pharr, and Edinburg (roughly 65,000 annual trips). This analysis works in tandem with population and employment growth projections in the previous sections to understand where transportation improvements are most needed within the RGVMAB.

Figure 4-9: RGVMAB Desire Lines



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Roadway

The roadway analysis provides policy makers and the public with a better understanding of how the roadway network will be impacted by changes in the region over time if no improvements are made to the existing transportation system. The project team looked at three aspects of roadway performance for the analysis, listed below:

- Existing roadway performance using FHWA's NPMRDS
- Transportation system performance over time using the RGVMPO TDM to report anticipated trends in roadway performance over the MTP planning horizon
- Capacity deficiencies analysis using the RGVMPO TDM

This approach provided a holistic understanding of the state of the RGVMAB's roadway infrastructure, as well as where improvements should be focused as the RGVMPO moves forward with the MTP planning process. Key findings from the RGVMPO 2045 MTP roadway analysis include:

- The existing interstate network meets the system reliability target of 90%; the non-interstate NHS network does not meet the system reliability target
- The percentage of non-SOV travel on the NHS network suggests SOV to be the RGVMAB's mode of choice
- TDM outputs show large increases in all congestion measures at the regional and per capita level between 2019 and the 2045 No-Build scenario

The following sections detail findings from analyses based on FHWA's NPMRDS and the RGVMPO TDM to create a robust understanding of existing and future roadway conditions.



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Congestion & Delay Analysis

LOTTR is a measure of "the consistency or dependability of travel times from day to day or across different times of day" for a given roadway. While congestion typically focuses on the average roadway conditions in terms of delay, travel time reliability indicates the level to which traffic or roadway conditions can be anticipated for travelers to plan around expected delays. Reliability of the roadway network is important because it allows travelers to reach their destinations at their planned time. LOTTR is a federally mandated performance measure. RGVMPO LOTTR measures can be found in Chapter 9.

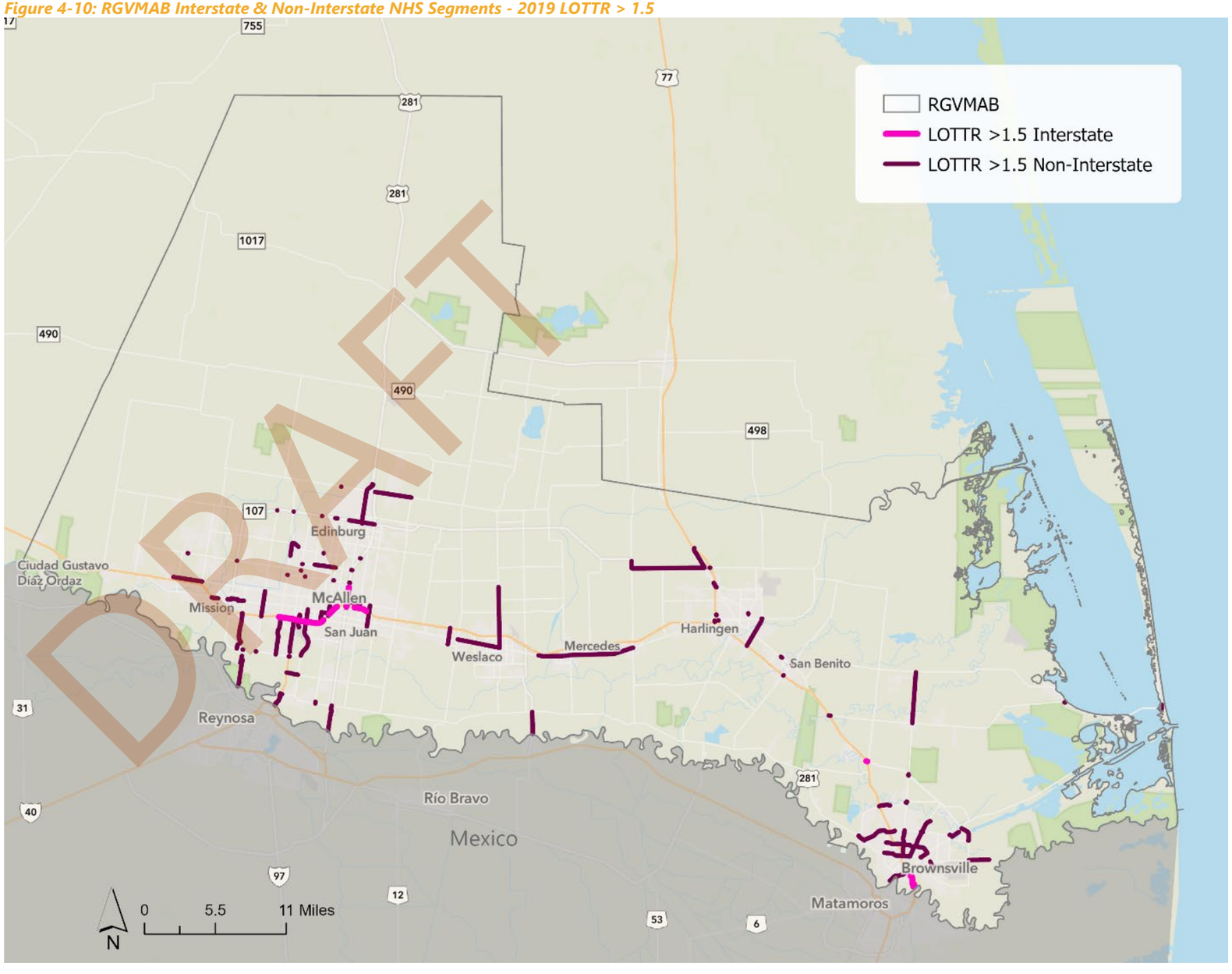
Per the 2019 NPMRDS, the current system reports 93.7% percent of person-miles traveled on interstate segments that are reliable. The current system further reports 88.4% percent of person-miles traveled on non-interstate National Highway System (NHS) segments that are reliable. Figure 4-9 displays segments at the RGVMAB level for Interstate and non-interstate NHS facilities with an LOTTR greater than 1.5. This value represents the threshold for a roadway segment concerning its designation as 'reliably congested'. Those segments with values greater than 1.5 are considered unreliably congested and should be prioritized when considering transportation infrastructure improvements. Accordingly, contiguous segments with flagged LOTTR values exist on I-2, I-69C, and I-69E. Non-interstate NHS segments are dispersed throughout the region

To bolster the NPMRDS national performance measure information on existing conditions, separate congestion measures from the RGVMPO TDM outputs were analyzed for both 2019 and 2045 and compared to no-build outputs to highlight potential future issues in terms of congestion and delay. Outputs were calculated to represent performance trends at a system and per capita level. The following measures were used to gain this detailed understanding:

- Vehicle Miles Traveled (VMT) - The amount of roadway miles traveled by vehicles within a specified segment for AM and PM peak period travel times
- Vehicle Hours Traveled (VHT) - The number of hours traveled by vehicles
- Vehicle Hours of Delay - Additional hours spent in traffic due to congestion on the roadway network
- Travel Time Index (TTI) - The ratio of travel time during peak travel periods (congested time) required to make the same trip at free-flow speeds

Table 4-1 shows the existing and 2045 No-Build transportation systems to be inefficient based on TDM outputs.

Figure 4-10: RGVMAB Interstate & Non-Interstate NHS Segments - 2019 LOTTR > 1.5



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Table 4-1: RGVMAB Congestion Trends

Measure	2019 – Existing Conditions*			2045 – No-Build			% Change for Totals
	Interstate & Toll	Arterials	Total	Interstate & Toll	Arterials	Total	
Daily VMT**	1,253	3,659	4,912	2,030	6,501	8,531	74%
per person			3.44			3.69	7%
Daily VHT	28,422	124,215	152,637	70,253	763,769	834,022	446%
per person			0.11			0.36	237%
Annual Wkday Vehicle Hrs of Delay**	1,019	9,157	10,176	7,998	196,716	204,714	1912%
per person			7.13			88.53	1142%
Weighted Avg. TTI	1.17	1.61	1.39	1.84	6.79	4.32	211%

**2019 was used as stand in for current conditions because it is the most recent year for which complete data is available*

***VMT & Annual Weekday Vehicle Hours of Delay represent metrics/1,000 and rounded to nearest whole number*

The TDM also provides capacity attributes, which create the base for the RGVMAB roadway system deficiencies analysis of anticipated 2045 transportation system performance. Volume to Capacity (V/C) Ratio was used to generate Level of Service (LOS) values and is defined below.

- V/C Ratio – The ratio of traffic flow to capacity (maximum allowable traffic flow) on a roadway segment, where a ratio of 1 represents a segment at full capacity and higher values indicate more severe congestion

Table 4-2 displays RGVMAB capacity measures. The 2045 average V/C ratio suggests that the roadway network will be roughly 26% above capacity during peak travel periods, increasing by 63% from 2019. The 2045 No-Build average V/C ratio falls within LOS F, which indicates severe congestion as the status quo for the RGVMAB if no action is taken.

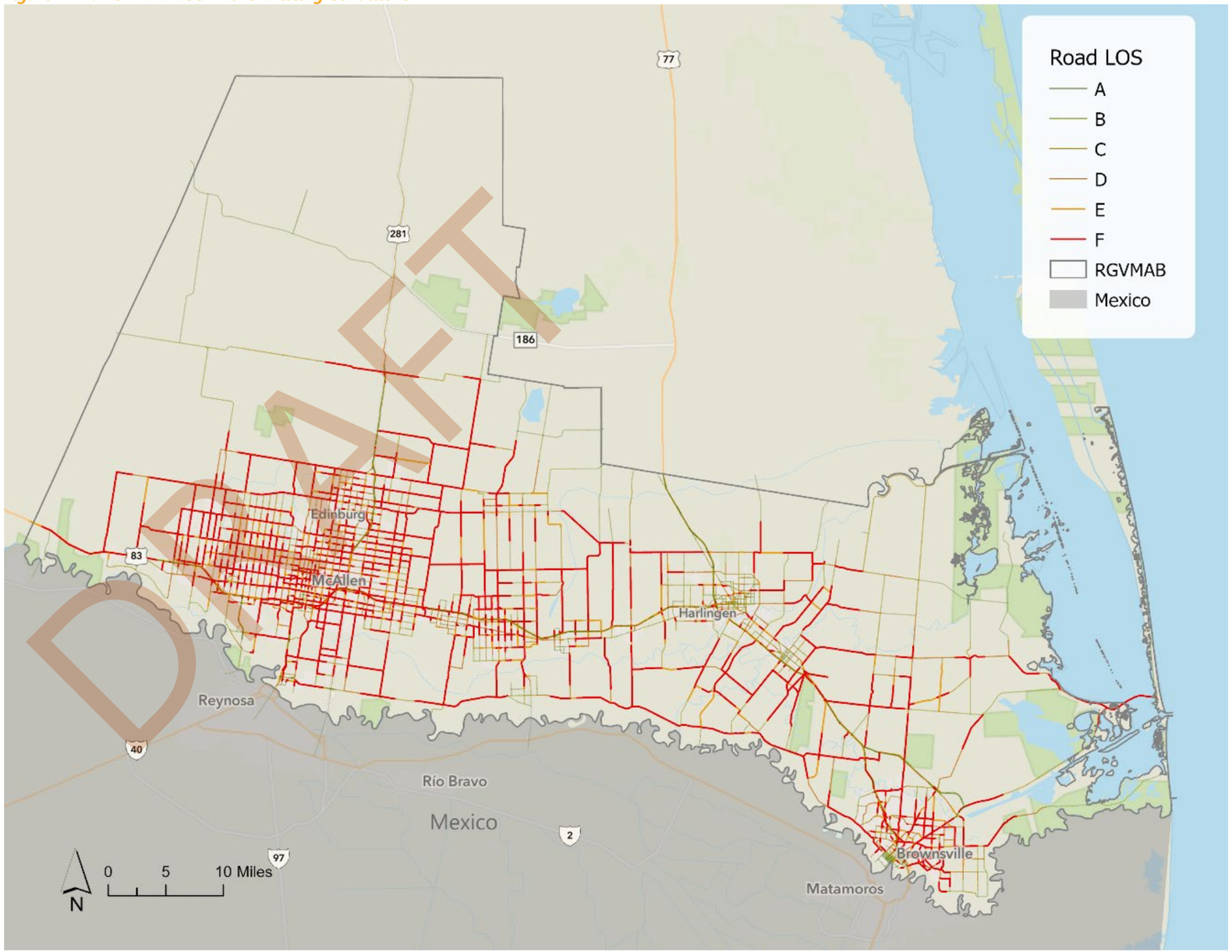
Table 4-2: RGVMAB Capacity Measures

Measure	2019 – Existing Conditions*			2045 – No Build			
	Interstate & Toll	Arterials	Total	Interstate & Toll	Arterials	Total	% Change for Totals
Avg. V/C Ratio	0.78	0.76	0.77	1.27	1.25	1.26	63%
% of Roadway Miles with Heavy Congestion	-	-	43%	-	-	80%	85%

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Figure 4-10 displays RGVMAB roadway network LOS values for 2019 to further illustrate potential roadway system deficiencies within the RGVMAB. LOS is an indicator of congestion on a scale from A to F, with A representing a high-quality LOS under which the traveler experiences free-flow traffic conditions and F represents a failure in service delivery under which the traveler experiences severe congestion with major delays. TDM outputs forecast severe LOS conditions not only within major and minor municipalities, but similar conditions expanding throughout peripheral areas and rural highways.

Figure 4-11: RGVMAB LOS - 2019 Existing Conditions



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Operations & Maintenance

In addition to being federally required, creating an inventory of the region's bridge and roadway conditions helps to promote the safe and efficient movement of people and goods throughout the RGVMAB. This inventory allows regional and local decision-makers to understand which facilities are in a state of good repair, which are in fair condition and require oversight, and which are in poor condition and must be prioritized for improvement.

BRIDGE CONDITIONS

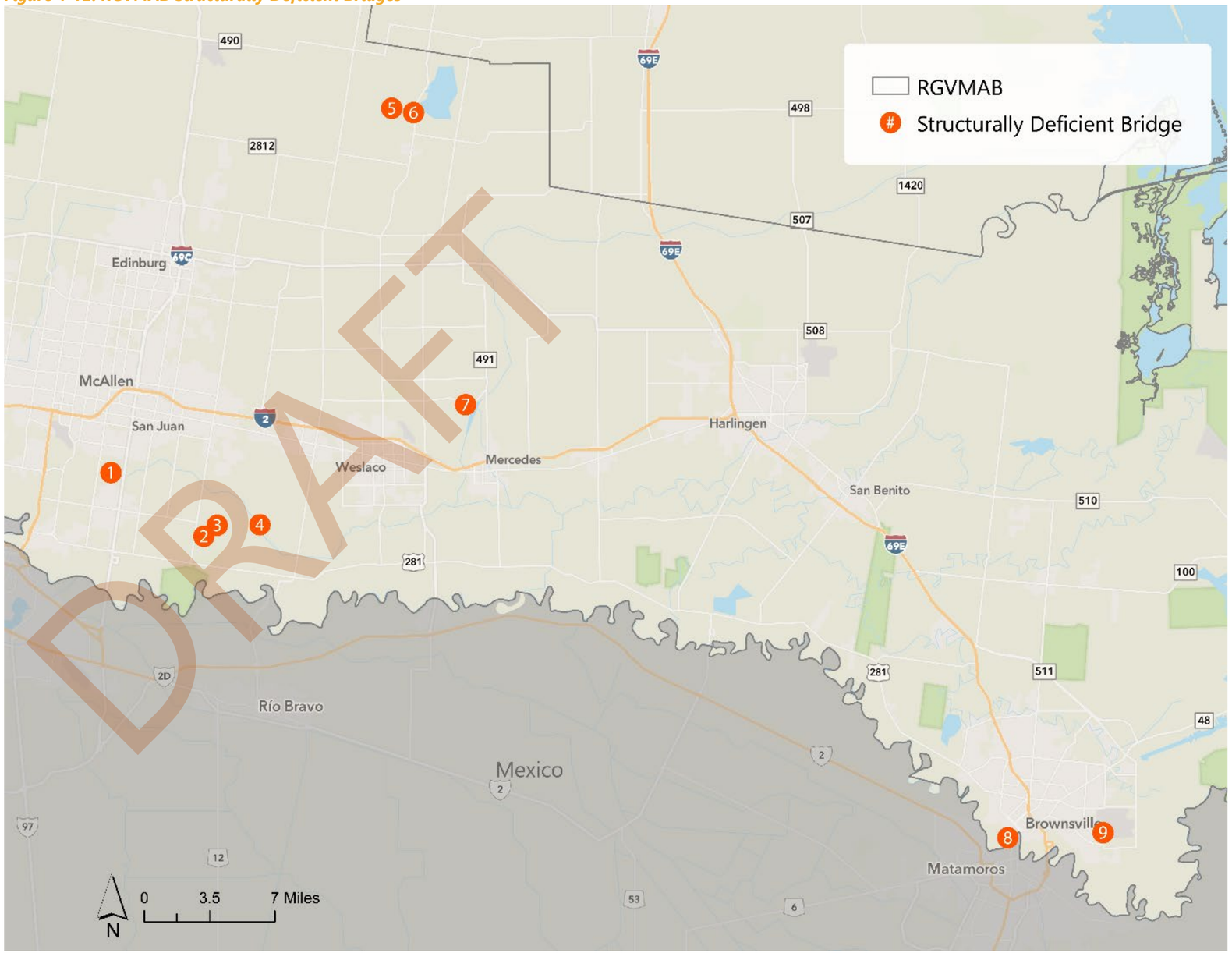
The bridge conditions analysis was based on the most up-to-date version of the FHWA's NBI. The NBI included location and condition information for 765 bridges within the RGVMAB as of April 2020. It must be noted that bridges identified were limited to the NBI dataset, and more deficient bridges likely exist that are off system and/or locally owned. The project team followed guidance provided in FHWA's Computation Procedure for the Bridge Condition Measures and the Code of Federal Regulations (23 C.F.R 490.409) to determine the condition of each bridge asset.

Out of the 765 bridges considered for the analysis, only 9 were identified as being structurally deficient. Table 4-3 shows the percentage of bridge deck area by condition for bridges in the RGVMAB, as well as those located on the NHS in the study area. Figure 4-11 displays structurally deficient bridges at the RGVMAB level, showing poor bridge infrastructure to largely occur in rural and/or local areas of the roadway network.

Table 4-3: RGVMAB Bridge Conditions

	Total	Interstate and Non/Interstate NHS
% in Good Condition	59%	51%
% in Poor Condition	0.13%	0%

Figure 4-12: RGVMAB Structurally Deficient Bridges



ROADWAY CONDITIONS

Roadway pavement condition analysis for the RGVMPO 2045 MTP was based on 2018 data from FHWA's Highway Performance Monitoring System (HPMS). HPMS data provided a condition rating based on the International Roughness Index (IRI) for roadways in the RGVMAB. This includes roadway segments found on the National Highway System (NHS), as well as other roadways critical to the movement of people and goods in the region.

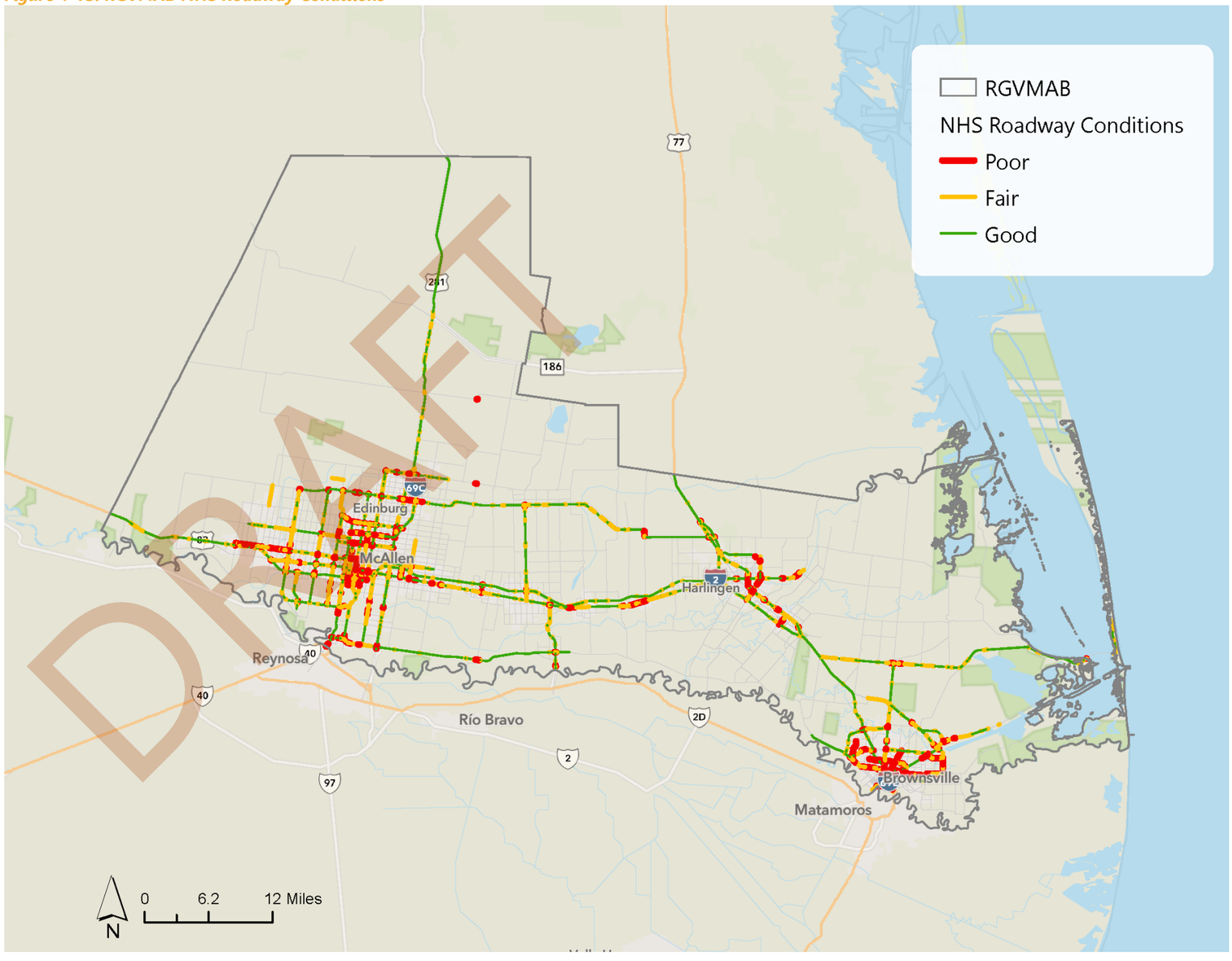
HPMS data was then totaled to represent the number of lane miles for each of the three pavement condition categories, allowing the project team to calculate the percentage of interstate (NHS) and non-interstate NHS lane miles and percentage of lane miles by condition. Table 4-4 presents the pavement condition results which coincide with the national performance measures identified by the FHWA using values derived from representative roadway segments reported in the HPMS.

Table 4-4: RGVMAB NHS Roadway Conditions

Condition	Total Lane Miles			% of Total Lane Miles		
	Inter-state	Non-Interstate NHS (with condition scores)	Total NHS	Inter-state	Non-Interstate NHS (with condition scores)	Total NHS
Poor	1	42	43	1%	9%	8%
Fair	16	152	168	15%	34%	30%
Good	86	256	342	84%	57%	62%
Total	102	451	552	100%	100%	100%

Figure 4-12 displays roadway pavement conditions for the NHS (both Interstate and Non-Interstate) at the RGVMAB level, showing the majority of major interstate and highway infrastructure to be in a state of good repair.

Figure 4-13: RGVMAB NHS Roadway Conditions

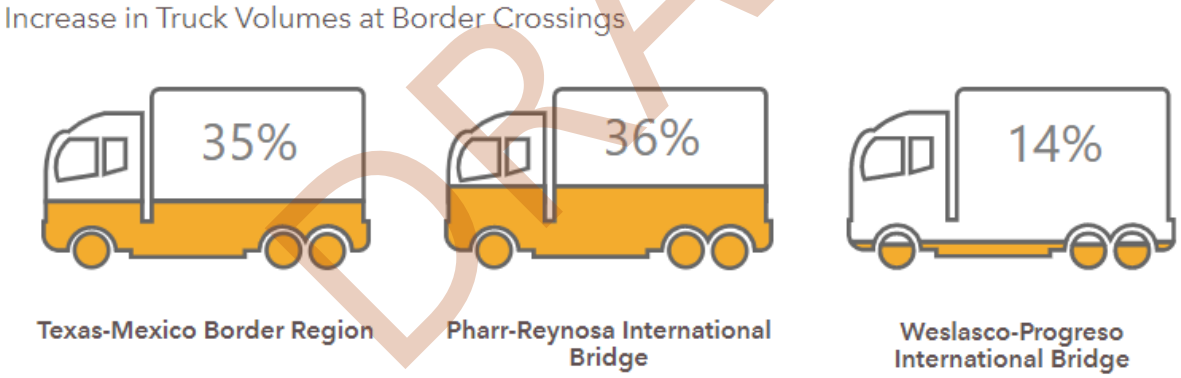


Freight

The RGVMAB is a multimodal freight and international trade hub due to its location on the United States – Mexico border and the Gulf of Mexico. This creates a unique need for freight connectivity in the region. The RGVMPO multimodal freight network serves critical connections throughout the RGVMAB, state of Texas, United States, and beyond through an intricate network of freight facilities. This includes major interstate and highway infrastructure, railroads, deep water and inland ports, and airports, all connected to efficiently move goods throughout the region and beyond. Key takeaways from the RGVMPO 2045 MTP freight analysis are listed as follows:

- NPMRDS TTTR analysis displays several areas are experiencing unreliable travel times, which may impact on-time delivery of freight and cause the deviation of freight traffic onto surrounding infrastructure
- The TDM forecasts suggest that a majority of the freight network is likely experience severe peak hour LOS conditions by 2045
- Due to the many intermodal facilities and geographical location of the RGVMAB, the region contains many important freight generators with transportation connectivity needs
- The RGVMAB contains several border crossing facilities, four of which allow commercial/freight truck traffic. These facilities have experienced increasing northbound crossings over the last decade

Figure 4-14: RGVMAB Border Crossing 2008 to 2018



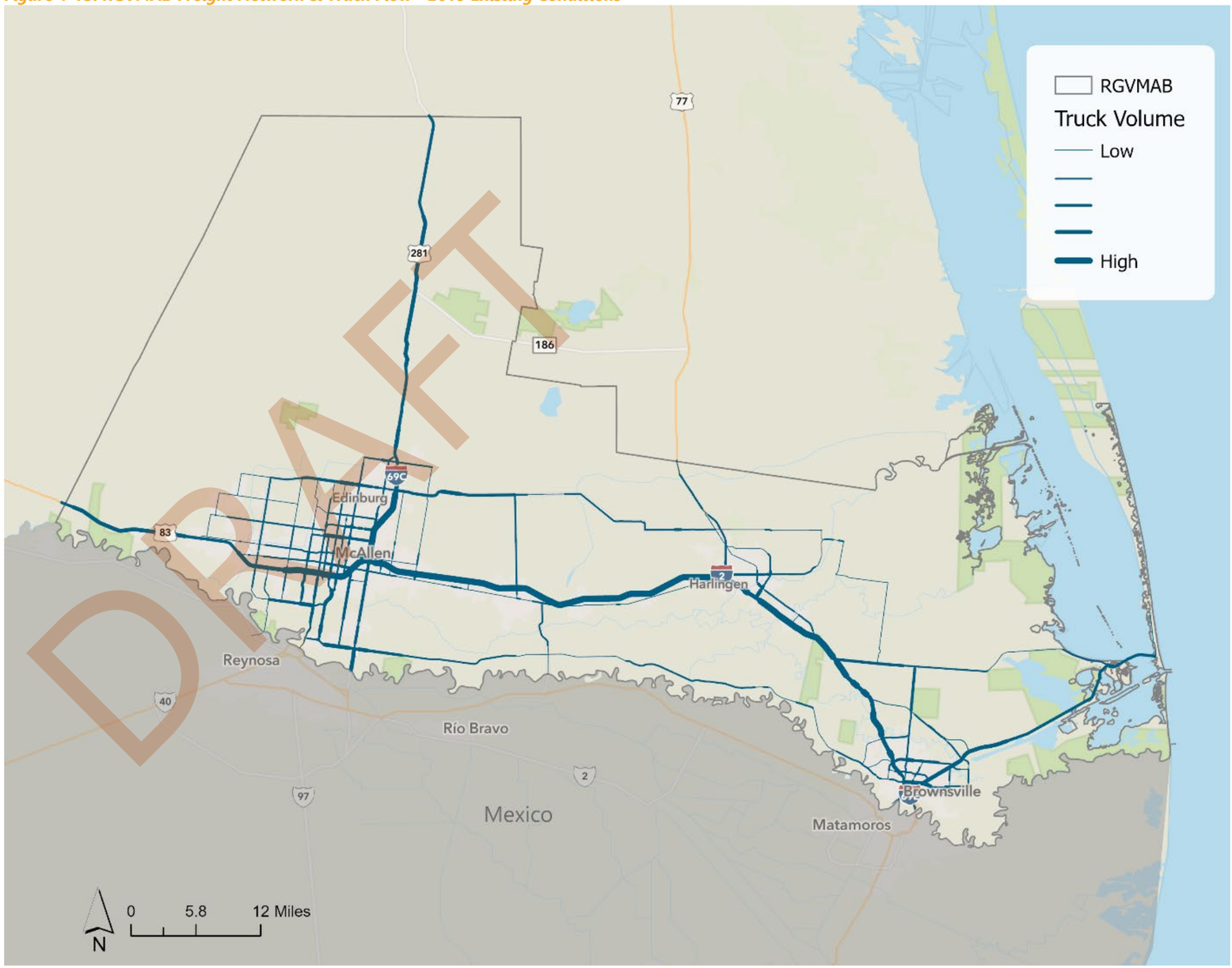
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Assets

The Freight Roadway Network was defined based on a combination of sources that identify major roadways in the region that support freight truck traffic. Identified roadways include the Interstate Highway System, the NHS, the Texas Statewide Freight Network, and the Texas Trunk System, which defines rural/off-system roadways capable of handling freight. Due to the high volume of freight traveling within and through the RGVMAB, it must be noted that not all roads experiencing significant freight travel were included in the defined RGVMAB freight network. The freight network mainly includes roads more local and/or rural in nature that may currently serve as through routes or handle freight spillover from dedicated freight routes.

Figure 4-14 shows the designated freight network with associated 2019 truck volumes within the RGVMAB.

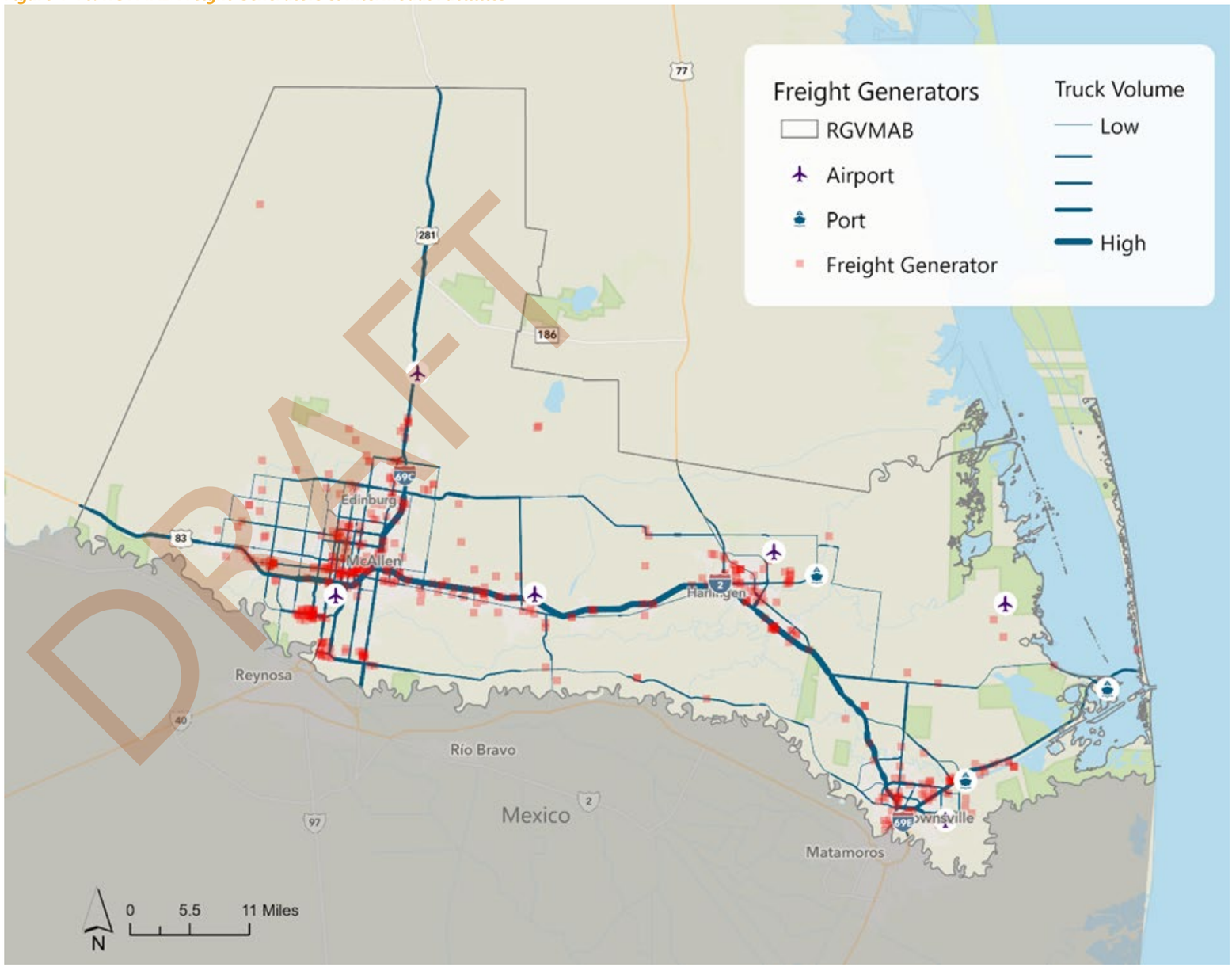
Figure 4-15: RGVMAB Freight Network & Truck Flow - 2019 Existing Conditions



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Figure 4-15 identifies the locations of freight generators and intermodal facilities in the RGVMAB in relation to the freight network. Freight generators are represented by concentrations of employment in the following industries: natural resources extraction, utilities, constructions, manufacturing, wholesale trade, and transportation/warehousing jobs. Generators tend to cluster near intermodal facilities. Intermodal facilities represent break of bulk points where cargo changes freight mode (i.e. airports and ports). These generators contribute significantly to truck traffic; this includes the Port of Harlingen and Port of Brownsville which are considered nationally significant ports in reference to goods movement.

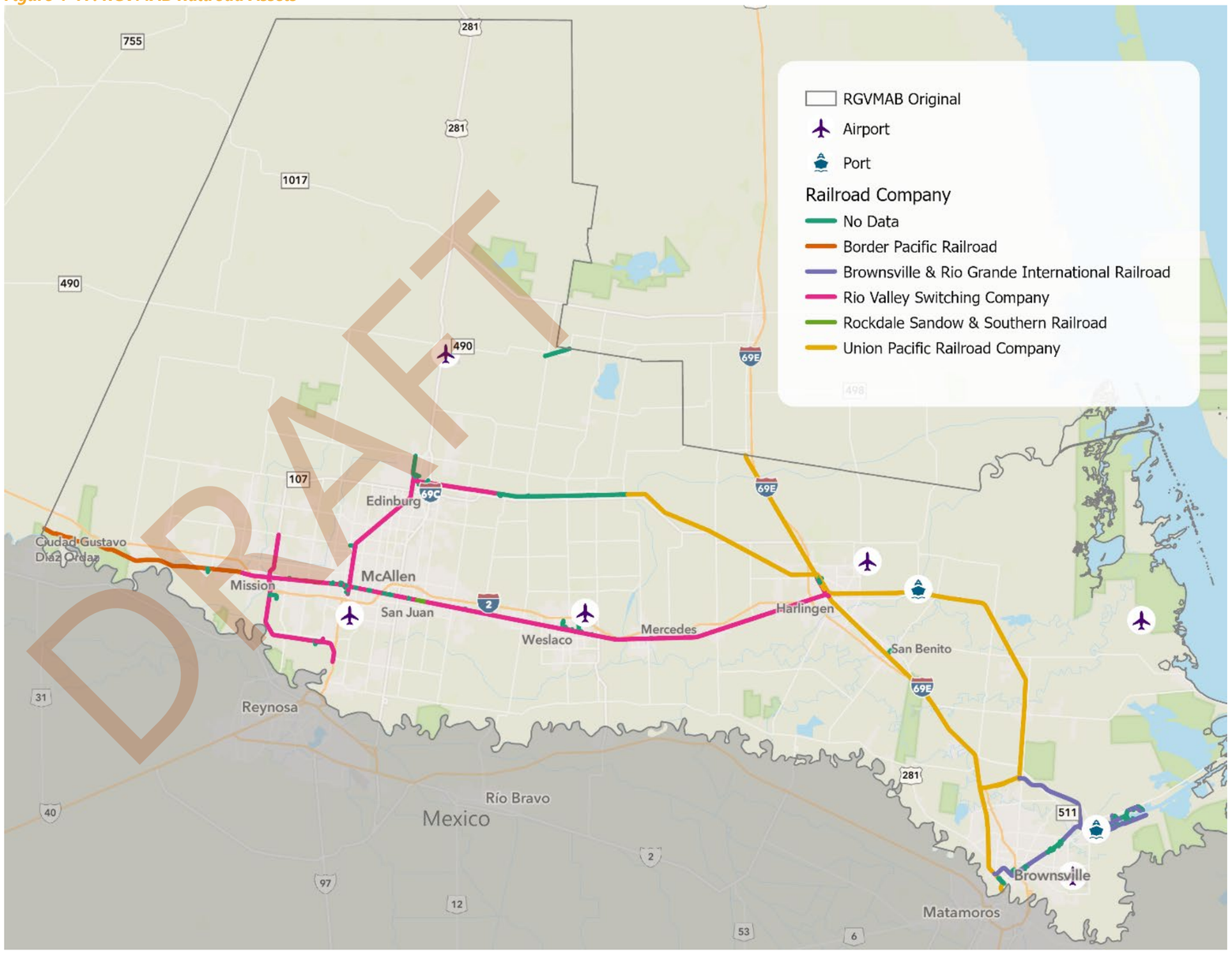
Figure 4-16: RGVMAB Freight Generators & Intermodal Facilities



The RGVMAB's inland and border location creates opportunity for the region, because the area has become a crossover station for both international and domestic rail freight traffic – specifically east-west traffic in the United States (Figure 4-16). The RGVMAB contains roughly 535 miles of railroad facility, 8 miles of rail bridges, and 6 railyards. Both the Union Pacific Railroad (UP) and BNSF Railway (BNSF) connect with the Ferrocarril Mexicano Railroad (FXE) in Ciudad Juarez and Chihuahua, Mexico, producing 11% of annual rail freight border crossings in Texas.

While the RGVMAB's rail facilities have a substantial impact on the generation of freight in the region, the existing infrastructure also creates externalities due to a series of at-grade crossings with freight network roadways. Such crossings create potential delays which may impact roadway congestion and safety.

Figure 4-17: RGVMAB Railroad Assets

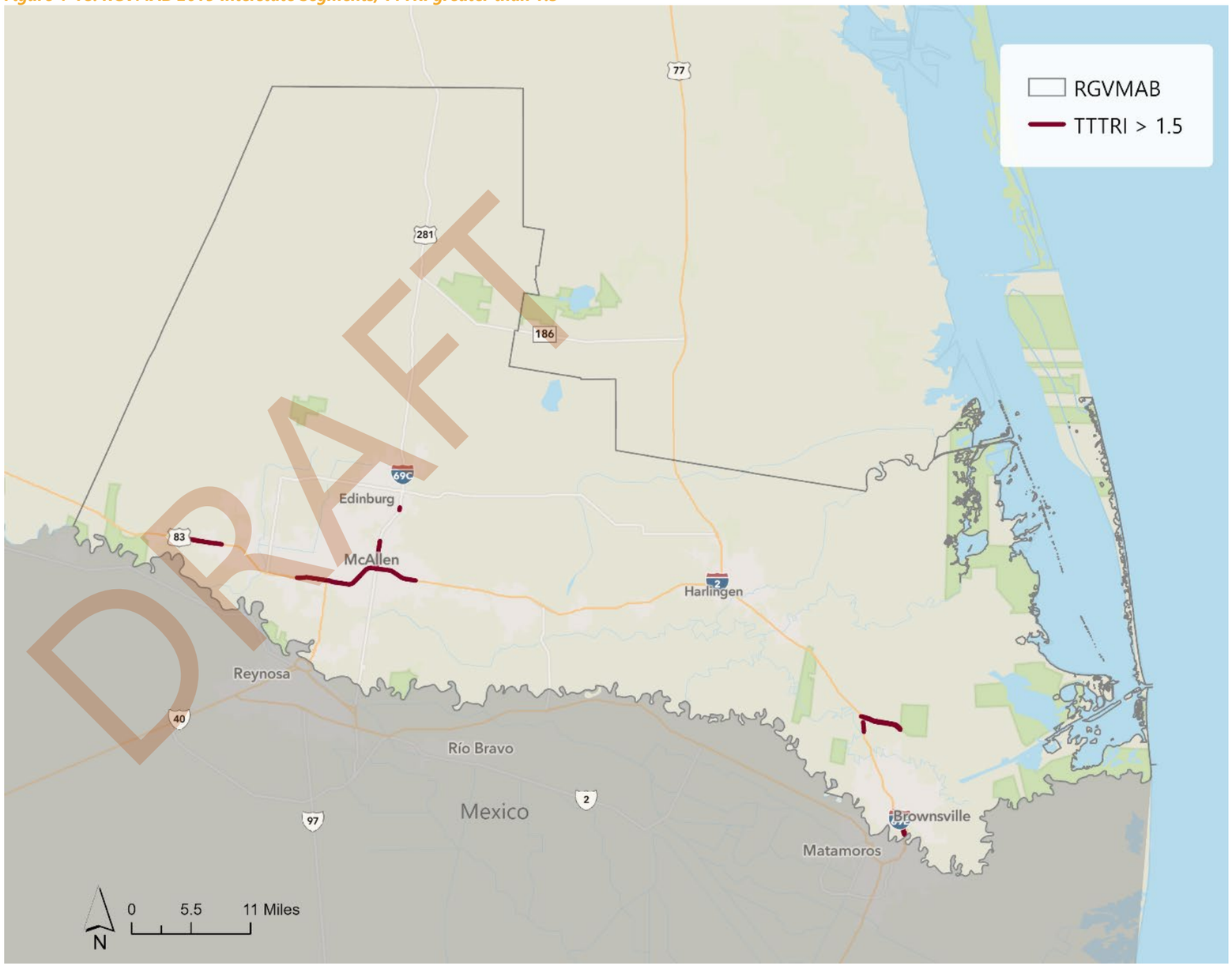


Conditions & Performance

Trucks carry more freight tonnage than any other single mode (rail, water, and air) operating in the Texas multimodal freight transport system. The roadway network is critical to the movement of freight within, into, and out of the RGVMAB. It is critical that the RGVMPO's roadways provide safe, efficient, reliable routes for the movement of goods.

TTTRI is an indicator of unexpected delay or the predictability of congestion specific to freight. TTTRI is an important measure to consider for freight analysis as many businesses rely on predictable, just-in-time freight deliveries as part of their operations. FHWA provides data resources for reporting TTTRI values specifically for interstate segments. Figure 4-17 presents all interstate segments in the RGVMAB with TTTRI score that indicates that travel times on the segment are unreliable.

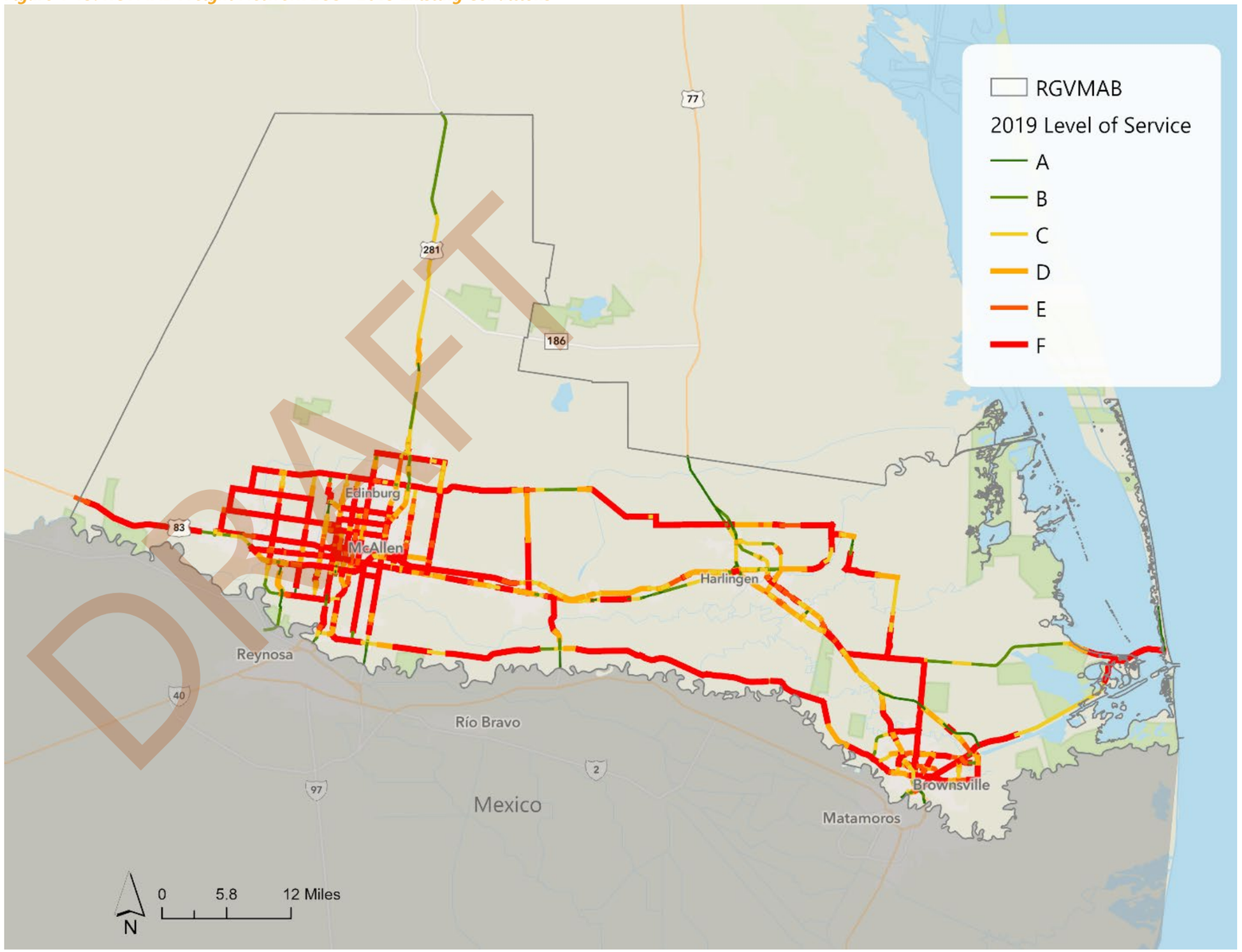
Figure 4-18: RGVMAB 2019 Interstate Segments; TTTRI greater than 1.5



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Figure 4-18 presents 2019 peak period LOS for the RGVMAB freight network and displays high levels of congestion along major freight corridors throughout the region. Like the roadway analysis, TDM outputs suggest severe existing congestion occurring along the RGVMAB freight network, with LOS projected to worsen by the 2045 no-build period. Not only is congestion inconvenient to freight traffic, but it also comes with a cost. With the e-commerce boom in full swing, the movement of goods is at a higher demand than ever, and when goods do not arrive on time there are inherent costs due to congestion.

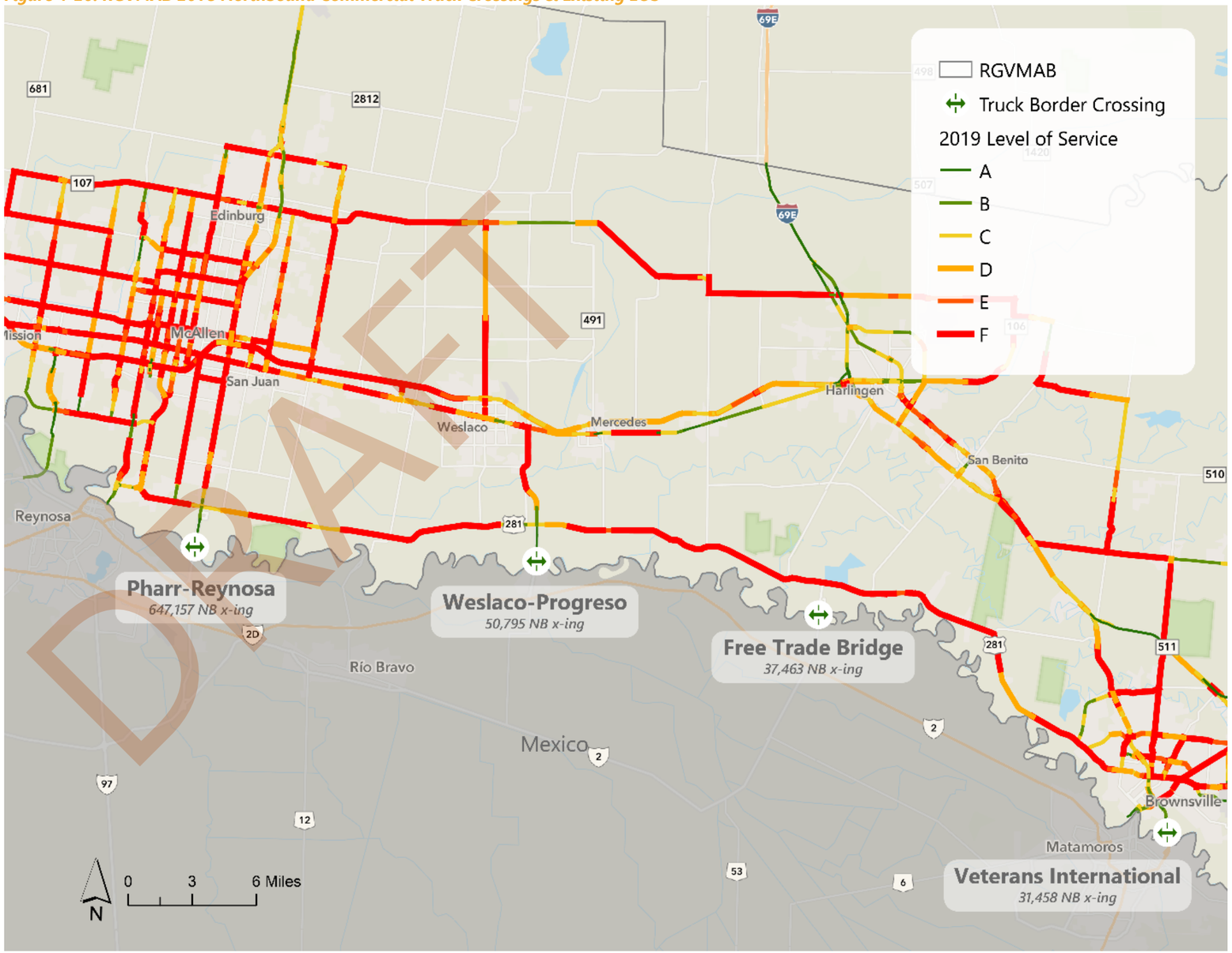
Figure 4-19: RGVMAB Freight Network LOS - 2019 Existing Conditions



The RGVMAB contains 11 border crossings (including roadway and railway infrastructure) that facilitate the movement of goods between the region and Mexico. Accordingly, it is important to understand current conditions of the RGVMAB's border crossing facilities as they heavily influence truck volumes in the region. Out of the 11 total RGVMAB border crossings, four allow commercial truck traffic: Pharr-Reynosa, Weslaco-Progreso, Free Trade Bridge, and Veterans International. All 4 facilities have seen an increase in truck volume since 2008, with Pharr-Reynosa (36%) outpacing the volume change seen throughout the Texas-Mexico border region, per the TxDOT-TPP Texas-Mexico International Bridges and Border Crossings Study.

Figure 4-19 presents the four border crossing facilities which contain commercial truck traffic, displaying each facility's 2018 northbound crossings and the RGVMAB freight network's existing LOS. While immediate border connections show relatively low congestion, surrounding roadway segments display high peak hour strain (LOS E and F).

Figure 4-20: RGVMAB 2018 Northbound Commercial Truck Crossings & Existing LOS



Transit

The RGVMAB contains an intricate and interrelated transit system comprised of several different service providers. To identify system strengths and weaknesses, it is critical to create an existing inventory of current transit provider's services in the region. This level of understanding helps inform the processes and methodologies used to create locally sensitive solutions which address existing gaps and duplications in service. Key takeaways from the RGVMPO 2045 MTP transit analysis include:

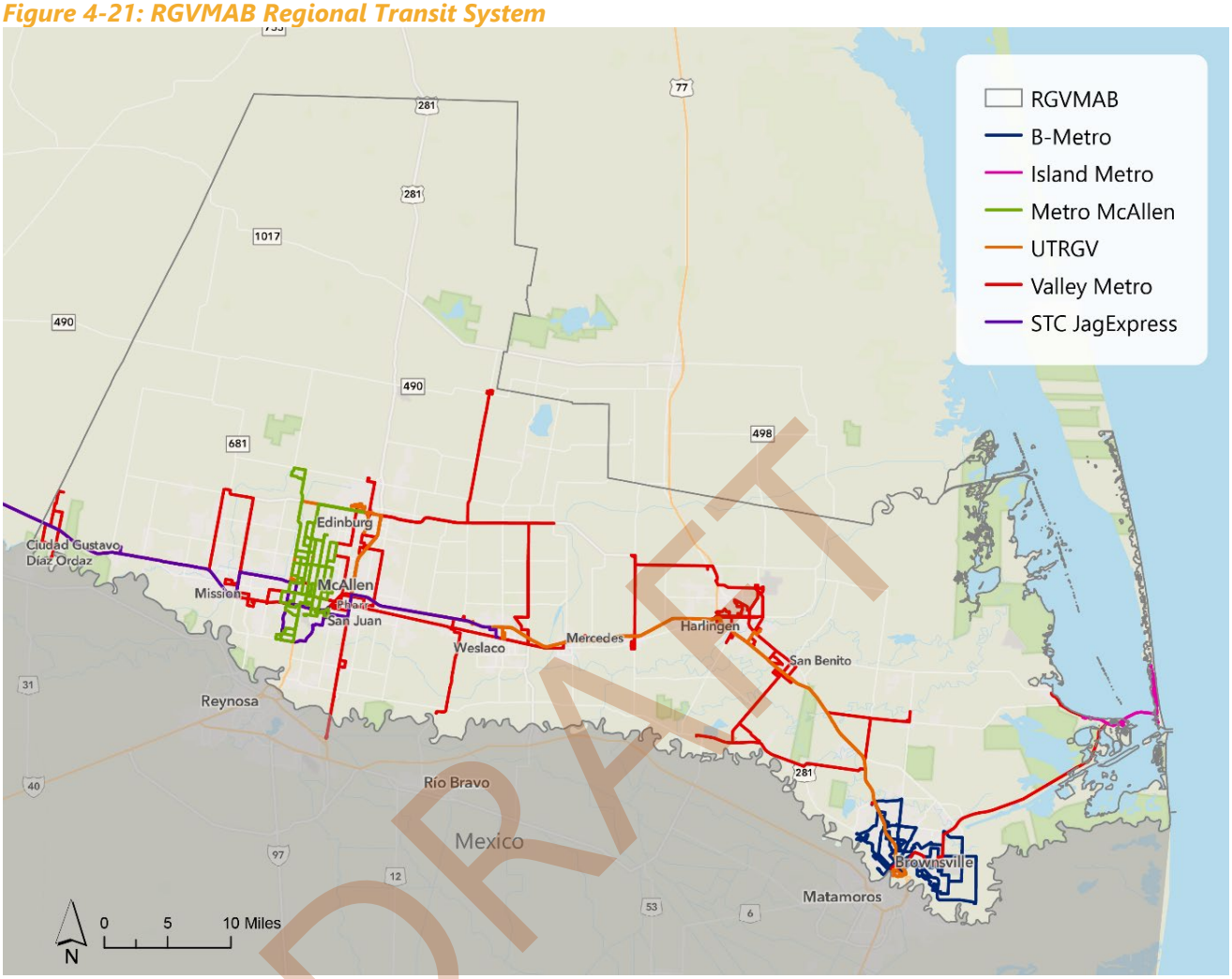
- 38% of the RGVMAB population are within a 0.25-mile walkshed to a regional transit route; roughly 60% of RGVMAB jobs are within the same walkshed
- Areas with higher transit propensity tend to include downtown districts, high density neighborhoods, medical centers, and shopping centers
- Transit need is spread throughout the region; however, the highest-ranking areas tend to be near regional transit coverage
- Transit connectivity to schools should be prioritized
- Transit gaps include northwest Edinburg, Hidalgo near the United States – Mexico border, Weslaco/Mercedes area, northwest of Harlingen near Primera, south of I-2 west of Harlingen, and northeast Brownsville near Cameron Park

The RGVMAB contains five major transit providers: B Metro, Island Metro, Metro McAllen, UTRGV Transit, and Valley Metro. Figure 4-20 displays current transit routes in the region.



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Figure 4-21: RGVMAB Regional Transit System



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Transit Potential, Need, Coverage, & Gaps in Service

TRANSIT POTENTIAL

The RGVMAB is a fast-growing region with expected sustained economic and population growth. Development and land use that has a mix of jobs, retail and housing indicate areas with high activity and potential for supporting transit use. One method for identifying transit potential is looking at locations that have the potential to support transit service. For the RGVMPO 2045 MTP, transit potential is measured through examining population and employment density, or transit propensity. Figure 4-21 displays the dispersion of transit propensity within the RGVMAB. Future growth areas regarding propensity can be identified in Figure 4-22. For both figures, TAZs with darker shading represent areas containing the highest potential for transit ridership.

Figure 4-22: Current RGVMAB Transit Propensity - 2019

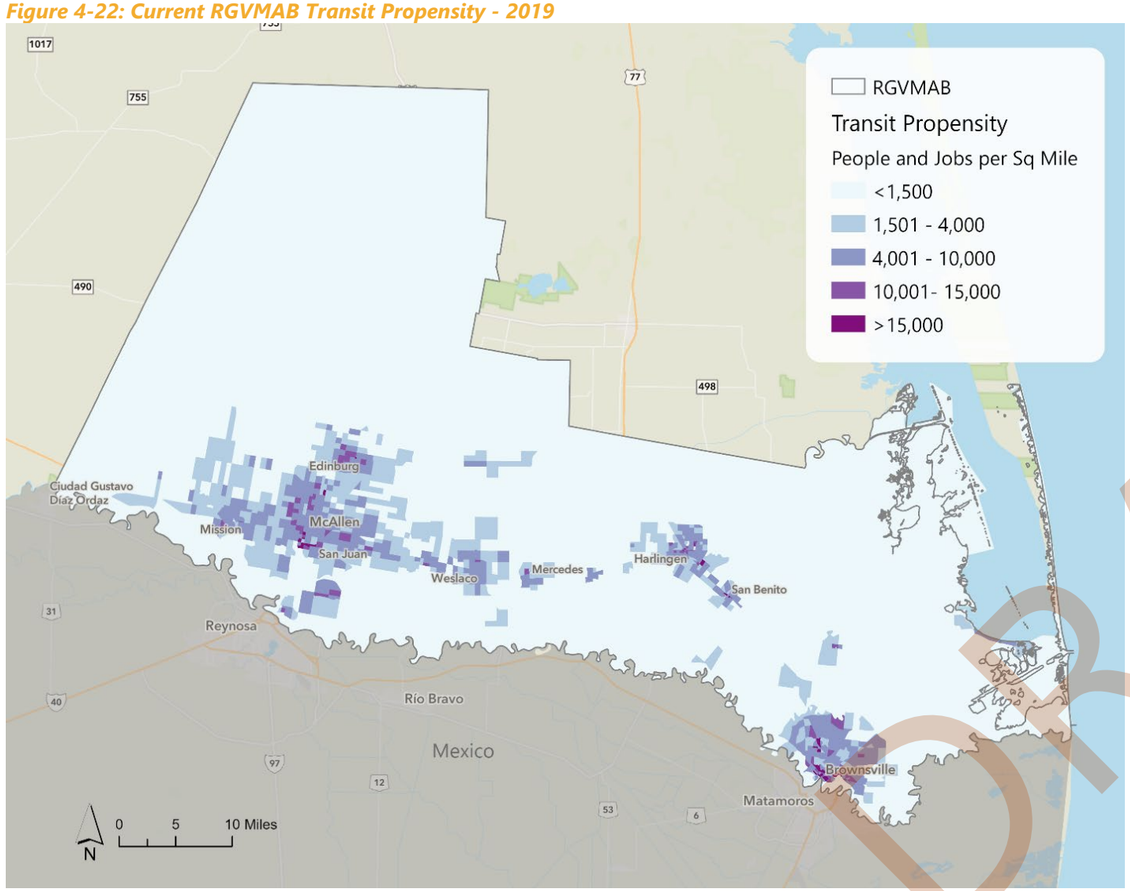
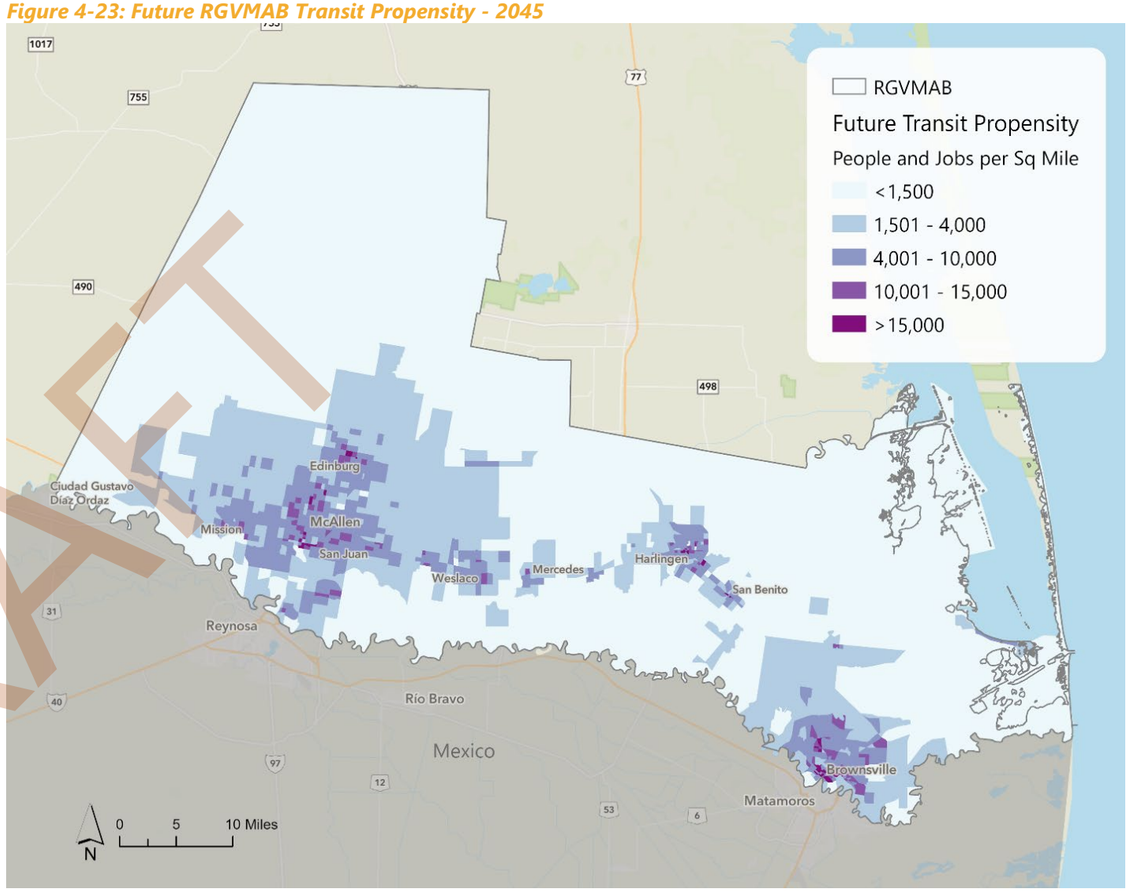


Figure 4-23: Future RGVMAB Transit Propensity - 2045



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TRANSIT NEED

An analysis of target transit riders can help to identify the locations which have a higher need for transit service and help to prioritize transit adjustments to better support the community. A target transit rider (TTR) includes the following demographic subgroups:

- Non-driving population (Youth under 18, and Elderly over 65)
- Population with LEP
- Minority populations
- Population with disabilities
- Population living in poverty
- Population without access to a personal automobile

It is generally assumed that individuals in these demographic subgroups are more likely to rely on public transportation for their mobility needs. Locating the areas in which these subgroups are concentrated can help ensure that the people with the highest need for services have access to reliable and effective transit. These demographic subgroups are considered as categories of transit need for the analysis. A graphic representation of the analysis of TTR for the region can be found in Figure 4-23.

The TTR analysis compares the percent of target transit riders relative to the total population and provides insight into where these populations are concentrated. To further understand the areas with greatest transit need, TTR subareas were developed. These TTR subareas were selected from the locations determined to have higher concentrations of target transit riders from the TTR analysis and are based on U.S. Census block group delineations. The process for selecting and comparing the relative need of the TTR subareas followed four steps:

- Identify potential TTR subareas
- Develop weights by rank for each needs category
- Develop concurrent category weighting for TTR subareas
- Generate weighted score in TTR subarea

A total of 104 TTR Subareas exist in the RGVMAB, displayed in Figure 4-24. These subareas provide more detailed information in the TTR analysis and allowed the project team to better understand where transit need exists within the RGVMAB.

Figure 4-24: RGVMAB Target Transit Riders as Percent of Total Population

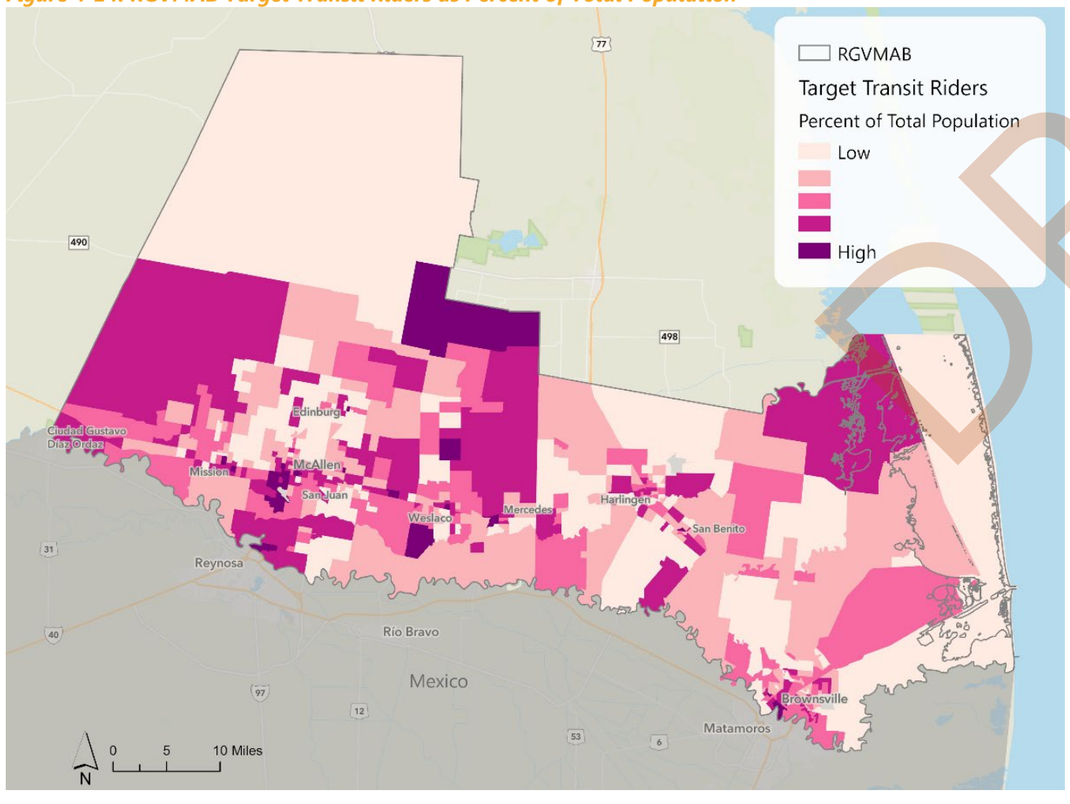
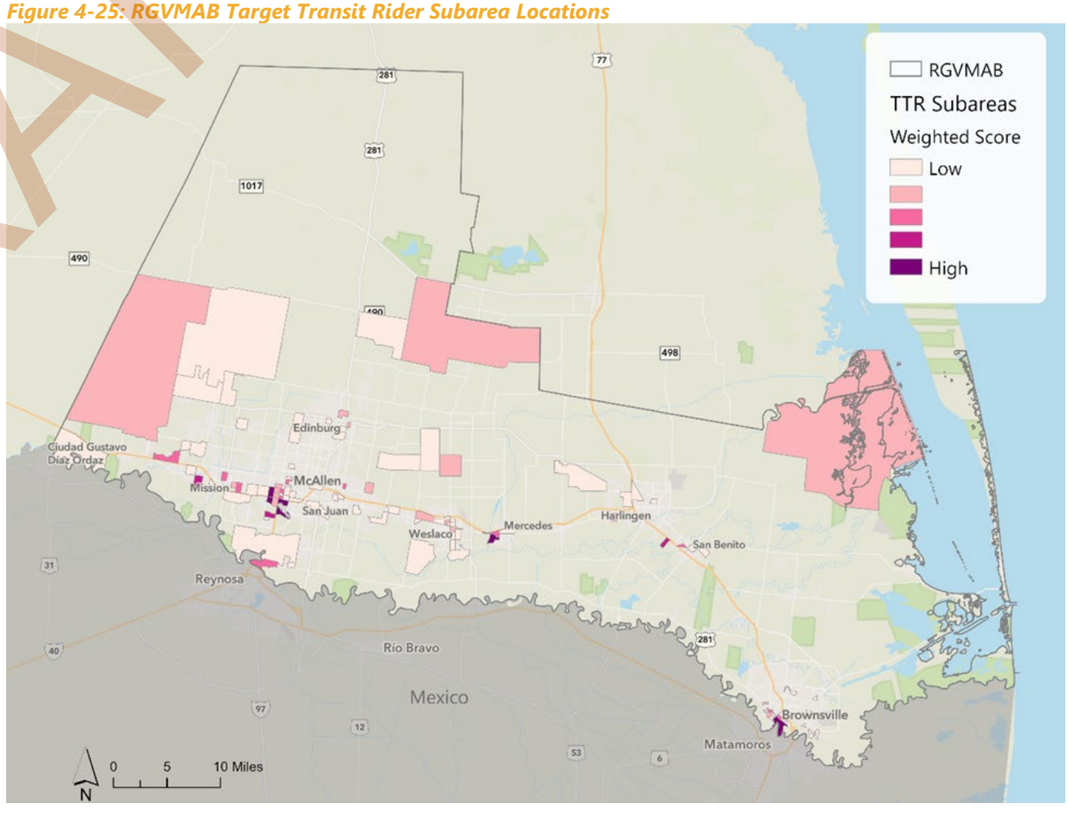


Figure 4-25: RGVMAB Target Transit Rider Subarea Locations



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To further understand transit need in the RGVMAB, the existing conditions analysis considered the accessibility to destinations, especially key destinations, by transit within the RGVMAB. Destinations data was collected using an ArcGIS Business Facilities Search Tool. A total of 32,149 businesses were discovered in the RGVMAB. From this total, roughly 44% could be categorized for this analysis. Accessibility to many amenities can ensure that residents who rely on transit are able to access the basic goods and services for daily life. Although it is important for transit riders to have access to many goods and services throughout their communities, some services are essential for "daily" life. There are 895 key destinations identified in the RGVMAB (Figure 4-25), including:

- Government Facilities: Community and Recreation Centers, Post Offices, Libraries, and Social Service and Welfare
- Hospitals and Medical Centers
- Major Grocery Stores
- Public Schools and Colleges

Table 4-5 breaks down key destination by category and percent currently covered by transit service.

Figure 4-26: RGVMAB Key Destinations

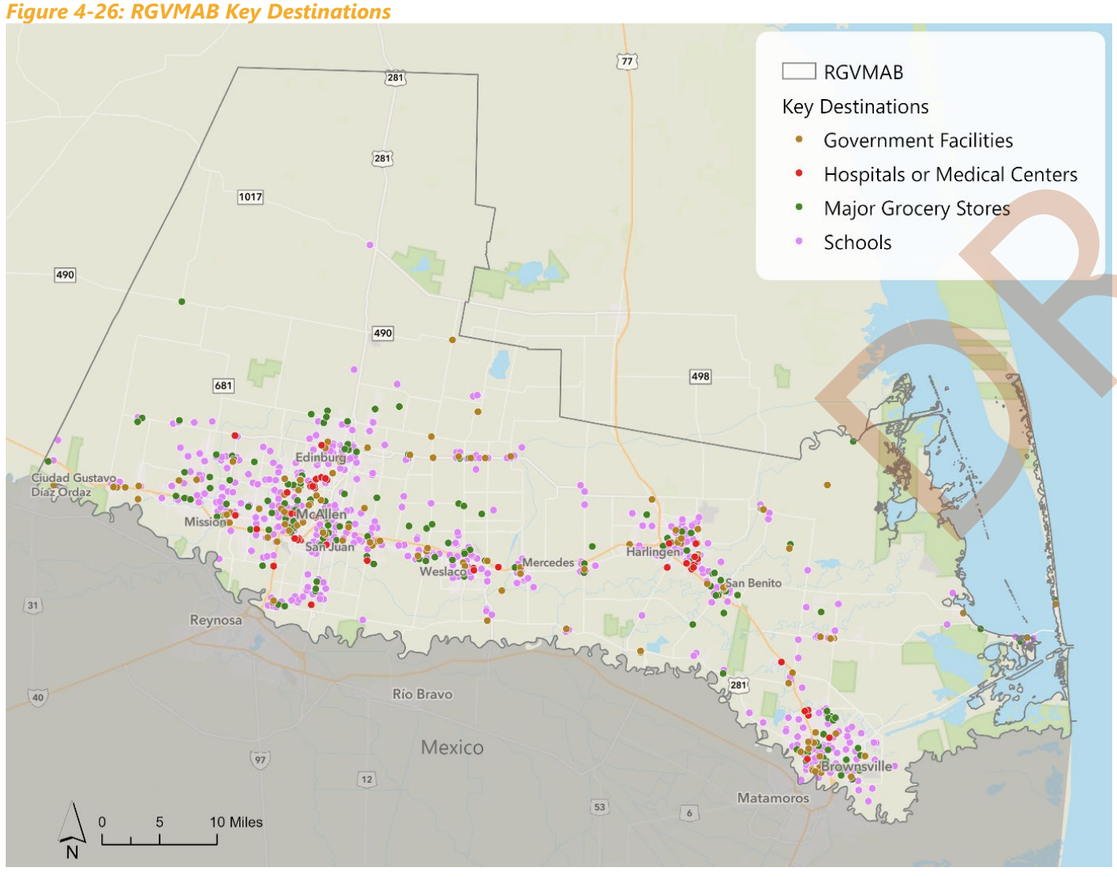


Table 4-5: Regional Transit Coverage of Key Destinations by Category

Key Destination Category	RGVMAB	Within Regional Transit Walkshed	% Covered by Transit
Government	122	97	80%
Hospitals/Medical	51	49	96%
Major Grocery Stores	169	130	77%
Schools	570	290	51%

SERVICE GAPS

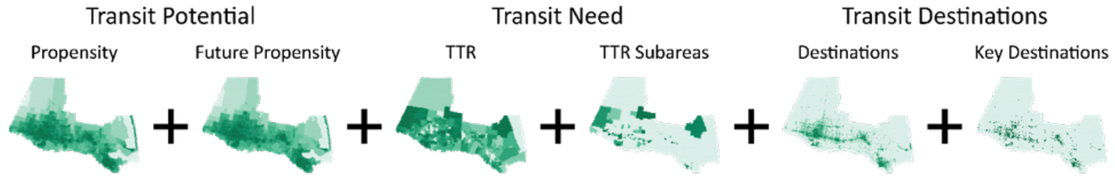
Locations of people and jobs which have the potential to support transit, populations in need of transit, and desirable destinations to be served by transit all indicate and contribute to the demand for transit in the region. Identifying locations that have high potential demand and inadequate transit supply can assist in the prioritization of future transit investments. Criteria from the previous sections were selected, standardized, and scored to provide a cumulative look at transit demand in relation to the transit supply. This comparison identifies gaps where demand is not met with current transit supply.

To make it easier to draw comparisons between these criteria the data was standardized. The first method for creating a standard unit of measurement was to develop one identical unit of geography for all of the datasets, which each have their own geography (TAZ, Census BG, Point Data). One method is to use hexagon grids to aggregate and compare data. This helps reveal patterns in the data and is suitable for both shape-based and point-based data. For this analysis, the region was divided into hexagons that are 0.25 square miles each.

To finalize the standardization process, the project team converted the criteria to a 100-point scale. Each measure was normalized through scoring assignments based on a scale of 0 - 100 for each hexagon. Once each measure was scaled from 0 -100, the measures were aggregated to generate final combined scores (Figure 4-26). Final scores were also normalized on a scale from 0 -100. This final combined score is a transit demand score which indicates the demand for transit based on the cumulation of these measures (Figure 4-27).

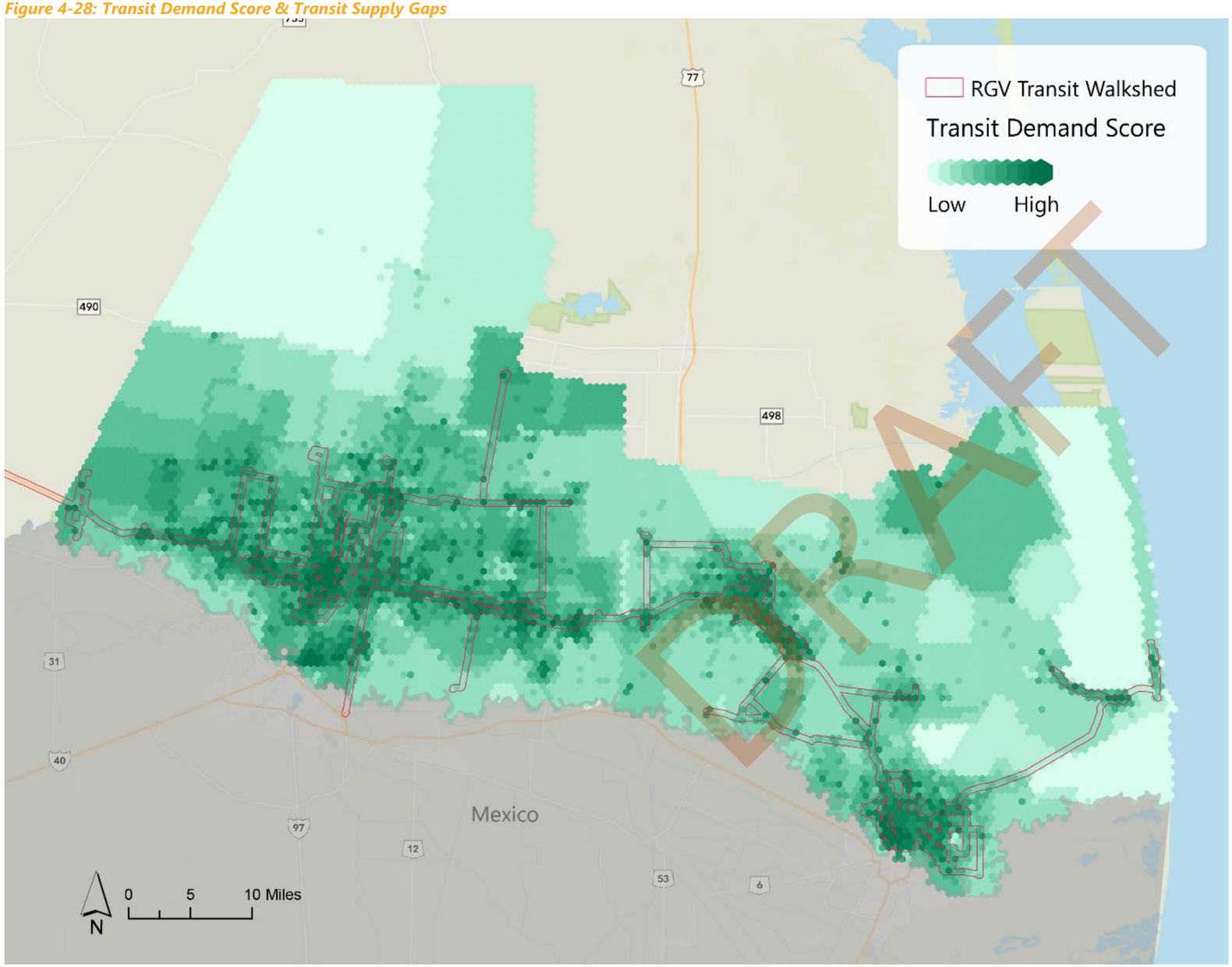
Gaps in transit service exist where demand scores are high and transit supply does not exist. This condition indicates areas with some combination of high transit potential or need, as well as destinations and key destinations that do not fall within the transit walkshed. Conversely, gaps also exist where transit supply covers areas with low transit demand scores; this is representative of transit service covering areas that may not need or use transit. This type of gap can be helpful when creating alternative transit scenarios as it informs decision-makers where inefficient service exists and can possibly be reallocated somewhere containing higher transit demand.

Figure 4-27: Development of Transit Demand Score



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Figure 4-28: Transit Demand Score & Transit Supply Gaps



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Active Transportation

The active transportation existing conditions and deficiencies analysis provides policy makers and the public with a better understanding of how the transportation network serves the mobility of persons relying on non-motorized transportation throughout the region.

The analysis reviewed three primary aspects (existing conditions, safety, and network analysis) in gauging active transportation network performance. These three aspects were then aggregated to create a gaps analysis which serves to inform the RGVMPO during the project prioritization process. The primary takeaways from the RGVMPO 2045 MTP active transportation analysis include:

- Opportunities for additional policy and program elements can be found in all major cities within the RGVMAB
- Crashes involving bicyclists and/or pedestrians happen most often during PM peak travel times
- Safety findings suggests that active transportation users bear a disproportionate amount of risk of injury or fatality
- Many urban areas have an array of low stress roadways due to gridded roadway networks
- Low stress connections between urban areas are limited
- Active transportation gaps were most substantial in Alton, Donna, Edcouch, and Harlingen



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Existing Conditions

The RGVMAB has a mixture of on-street and off-street active transportation facilities. As urban areas in the RGVMAB continue to densify and grow, walking and bicycling become an increasingly vital component of the transportation system.

EXISTING BICYCLE & PEDESTRIAN FACILTIES

Within the RGVMAB there are nearly 178 miles of on-street bike facilities, consisting of bike lanes, cycle tracks or shared lanes with either a shared lane marking or signage (Figure 4-29). Protected bikeways, which are the most comfortable for the broad range of people using the facility, make up about 2 miles or 1% of the total on-street bike facilities. Brownsville, Edinburg, Harlingen, McAllen, and Pharr make up the largest portion of urban bike facilities throughout the RGVMAB, while bike facilities outside of the urban centers comprise 14% of the total 292 miles.

EXISTING SIDEWALK FACILITIES

There are nearly 2,200 miles of sidewalk infrastructure and 114 miles of hike and bike trails within the RGVMAB (Figure 4-30). Sidewalk facilities in the RGVMAB are prevalent within urban areas. In addition to the quantity of pedestrian facilities, the sidewalk network coverage was calculated by selecting roadways within each city with a speed limit of less than 60 miles per hour (mph) because roadways with speeds at or above 60mph do not commonly contain sidewalks and are not conducive to walking.

Figure 4-29: RGVMAB Active Transportation Facility Summary Statistics



Biking

~300 Miles of Total Bike Facilities

114 Miles of Hike & Bike Trails

178 Miles of Bike Lanes & Cycle-Tracks

Walking

~2,200 Miles of Sidewalk

114 Miles of Hike & Bike Trails

Connections to Transit

16 Regional Transit Provider Connections

75% Transit Provider Connections with Poor Sidewalk Connectivity

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Figure 4-30: RGVMAB Existing Bicycle Facilities

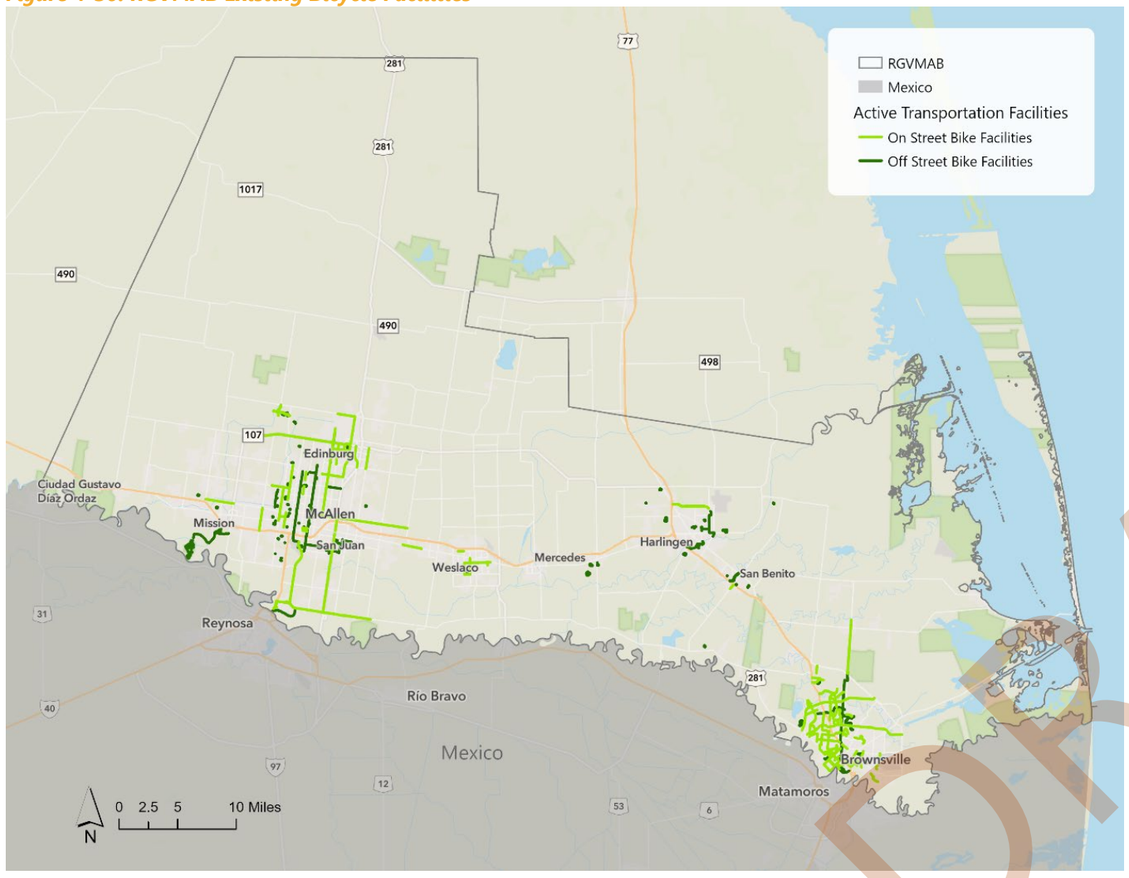
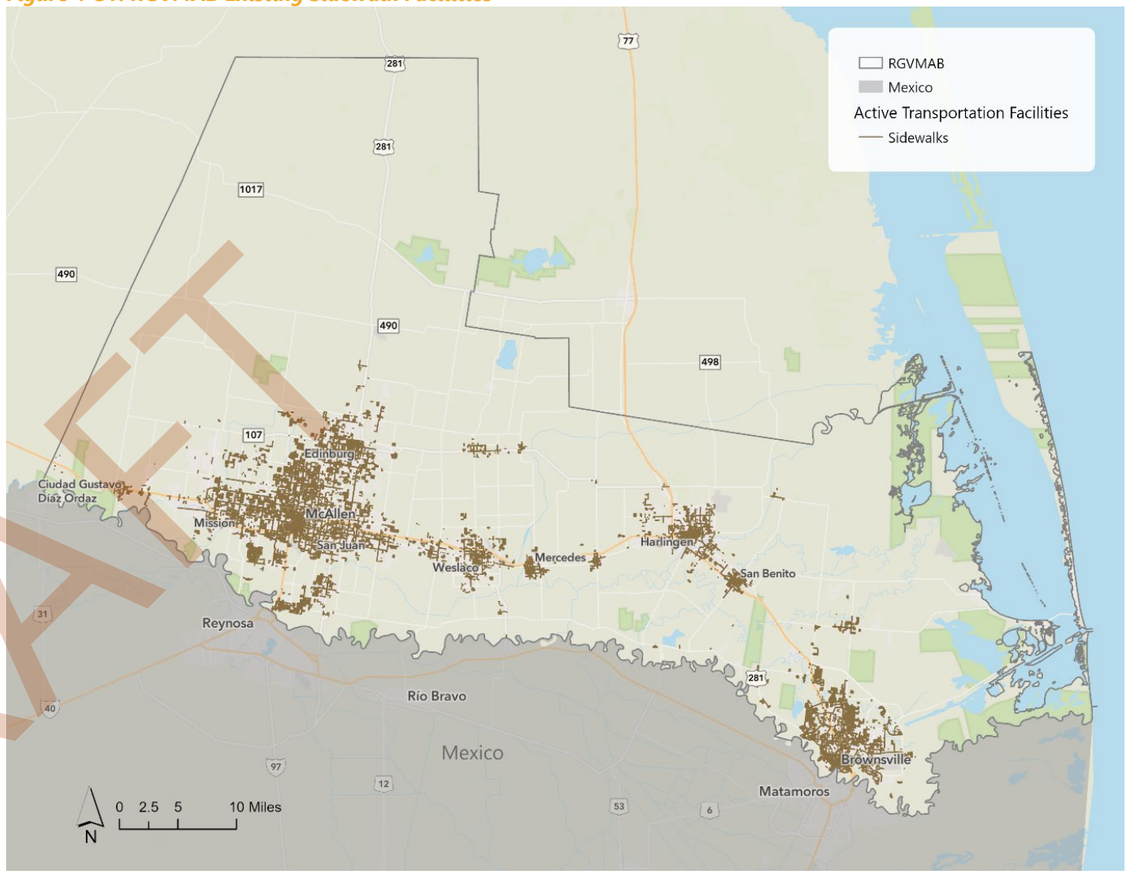


Figure 4-31: RGVMAB Existing Sidewalk Facilities



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Needs Analysis

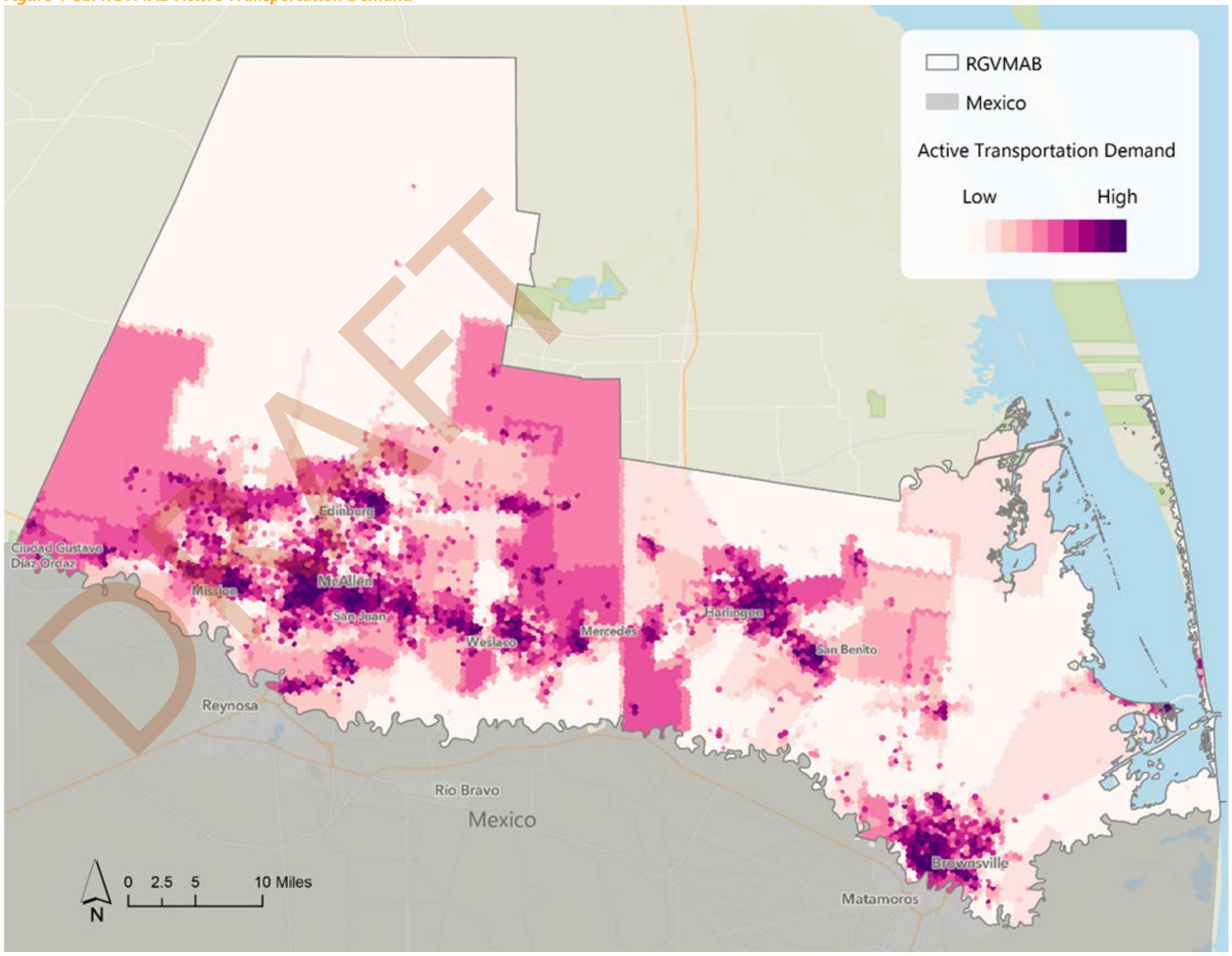
In addition to the review of the existing conditions for active transportation, a granular analysis was conducted to review the safety, level of stress, transit proximity, and expected travel patterns as part of the deficiencies, or needs analysis for non-motorized travel choices. These separate analyses informed the gaps analysis which allowed the project team to identify areas in need of active transportation infrastructure improvements. The following section details key findings.

ACTIVE TRANSPORTAITON GAPS ANALYSIS

To better understand where disparities within the RGVMAB occur between demand and supply for active transportation facilities, a gap analysis was conducted. Creating a comprehensive view of existing supply and demand for active transportation facilities allows gaps to be identified and discussed with the community, which provides solutions tailored towards community needs.

Current walking and biking facilities were overlaid with active transportation demand, based on several criteria covering populations more likely to use active transportation modes derived from the 2018 ACS. The criteria were standardized into hexagonal grids and then normalized to a 100-point scale to rank each hexagon, like the transit gap analysis. This final combined score indicates the relative demand for active transportation options occurring in each hexagon, based on the criteria. Figure 4-31 shows demand dispersed across the RGVMAB and will be used (along with the GIS data used to create the graphic) to inform decisions on active transportation improvements.

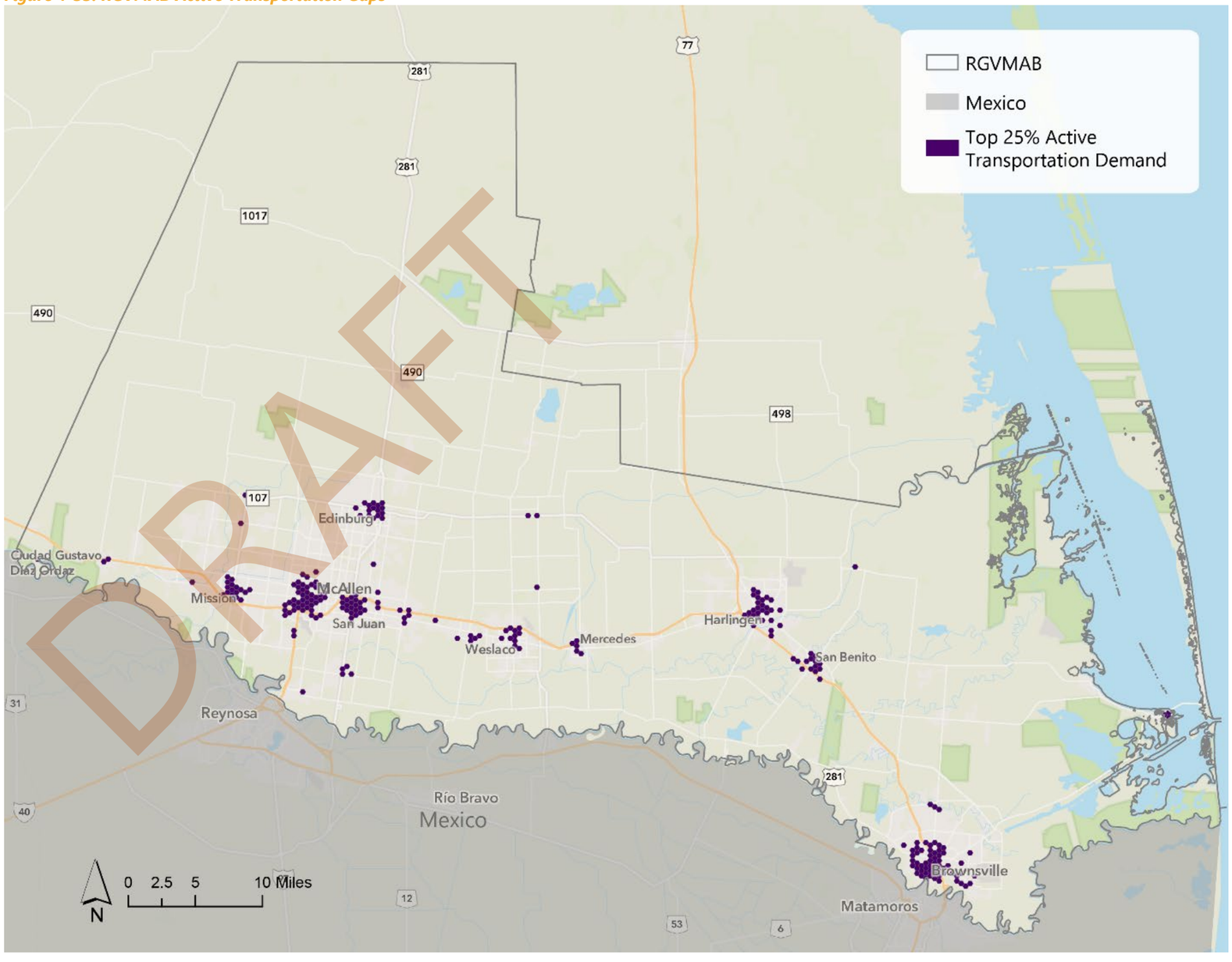
Figure 4-32: RGVMAB Active Transportation Demand



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Current supply of active transportation facilities (sidewalks, bike lanes, and hike & bike trails) were overlaid on the top 25% of demand score hexagons to identify where areas of high demand have insufficient facilities. Figure 4-32 shows the areas with the top 25% of active transportation demand. The analysis showed many gaps occurring in rural or semi-rural areas, many of which contain gridded street networks, but lack adequate sidewalk facilities.

Figure 4-33: RGVMAB Active Transportation Gaps



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System Safety

Transportation safety data analysis provides planners, policy makers, and the public with a better understanding of where critical safety issues are occurring in the transportation system and what factors may be contributing to regional crashes and crash rates. As such, safety data analysis is a critical component of regional transportation planning. The primary takeaways from the RGVMPO 2045 MTP safety analysis include:

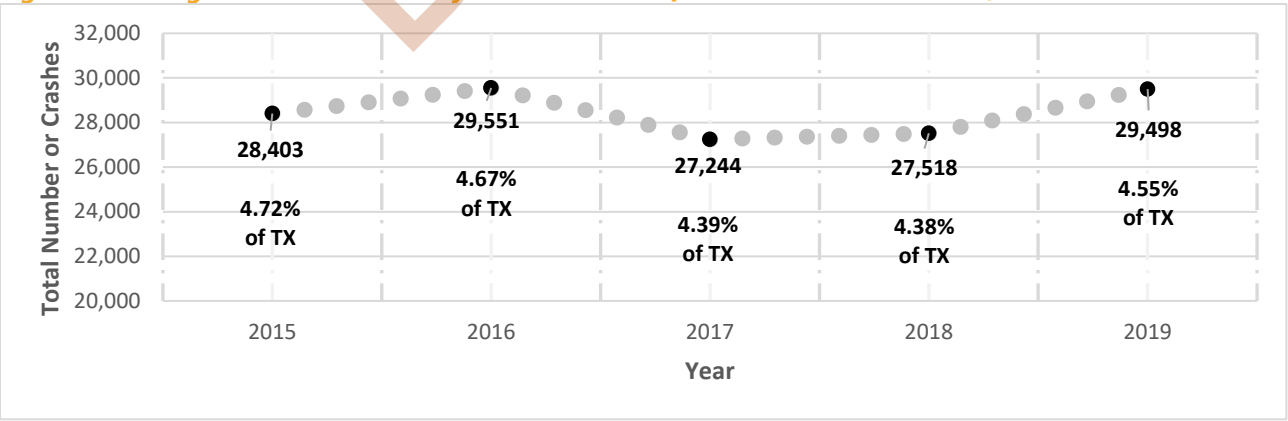
- Crash locations do not necessarily correlate directly with the amount of travel (i.e. VMT), as the crash rate did not consistently increase along with VMT over the five-year period
- The serious injury and fatality rates for the RGVMAB are all significantly lower in comparison to the Texas statewide average rates
- The total number of crashes involving pedestrians is around 2.41 times higher than the number of crashes involving cyclists
- The interstates and frontage roads within the region appear to have the highest crash rates and should be a priority when considering safety improvements

The following analysis on regional crash trends for the RGVMAB multimodal transportation network will help the RGVMPO prioritize projects by understanding where high priority intersections exist, and how to best implement safety enhancements. This information will also help the MPO understand and identify factors that contribute to crash totals and severity, which will in turn inform future planning efforts within the RGVMAB.

Regional Crash Trends

Between 2015 and 2019, a total of 142,216 crashes occurred within the RGVMAB. Over this five-year period, the total number of crashes per year has remained between the range of 27,000 to 30,000, with the largest single-year total (29,551) occurring in 2019. The region experienced an 8% decrease in the total number of crashes between 2016 and 2017 and a 7% increase between 2018 and 2019. Figure 4-33 summarizes the annual number of reported crashes in the region between 2015 and 2019.

Figure 4-34: Regional Crash Totals by Year & as a % of Total Statewide Crashes, 2015 - 2019

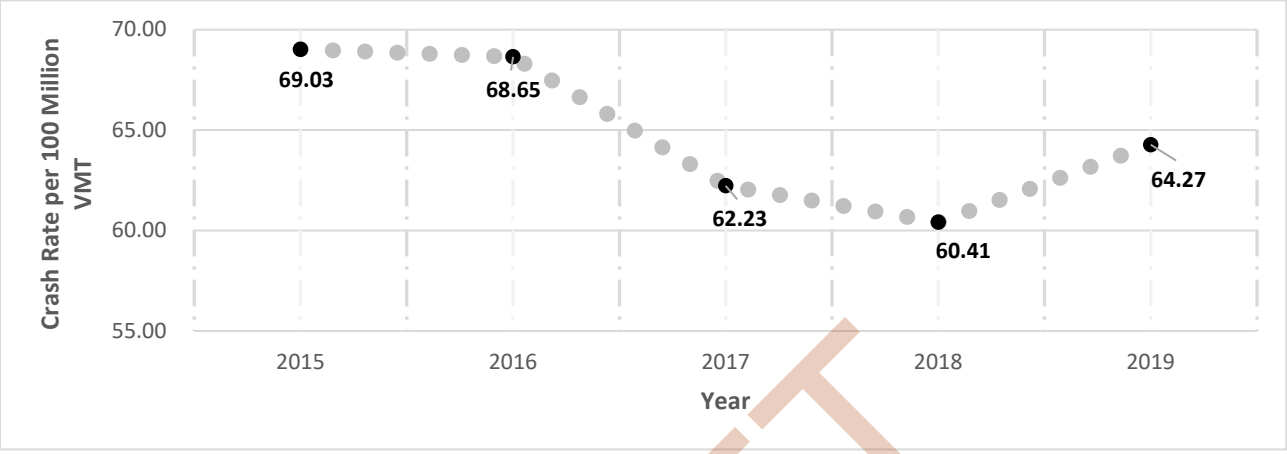


Crash rate is a metric that illustrates the ratio of crashes that occurred per vehicle miles traveled (VMT) within the region. This provides a method to normalize the gross crash count by including a consideration of roadway usage (i.e. VMT). Crash rates over the five-year period remain consistent, with a gradual decrease from 2016 to 2018 and a gradual increase from 2018 to 2019.

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Over this five-year period, VMT gradually increased from 22.5 million VMT to 25.2 million VMT. Figure 4-34 shows the crashes per 100 million vehicle miles traveled for the region between 2015 and 2019.

Figure 4-35: Regional Crashes per 100 Million VMT by Year, 2015 - 2019



Crash severity is a crucial aspect of each reported accident because crashes that result in fatalities or serious injuries represent a higher risk to life and safety, and understanding where there are concentrations of these types of crashes can illuminate opportunities for operational or design improvements. The RGVMPO 2045 MTP reviews crash data in three different ways – total crashes/crash rate, the total number/rate of crashes resulting in fatality, and the total number/rate of crashes resulting in serious injury – and compares the rolling averages of these values to those at the statewide level. The data represented in Table 4-6 demonstrates that, on average, only 1.38% of crashes in the region resulted in a serious injury, and just under 0.31% resulted in a fatality.

Table 4-6: RGVMAB Crash Totals & Rates by Year & 2019 5-Year Rolling Average

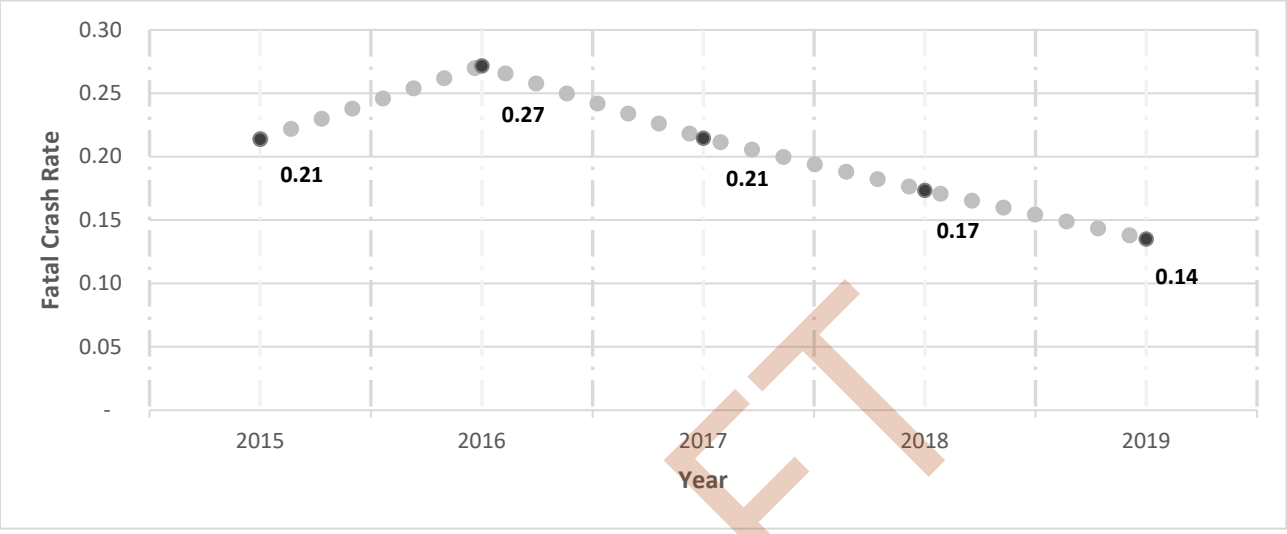
Measure	2015	2016	2017	2018	2019	2019 5 Yr. Rolling Average	% of Total
Number of Crashes	28,403	29,551	27,244	27,518	29,500	28,443.2	100%
Rate of Crashes per 100 million VMT	69.03	68.65	62.23	60.41	64.27	64.92	-
Number of Fatalities	88	117	94	79	62	88	0.309%
Rate of Fatalities per 100 million VMT	0.21	0.27	0.21	0.17	0.14	0.20	-
Number of Serious Injuries	384	421	398	338	427	393.6	1.384%
Rate of Serious Injuries per 100 million VMT	0.93	0.98	0.91	0.74	0.93	0.90	-

Though the region experienced its second highest total number of crashes in 2019 (29,551) compared to the other four years in the five-year period, 2019 also had the lowest number of crashes resulting in fatality (62). The five-year rolling average rate of fatal crashes per 100 million VMT in the RGVMAB over the reporting period was 0.20. A comparison to the Statewide five-year rolling average rate of fatal crashes (1.35) indicates that fewer crashes in the region have resulted in fatality compared to the rest of the State over the last five years.

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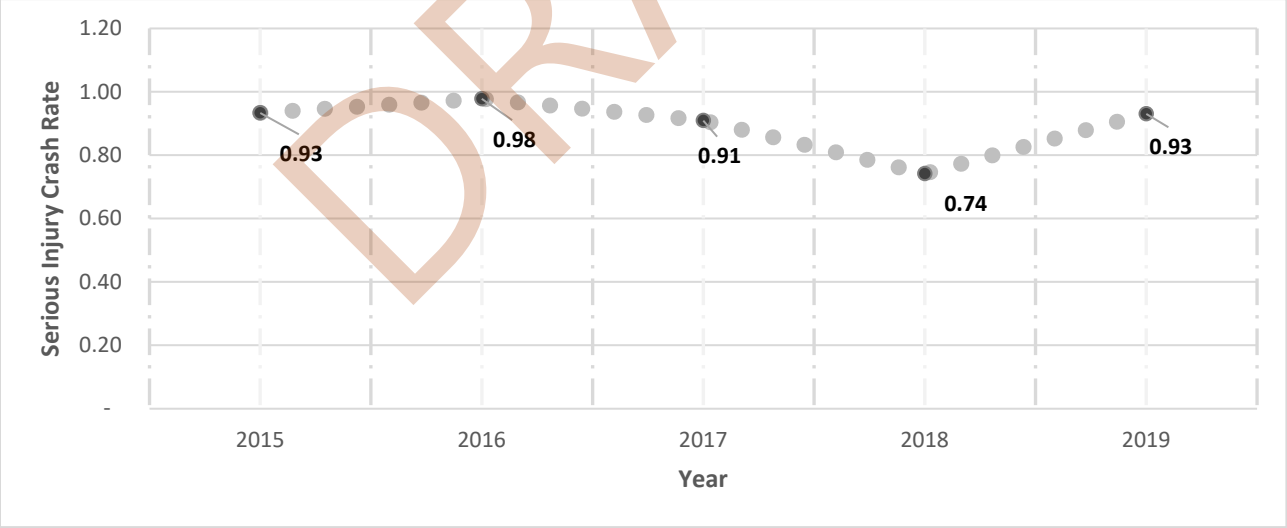
Figure 4-35 illustrates annual rates of fatal crashes and Figure 4-36 shows annual rates of serious injury crashes. It is worth noting that while the total crash rate over the five-year period has varied with an increase in 2019, the rate of fatalities has decreased over the same period.

Figure 4-36: Regional Rate of Fatal Crashes per 100 Million VMT by Year, 2015-2019



In contrast to the downward trend in fatality rates, the rate of serious injury crashes seems to follow a similar trend in variance over the five-year period as the total crash rate.

Figure 4-37: Regional Rate of Serious Injury Crashes per 100 Million VMT by Year, 2015-2019



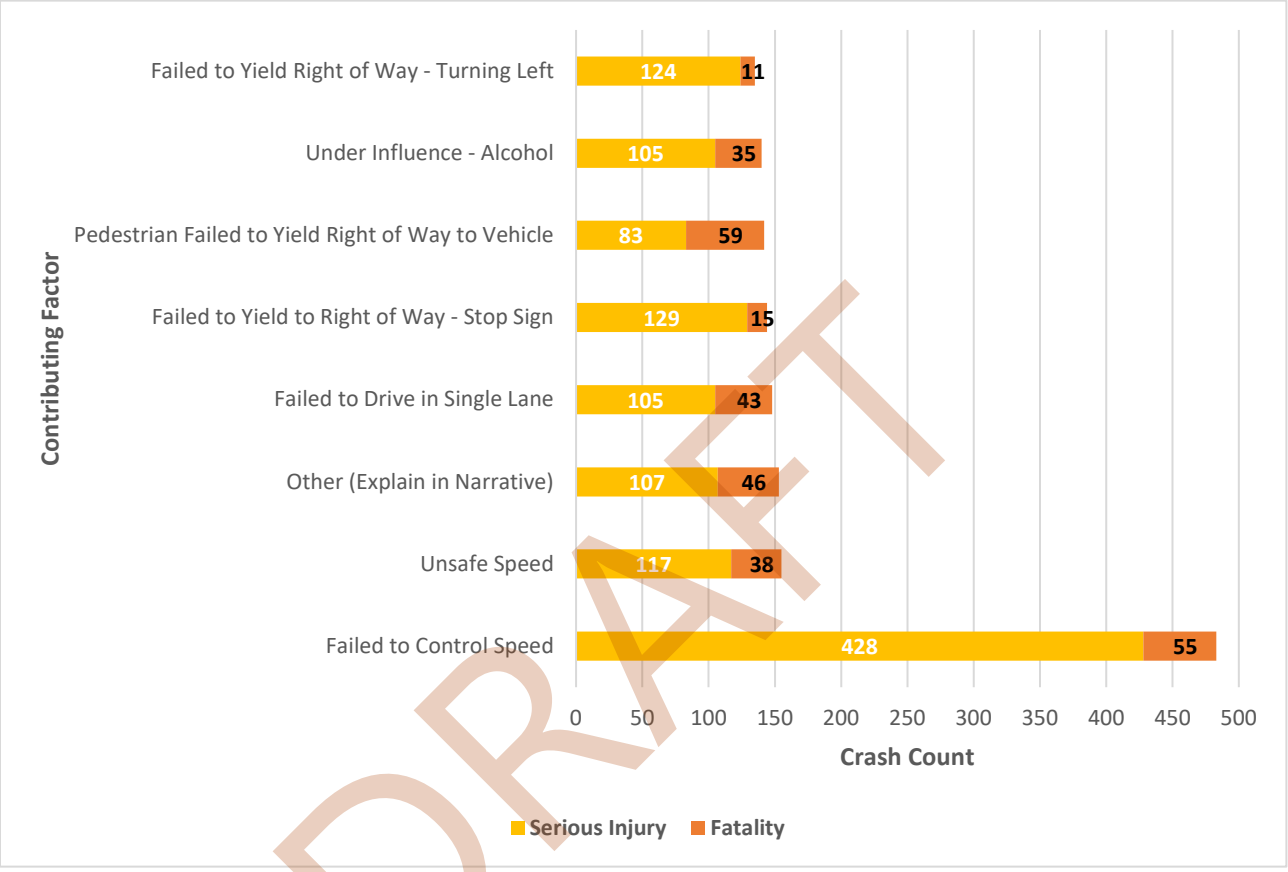
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Top Contributing Factors

It is vital to understand common factors that contribute to crashes, especially those resulting in serious injuries or fatalities. The importance of understanding these factors applies both to assessing location specific improvements as well as setting a framework to address safety needs where location data is not available, e.g. new roadways. Identifying the top contributing factors allows the RGVMPO and its planning partners to incorporate proven safety countermeasures and crash modification factors into the design and prioritization of future roadway investments in order to address or mitigate these contributing factors.

Of the top eight contributing factors, the top two (in terms of total crashes) involved speeding, while three others involved failing to yield the right of way. The top eight contributing factors are represented in Figure 4-37 and categorized by crash severity.

Figure 4-38: Number of Fatal and Serious Injury Crashes by Contributing Factor, 2015-2019



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FHWA has set out a variety of proven safety countermeasures, such as implementing a roundabout at an intersection with a high crash rate or installing walkways to increase safety for pedestrians on segments where pedestrian-related crashes were higher than others (Figure 4-36).

In some cases where the implementation of a proven safety countermeasure in response to a top contributing factor is not possible, a risk management approach can be used by applying crash modification factors. One example of this concept can be illustrated using the top contributing factor represented in Figure 4-37.

Failure to control speed might indicate that the improvement of a roadway should incorporate traffic calming techniques, however, in the case of interstates, traffic calming measures would be prohibited. Crash modification factors (CMF) become useful tools the goal to reduce the risk and/or severity of a crash where speeding was a factor. One such CMF would be to install cable rails in the clear zone for non-elevated portions of the interstate. A crash might still occur in this location, but the likely severity of the crash could be greatly reduced by the cable rail compared to the potential severity if no rail or concrete barriers were present.

Additionally, the consideration of safety countermeasures and CMFs is useful when scoring and comparing new roadways where no data is yet available. In these instances, the design and scope of the new roadway can be scored based on what safety countermeasures and CMFs it incorporates in comparison to the region's top contributing factors. A new commercial corridor that implements access management should ostensibly receive a better score than a roadway that allows any number of driveways, as the first example has a higher likelihood of improving regional safety performance because it directly addresses the top contributing factor of failure to yield.

Point scale and range for this scoring process is then a critical step to consider thoroughly and carefully to avoid creating a false sense of bias. Figure 4-38 shows the safety countermeasures promoted by FHWA, and further detail can be found on FHWA's safety page.[1] Additional information on CMFs can be found on the CMF Clearinghouse.[2]

Figure 4-39: FHWA Proven Safety Countermeasures[3]



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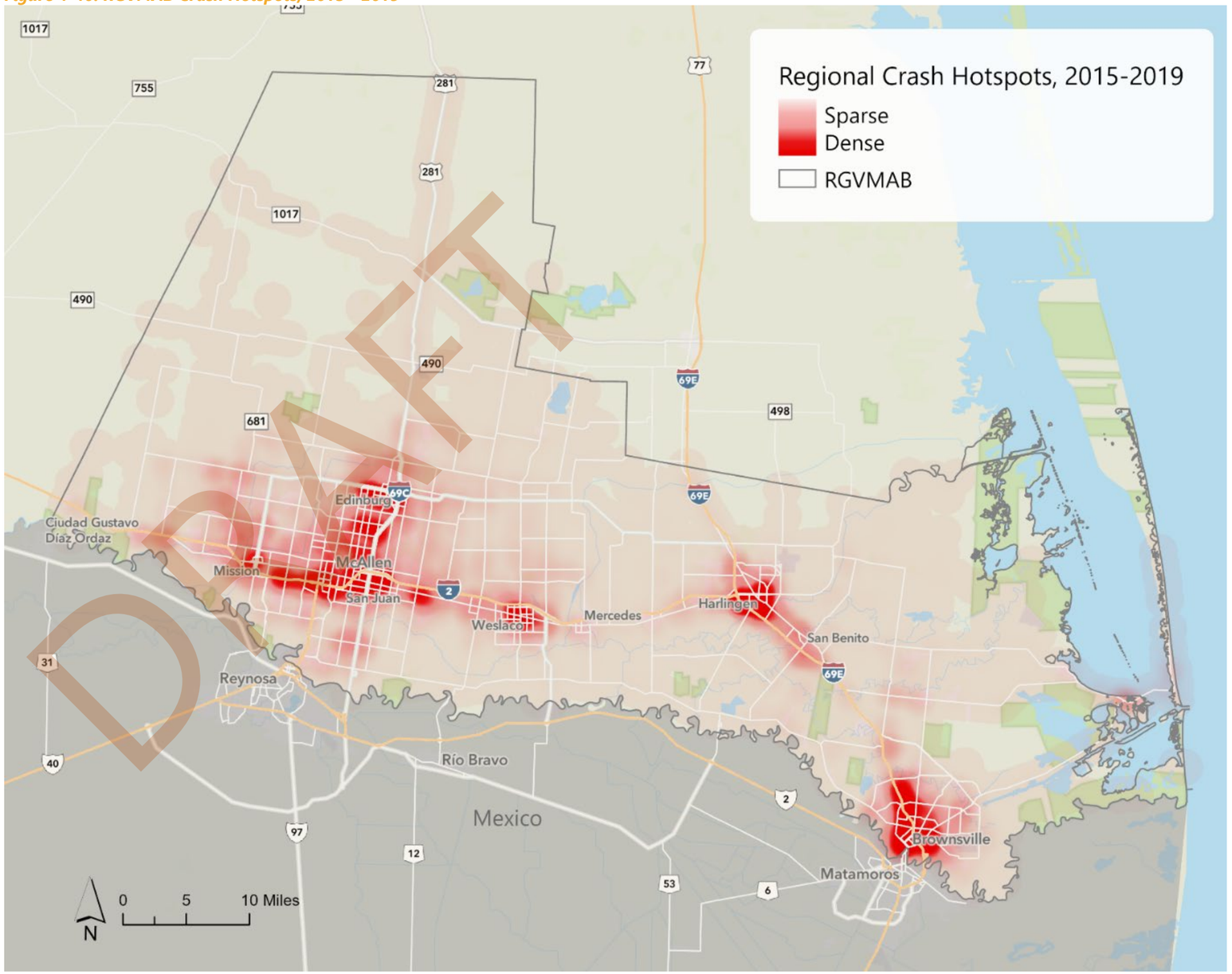
[1] https://safety.fhwa.dot.gov/provencountermeasures/fhwasa18029/
[2] http://www.cmfclearinghouse.org/
[3] https://safety.fhwa.dot.gov/provencountermeasures/

Crash Hotspots

Crash hotspots were identified within the RGVMAB through spatial analysis of intersections and roadway segments that experienced the highest number of crashes over the five-year period. Total crashes, crashes involving pedestrians, crashes involving bicyclists, and crashes resulting in serious injury or fatality are all considered in this analysis. Figure 4-39 displays crash hotspots identified through geolocation of the collected crash data.

Using the TDM network, a GIS points layer was generated to identify all intersections in the roadway network for the region. Along with crash point data, these intersection points were used to conduct a proximity analysis that associated intersection crashes to the nearest intersection. Texas crash data was filtered using attributes provided in the dataset that flagged crashes occurring at intersections. Once the crash data was narrowed down, the number of crashes for each intersection was calculated by assigning each crash to its closest intersection. Table 4-7 shows the intersections that experienced the most crashes between 2015 and 2019.

Figure 4-40: RGVMAB Crash Hotspots, 2015 - 2019



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Table 4-7: RGVMAB Top 20 Crash Intersection, 2015 - 2019

Intersection	Crash Count	Bicyclist Crashes	Pedestrian Crashes	Serious Injury Crashes	Fatal Crashes
E. Ruben M. Torres Sr. Blvd. & Old Hwy 77	106	0	0	24	0
E./W. Frontage Rd. (US-83) & S. Ware Rd.	86	0	1	1	0
Spur 206 & I-69E	80	0	2	1	0
E./W. Frontage Rd. (US-83) & S. Shary Rd.	79	0	1	1	0
E./W. Frontage Rd. (US-83) & S. Bryan Rd.	67	0	0	1	0
E. Tyler Ave. (Spur 206) & S. 15th St.	67	1	3	0	0
E./W. Frontage Rd. (US-83) & N. Cage Blvd.	66	0	1	1	0
E. Earling St./E. Nolana Loop & N. Cage Blvd.	61	0	2	1	0
E. Rueben M. Torres Blvd. & N./S. Frontage Rd. (IH-69E)	56	0	0	1	0
W. Alton Gloor Blvd. & N./S. Frontage Rd. (I-69E)	54	0	0	0	0
W. Price Rd. & N./S. Frontage Rd. (I-69E)	54	0	0	0	0
Ed Cary Dr. & N./S. Frontage Rd. (I-69E)	53	0	0	0	0
W. Wisconsin Rd. & S. McColl St.	53	1	0	2	0
US-83 & Jackson Rd.	50	1	1	1	0
E./W. Frontage (US-83) & S. 10th St.	47	1	3	2	0
Wilson Rd. & I-69E	46	0	0	0	0
W. Ferguson Ave. & N. Cage Blvd.	46	0	0	0	0
TX-54-SPUR & I-69E	45	1	0	1	0
Primera Rd./TX-499-Loop & N. 77 Sunshine Strip	44	0	0	1	0
BUS-83 & Alamo Rd.	43	0	0	0	0

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Active Transportation Safety Trends

Over the course of the five-year period, a total of 2,238 active transportation (AT) crashes occurred in Cameron and Hidalgo Counties. 71% of these crashes involved pedestrians, while 29% involved bicyclists. In all, AT crashes accounted for only 1.6% of all crashes in the RGVMAB (involving all modes of transportation) for the same five-year period. Table 4-8 shows a breakdown of total crashes involving pedestrians or bicyclists.

Table 4-8: RGVMAB Active Transportation Crashes & Crashes by Mode

Crash Types	Crash Count	Percent of All AT Crashes	As %of Total Crashes (All Modes)
Pedestrian Crashes	1,582	71%	1.1%
Bicyclist Crashes	656	29%	0.5%
Total	**2,238**	**100%**	**1.6%**

Figure 4-40 represents a heat map that illustrates concentrations of AT crashes within the region. The map indicates that higher densities of AT crashes occur in the larger urban areas, correlating with the levels of traffic in these areas.

Table 4-9 summarizes the five-year counts and percentage of active transportation crashes in comparison to regional totals for all crashes. While non-motorized crashes comprise only 1.57% of all crashes for this period, they comprise 26.14% of all fatal crashes

Table 4-9: Comparison of Five-Year Crash Totals; Active Transportation vs. All Users, 2015-2019

Measure	All Users	Active Transportation	Percent of Measure
Crash Count	142,216	2,238	1.57%
Fatalities	440	115	26.14%
Serious Injuries	1,968	248	12.60%

Like regional crashes, the project team identified specific intersections that experienced the most AT crashes over the five-year period to further fine-tune any potential solutions to its active transportation safety issues and distribute resources more efficiently. Table 4-10 displays the top AT crash intersections within the RGVMAB.

Figure 4-41: RGVMAB Active Transportation Crash Hotspots

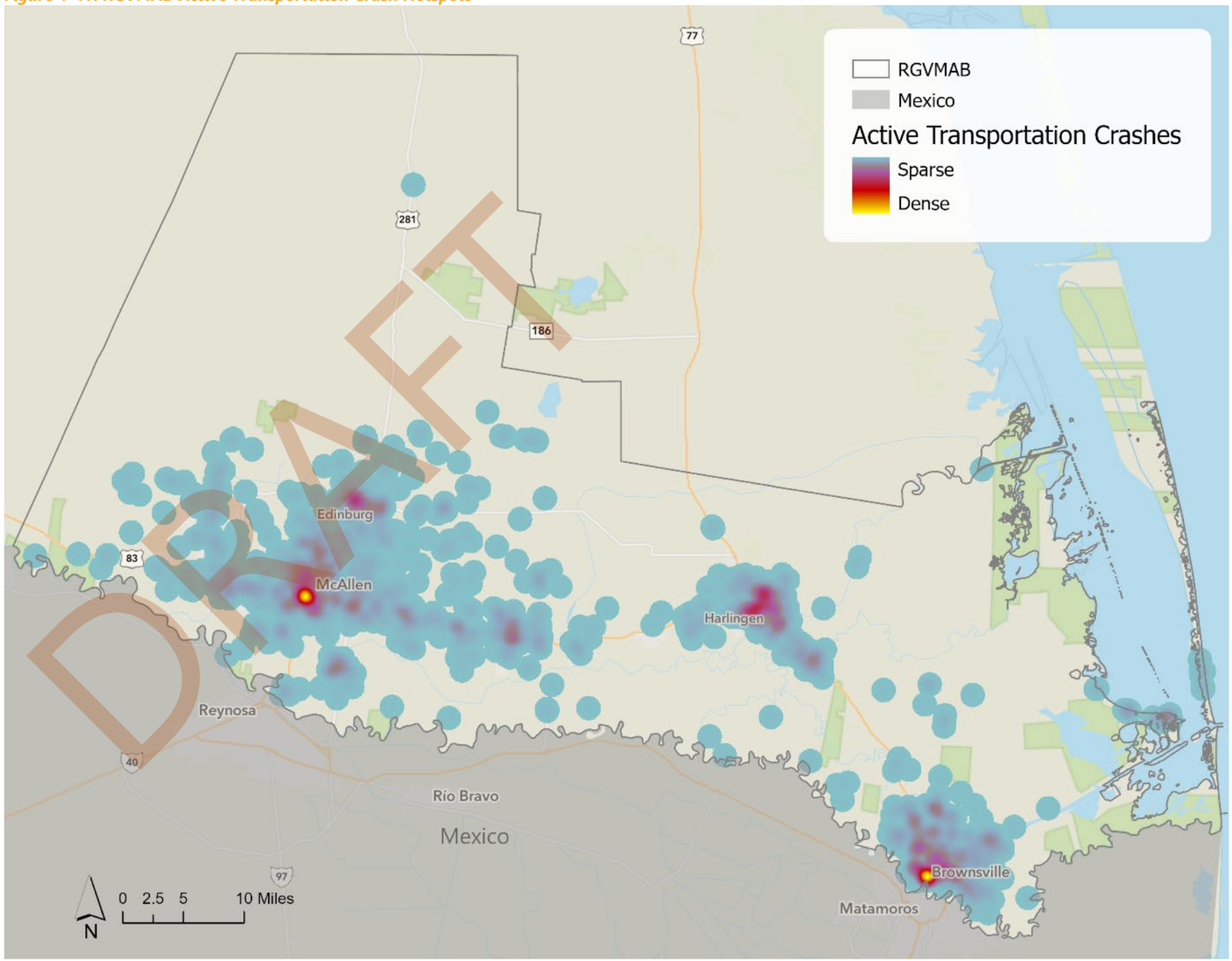


Table 4-10: RGVMAB Top Active Transportation Crash Intersections

Intersection	Location	Crash Count
International Blvd. (SH 4) @ Southmost Blvd. (FM 1419)	Brownsville	11
Spur 206 @ I-69E	Harlingen	8
Jackson St. (FM 3362) @ W. University Dr. (SH 107)	Edinburg	6
Paredes Line Rd. (FM 1847) @ E. Alton Gloor Blvd. (FM 3248)	Brownsville	6
16th St. @ W. US Business 83	McAllen	6
15th St. @ W. US Business 83	McAllen	6
Sugar Rd. @ W. University Dr. (SH 107)	Edinburg	6
N. 10th St. (SH 336) @ Pecan Blvd. (SH 495)	McAllen	5
N. Ware Rd. (FM 2220) @ Pecan Blvd. (SH 495)	McAllen	5
I-69E @ Boca Chica Blvd. (SH 48)	Brownsville	5
Beaumont Ave. @ S. 15th St.	McAllen	5
E. 12th St. @ US Business 77	Brownsville	5
Spur 206 @ US Business 77 (S. 77 Sunshine Strip)	Harlingen	4
N. 7th St. @ US Business 77 (N. 77 Sunshine Strip)	Harlingen	4
E. 7th St. @ E. Jackson St.	Brownsville	4
SH 100 @ Padre Blvd. (PR 100)	South Padre	4
10th St. (SH 336) @ W. US Business 83	McAllen	4
N. McColl Rd. (FM 2061) @ Nolana Ave. (FM 3461)	McAllen	4
1st St. @ Jackson St.	Harlingen	4

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SUMMARY ON ANALYSIS OF MULTIMODAL NEEDS

The findings of the RGVMAB multimodal needs assessment reflect the current state of the region's transportation system and show projections where possible for the future of its various components. Overall, the region is growing and will continue to do so over the next 25 years. This growth will impact each aspect of the regional transportation network, requiring the community to invest in transportation policy and projects that address the infrastructure, land use, and socioeconomic changes that will arise in the coming years. The analysis summarized here provides a holistic understanding of the regional transportation system encompassing the community's roadways, transit and active transportation systems, freight network, and socioeconomic landscape. This framework provides data-driven insight into the needs of the community and informs the review and consideration of investments and strategies that are laid out in subsequent chapters of the RGVMPO 2045 MTP, specifically Chapter 5, Strategies for Regional Mobility.



5 STRATEGIES FOR REGIONAL MOBILITY

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As a venue for continuous, cooperative, and comprehensive planning, the RGVMPO helps review and coordinate strategies, services, and investment projects that address regional goals and priorities for mobility. This chapter reviews technology, coordination, and policy strategies. It is intended as a toolkit of methods to address and improve regional mobility and introduces how the RGVMPO reviews and adopts infrastructure investment projects for the Metropolitan Mobility and Rehabilitation Program and the Transportation Alternatives Set-Aside Program.

REGIONAL MOBILITY STRATEGIES

This chapter is intended to serve as a toolkit and reference point of current and possible strategies to address several factors, summarized here as regional mobility. Beyond the implementation of the planning initiatives, goals, and objectives discussed in Chapter 2, this toolkit provides a review of strategies beyond infrastructure investment and capacity projects that can, in concert, help provide scalable alternatives that address regional issues.

Additionally, due to inherent fiscal constraints involved in infrastructure investment, it is critical to understand and implement strategies including available technology, coordination, policy, and alternative modes of travel.

The following sections provide a comprehensive description of possible strategies beyond the fiscal constraints of typical infrastructure investments and provides a broader palette of methods for meeting the RGVMAB transportation needs discussed in the Multimodal Needs Assessment (Chapter 4).

TECHNOLOGY STRATEGIES

The following section details strategies to address mobility needs related to Transportation and System Management Operations (TSMO). These strategies focus on the utilization of up-to-date transportation facility technologies that aim to help the RGVMPO meet its mobility needs.

Intelligent Transportation Systems

Transportation infrastructure is no longer limited to concrete pavement and asphalt. Recent improvements in operations and data collection have led to digital controls and integrated computer networks that require maintenance and management.

Opportunities for advancing the RGVMAB's electronic infrastructure comes in the form of Intelligent Transportation Systems (ITS), which includes technologies that improve transportation safety and mobility by integrating advanced communications into infrastructure and vehicles. The RGVMPO as an entity, serves as a stakeholder giving input on the Lower Rio Grande Valley Regional ITS Architecture and works in close coordination with the TxDOT Pharr District office as they implement, maintain, and record/monitor ITS performance in the region. The following electronic infrastructure has the potential to provide the RGVMAB with a favorable return on investment in terms of improved safety and mobility for the transportation network.



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Ramp Meters

Ramp meters are traffic signals installed on the entrance ramps of freeways that alternate between red and green light signals to control the flow of vehicles as they enter the freeway facility. This infrastructure allows for more controlled merging movements and could therefore provide benefit on major roadway entrance ramps where merging has proven to be particularly dangerous.

Traveler Information Systems (TIS)

TIS is a strategy that involves making information about trip departures, routes, and travel time readily available to travelers and can be used for a variety of modes of transportation. This can be accomplished via websites, telephone hotlines, television, and radio, and particularly with dynamic messaging signs, which are digital signs that are installed along roadways and are updated with real-time travel information. Examples of the latter can be found on I-2 near the I-69C junction in Pharr/San Juan.

Signal Preemption for Emergency Vehicles

Signal preemption is a technology that allows emergency vehicles to change signal cycles, allowing them to advance through traffic lights efficiently and safely. A preemption device is located on mast arms and detects/alters signal cycles when emergency vehicles approach the intersection. This technology is most effective along roadways in which emergency vehicles will typically need to travel longer distances, or intersections where minor arterials/roads connect to larger road classifications. The end goal for signal preemption is to reduce overall response rates for emergency vehicles.

Video Detection (Non-Pavement-Invasive Detection)

Video detection is a form of non-pavement-invasive detection, also known as a traffic detector, which allows for the collection of traffic information, such as vehicle presence, volume, speed, and occupancy. Video detection provides a method of data gathering that does not require invasive procedures to be carried out on the pavement and thus has little to no impact on pavement resilience. This detail of information allows for more informed decisions when making infrastructure improvements.

Traffic Signal & Intersection Improvements

Roadway users encounter traffic control signage and intersection signals on nearly every route they travel. While the primary function of intersection traffic control is to improve safety at intersections, it is also often a significant source of delay. Improper signage and poor signal timing result in unnecessarily long queues and impacts the reliability of the transportation system. Improving signage, signal timing, and equipment is a cost-effective way to facilitate traffic flow along a corridor.

This strategy has been implemented in Hidalgo County through expenditure of $1 million in Category 7 funding to address operational improvements. The funds were used to purchase new control boxes, clocks, etc. for McAllen, Pharr, Mission, and Edinburg in a regional attempt to address light synchronization. Similar efforts have also been undertaken in the Brownsville area to improve intersections for pedestrians along wide or highspeed corridors, such as installing median pedestrian islands on Boca Chica Blvd. to make conditions for pedestrians safer.

The RGVMPO continues to work with its planning partners to identify corridors, which would benefit from traffic signal and intersection improvements and to prioritize projects.

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Traffic Signal Optimization



Traffic signal optimization is critical to managing congestion and traffic flow. The timing and phasing of signalized intersections should be reviewed periodically, especially in areas of the region experiencing rapid development or increased commercial activity. Traffic signals can also be coordinated along a corridor or throughout an entire system. As traffic volumes increase, signal coordination can be used to optimize high priority traffic corridors and increase the throughput of critical thoroughfares.

Adaptive signal control, which adjusts the timing of traffic lights based on real-time travel conditions, can also provide significant relief to congested corridors and cut costs associated with traffic signal timing data collection and computation.

Significant investments were recently made in the Brownsville area to improve traffic flow by setting aside a dedicated portion of Category 7 for CMP related improvements. This type of improvement is far less expensive for the MPO than a build or capacity-oriented solution for solving congestion issues. While success is not yet quantifiable, the RGVMPO received feedback from the public who have praised the installation of adjacent sidewalks, pushbuttons, and crosswalk signals related to the traffic signal upgrades.

Traffic Data Collection



As transportation technology grows increasingly sophisticated, obtaining the amount of data required by new traffic optimization interfaces presents significant challenges to due to fiscal constraints. Automated traffic data collection creates an opportunity for transportation management agencies to receive a continuous supply of traffic data at a low cost. Because automated traffic data collection gathers data in real time, it facilitates many of the demand responsive TSMO strategies discussed earlier in this section (such as traffic signal optimization). New types of traffic data collection, such as Bluetooth and Wi-Fi detectors, are particularly appealing due to their lower operational and maintenance costs compared to in-road loop detectors. These types of detectors have the added benefit of being able to gather traveler information beyond traditional roadway vehicles to include bicycle and pedestrian roadway users.

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Emerging Technologies

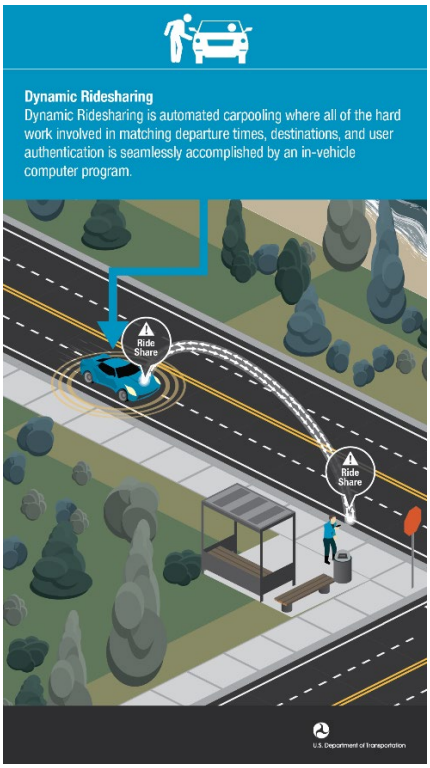
In addition to the implementation of some of the ITS capability mentioned above, the emergence of new technologies and the adoption of policies and legislation will provide future decision makers with a new set of strategies to consider.

Connected & Autonomous Vehicles

Connected and autonomous vehicles (AV) can be integrated into existing ITS architecture and could potentially improve mobility, traffic operations, and safety. Automated public transportation could help reduce congestion and the space needed to accommodate single-occupant vehicles, while also potentially improving efficiency and reducing fatalities and severe injuries due to fewer drivers on the road. This technology could also benefit freight and economic growth since improved travel times and traffic operations could have positive impacts on the economic vitality of rural and urbanized areas within the region. The National Association of City Transportation Officials (NACTO) provides further advice and guidance about AV in their "Blueprint for Autonomous Urbanism". Similarly, the Society of Automotive Engineers (SAE) and the National Highway Traffic Safety Administration (NHTSA) are working to provide guidance for safety and programming levels of automation. Staff of the urban area can help the development and deployment of these technologies throughout the region by beginning discussions on policy and land use, as well as keeping its planning partners informed about developments in autonomous vehicle technology.

Smartphone Applications

As previously mentioned, TNCs and rideshare applications for smartphones are already influencing how people are choosing to commute. Uber recently unveiled (February 2018) their new "Express Pool" service in the Washington D.C. Metro Area. This new service uses traffic analytics and routing software to reduce backtracking and rerouting to pick up multiple passengers, as was the case with their "UberPool" service. In exchange for significant discounts and more direct routing, riders are picked up within two blocks of their origins, and dropped off within two blocks of their destinations, which entails passengers walking more at the beginning and end of their trips.



Smartphones are also already being used at Metro McAllen, Valley Metro, and Brownsville Metro to improve transit service and user experience through route information apps. The Metro McAllen, Brownsville Metro, and Valley Metro Transit Agencies can continue to work with its planning partners to develop or enhance the functionality of smartphone transit applications to further encourage travelers to use transit.

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COORDINATION & POLICY STRATEGIES

The following section details strategies to address mobility needs related to Transportation Demand Management (TDM). These strategies utilize coordination and policy programs that aim to help the RGVMPO meet its mobility needs.

Transportation Demand Management

TDM strategies seek to reduce congestion on existing roadways by reducing the overall number of cars using roads or by redistributing cars away from congested areas and peak periods of travel. Encouraging the use of alternative modes of transportation (such as transit, biking, or walking) and increasing the number of travelers in each vehicle are the primary ways in which TDM strategies reduce single-occupant vehicle demand on existing roadways. Simply put, transportation demand can be managed by providing travelers with a wide range of efficient and accessible choices for reaching their destination.

With limited funding available to address congestion through increasing roadway capacity, TDM is a cost-effective means to improve use of the transportation system. TDM strategies are designed to accomplish the following:

- Improve mobility and accessibility by expanding and enhancing the range and quality of available travel choices.
- Reduce congestion and improve system reliability by decreasing the number of vehicles using the roadway.
- Reduce congestion and improve system reliability by shifting vehicle travel to non-peak periods.
- Increase safety by addressing congestion, which is generally related to higher occurrences of traffic incidents.
- Improve air quality by reducing the number of vehicle miles traveled, thereby saving energy, and decreasing the number of short vehicle trips.

The following sections detail best practices for TDM.

Strategies to Reduce Single Occupancy Vehicle Trips

Carpool, vanpool, and school-pool programs encourage travelers with common destinations, particularly employment and school destinations, to share vehicles. These can be based on informal arrangements between individuals or formally arranged through ride-matching services. Available research indicates that improving awareness, trust, and willingness to ride with strangers, as well as flexibility in scheduling, may help to increase carpool use. Incentives are another effective tool for encouraging ridesharing.

Resources that may help to increase the use of carpooling, vanpooling, and school-pooling include publishing a webpage with "Frequently Asked Questions" (FAQs) that address the benefits of carpooling, tips for finding other carpoolers, advice on how to organize pick-ups and drop-offs, carpooling etiquette, and safety concerns, among others.

Additionally, some entities have used websites to facilitate the matching of individuals with other carpoolers by either hosting their own free ride-matching service using online ride share software, or publicizing ride-matching applications available to the public, such as web-based carpooling apps.

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Incentives

The RGVMPO can play a valuable role in working with area employers and schools to develop employer-based incentives to encourage ridesharing, such as tax incentives and preferential parking.

TRANSPORTATION MANAGEMENT ORGANIZATIONS

Transportation Management Organizations (TMOs) are non-profit organizations voluntarily created by a group of businesses – often with local government support – to coordinate transportation services in a defined area (typically a commercial district, medical center, or industrial park). Because they tend to serve a small geographic area and constituency, these groups can be very responsive to members' needs. TMOs provide a variety of TDM services that encourage more efficient use of transportation and parking resources, particularly through commute trip reduction strategies and ridesharing.

EMPLOYER-BASED TOOLS & INCENTIVES

The commute to and from work is a significant contributor to traffic congestion along area roadways, particularly during peak travel times. TDM strategies that focus on employer-based tools and incentives can be an effective way to reduce travel by single occupant vehicles by coordinating ridesharing among employees, encouraging the use of alternate transportation modes for work trips, shifting work trips away from peak hours, and reducing work travel times and the number of overall trips. Examples of alternate modes of transportation include walking, biking, using transit, skateboarding, etc.

Employer-based TDM strategies fall into several categories:

- Encouraging employees to travel by alternate modes.
- Shifting trips away from peak periods of travel and reducing the total number of trips.
- Providing route information to divert commuters from congested routes.
- Using location-specific solutions - such as locating in developments with a mix of employment, residential, and service uses - to shorten the work commute.



Regional transportation planning entities can actively work with area employers to reduce congestion by expanding the transportation options available to their employees. This type of information can be provided on a website or delivered through a "speaker series" for educating area employers regarding options available and their benefits to employers, employees, and the community.

PARKING MANAGEMENT & INCENTIVES

Parking management strategies and incentives encourage the use of alternate modes and can be implemented by both local jurisdictions and employers. These strategies typically rely on dis-incentivizing travel by single occupant vehicle by passing along more of the cost of parking to employees and/or limiting the availability of parking. Improved management of parking facilities can result in potential savings to communities and may reduce parking requirements.

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Complete Streets

The concept of "Complete Streets" is rooted in the idea that roads should be built with all users in mind, not just the private automobile. While Complete Streets principles include many TDM and TSMO strategies, the concept focuses less on improving traffic conditions and more on the livability of places through a combination of safety, efficiency and comfort. Complete Streets strategies address the needs of all users of the transportation system, including the young and the old, the disabled, and users of transit or non-motorized forms of transportation. They yield a wide range of benefits related to safety, equity, access, economic development, air quality, health, and livability.

Per the HCMPO 2014 Pedestrian Plan and 2018 HCMPO Bicycle Plan, several cities had noted efforts to implement Complete Streets, including Alton, Donna, McAllen, Mercedes, Mission, Palmhurst, and Weslaco. However, specific methods were not provided.

While policies adopted by local governments represent most Complete Streets policies adopted nationwide, MPOs can be integral partners in promoting and implementing Complete Streets strategies. Moving forward, it will be crucial for the RGVMPO and BPAC to continue to engage with localities and their community members to implement more Complete Streets practices.



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Maintenance

Infrastructure maintenance is a critical aspect of TSMO. Most infrastructure management agencies prefer to schedule routine repairs and inspections instead of embarking on ad-hoc patching and repairing. Schedule management for inspection and street repairs will enable city and county personnel to efficiently use limited resources. Regularly scheduled roadway resurfacing is necessary to provide uniform improvements to the existing roadways and to extend their useful life. Older roads, especially those built according to discontinued standards, should be reviewed to upgrade deficient sections based on modern design standards.

Access Management

Access management refers to the regulation of the number of access points between a development and the adjacent roadway network. Many access management solutions involve installation of roadway medians where feasible to guide turning movements to the appropriate locations and improve traffic flow and safety. Another example of access management is optimizing the number and locations of driveway curb cuts in commercial or industrial zones.

Previous endeavors within the RGVMAB included MPO staff helping sponsor access management workshops for TAC members and city staff to attend. The RGVMPO sees many benefits from access management tools such as placement of laminations on the number and spots that curb cuts are permitted along a roadway.

Targeted Traffic Enforcement

Consistent and reliable enforcement of traffic laws helps address public concerns about traffic issues. Focused speed studies (using radar trailers and traffic counters) and enforcement can be employed in the RGVMAB to discourage speeding on roadways within the region.

Safe Passing Ordinances are an example of traffic enforcement that can help encourage RGVMAB citizens to use alternative modes of transportation as they increase bicycle and pedestrian safety. These ordinances protect vulnerable road users by requiring a safe passing distance of 3 feet by motor vehicles and 6 feet for commercial vehicles when conditions allow. Currently, several cities within the RGVMAB have enacted such safe passing ordinances, including Brownsville, Edinburg, Harlingen, McAllen, Mission, Pharr, San Benito, San Juan, and Weslaco.

The same can be said for parking enforcement laws, which prevent automobiles from parking in ways that may be harmful to or discourage pedestrian and bicycle travel. Edinburg, Pharr, and San Juan currently have such enforcements in place, while Brownsville is currently making progress towards implementation.

Traffic Calming

Because there are many instances where the number of aggressive drivers is greater than the capacity to enforce traffic laws, many cities and counties have implemented various "self-enforcing" speed and volume control devices. Most of these measures are referred to as "traffic calming." These physical devices can assist law enforcement in influencing driver behavior.

Most traffic calming measures are applied to residential streets, though certain measures can be applied to higher volume roadways as well. Broadly defined, the goals of traffic calming measures are:

- To slow down the average vehicle speeds for a roadway.
- To address excessive volumes for a roadway.
- To make drivers aware of the context and surroundings of roadways.

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Traffic calming measures can sometimes impact access and response time for emergency personnel. Representatives of fire, police, and emergency services departments should be involved in the review of proposed traffic calming devices. The RGVMPO can work with its planning partners and emergency response agencies to identify locations suitable for traffic calming implementation. Common examples of traffic calming installations include:



- Speed humps or cushions
- Bulb outs
- Chicanes
- Raised crosswalks
- Traffic circles

Traffic Incident Management

Traffic Incident Management (TIM) consists of a planned and coordinated process to detect, respond to, and quickly clear traffic incidents so that traffic flow may be restored as safely and quickly as possible. Effective TIM strategies reduce the duration and impacts of traffic incidents and improve the safety of motorists, crash victims, and emergency responders. Traffic incident management involves coordination among several public and private sector partners, including:

- Law enforcement
- Emergency management and preparedness
- Fire and rescue
- Emergency medical services
- Towing and recovery
- Transportation departments
- Hazardous materials contractors
- Public safety communications
- Traffic information media

All Ages & Abilities Facilities

Active transportation facilities which are designed and built to provide a high comfort level for all users including young, old, or disabled, is a more equitable approach to include more people in the active transportation network. All ages and abilities facility types focus on intuitive design, separation from motor vehicles, and a high level of comfort along all segments of the route. Occasionally, bike facilities may often have gaps which place vulnerable users in an uncomfortable position on the roadway, whereas all ages and abilities facility types will have a continuous and connected system. An example of an all ages and abilities facility in the RGVMAB is the Heavin Resaca Trail which connects BUS-77 with W. Stenger St. in San Bento and provides a separated, paved pathway comfortable for all users.

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Safe Routes to School Programs

Safe Routes to School (SRTS) programs aim to improve the ability to walk, bike, or wheel to schools. The program works with parents, schools, and local governments to prioritize and select projects that improve active transportation access to schools and ensure safe and comfortable routes for all students. Moving forward, the 2019 TxDOT Transportation Alternatives Set-Aside Program/Safe Routes to School Program Guide can be used as a guideline for SRTS implementation.

Open Streets Events

Open Street events, also known as "Ciclovias" or Sunday Parkways, are dedicated to non-vehicle use for a pre-determined period of time. Residents use the streets for activities such as exercise, games, or playing music. Community vendors, and business may be involved to incorporate local traditions. The purpose of Open Streets events is two-fold: first, to provide an opportunity to build community and enjoy public space in a safe, quiet environment, and secondly, promote and encourage residents to use active modes of travel such a walking, biking, or transit, for daily activities.

Municipalities or local non-profits group can both host such events, and often the two work in unison to accomplish the event. The City of Brownsville currently hosts "CycloBia", its Open Streets event which makes selected Brownsville streets available to residents for recreational and sport activities. The City of Harlingen has also hosted similar events known as "Viva Streets". The Open Streets Project provides many resources and tools for communities who would like to start an open streets event.

Social Behavior Change Programs

Many urban areas have started to offer residents who are interested in learning more about using active modes of travel additional information and support. Municipalities, transit agencies, and non-profit groups have maintained such programs to help reduce single occupancy vehicle trips, and increase trips made by walking, biking, or taking transit. Generally, programs work with individuals who are already interested, or who have considered making such changes, as not to waste effort with those residents who are not interested or ready to change their mode of travel. Community events, social media campaigns, and door to door marketing are all methods used to communicate with residents who choose to participate with the program. Successful programs have been shown to accomplish reductions in vehicle miles traveled within the communities the program is active.

Safety & Security

The FAST Act requires that the transportation planning process address both the safety and security of the transportation system for motorized and non-motorized users. Federal guidelines define safety as "freedom from unintentional harm," and define security as "freedom from intentional harm."

The RGVMPO is responsible for addressing safety and security through the programming of transportation improvements. The MPO's role in coordinating regional transportation needs between the various local, state, and federal transportation agencies are vital to creating successful safety and security policies and enhancing regional mobility. By integrating the safety and security goals and objectives of regional stakeholders into the transportation planning process, the MPO can ensure that its plans and studies are consistent with and help support safety and security planning in the RGVMAB.

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The following sections discuss the various safety and security initiatives relevant to the RGVMAB and focus on implementation strategies. Please refer to Chapter 2 for full descriptions of referenced plans.

Texas Strategic Highway Safety Plan

The SHSP identifies safety concerns and classifies them into seven key emphasis areas. The plan describes the trends in fatalities within each emphasis area, defines a specific target for 2022, and suggests strategies that should be undertaken to achieve the performance targets that are tailored to the unique circumstances of crashes within each emphasis area.

The strategies recommended in the SHSP should provide the basis for countermeasures that the RGVMPO consider addressing crash types and locations, as well as driving behaviors, that are responsible for the greatest number of crashes in the region – particularly those resulting in serious injuries or fatalities. Further information on RGVMAB safety trends can be found in Chapter 4.

Highway Safety Improvement Plan

The HSIP's goal is to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-state-owned public roads and roads on tribal lands. The program must be consistent with the Texas SHSP and report annually on the following:

- HSIP program structure
- Progress towards implanting HSIP-funded projects
- Progress made in achieving safety performance targets
- Assessment of the effectiveness of implemented improvements



TxDOT selects projects for implementation through HSIP following a data-driven approach that identifies safety problems in a systemic manner, identifies countermeasures to address them, and prioritizes projects based on the goals and objectives outlined in the SHSP.

Texas Department of Emergency Management

The state emergency management program is coordinated by the Texas Division of Emergency Management (TDEM). This program is intended to ensure that the State of Texas and its local governments respond to and recover from emergencies and disasters. The program also implements plans and programs to help prevent or lessen the impact of emergencies and disasters, as well as programs to increase public awareness about threats and hazards.

The TDEM also coordinates emergency planning and administers disaster recovery, hazard mitigation, and homeland security grant programs in the State of Texas.

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Previous MPO Safety and Security Efforts

RGVMPO has embraced and is working to continue, integrate and expand the safety and security programs and relationships developed over time by the three former MPOs covering portions of the consolidated RGVMAB. This section describes those programs and how the RGVMPO is tying these historical efforts into a cohesive and comprehensive regional safety and security program.

HSBMPO

The former HSBMPO used the "4-Es" of traffic safety to improve safety on roadways. The "4-Es" of traffic safety are Engineering, Enforcement, Emergency services, and Education. By using each of the "4-Es" the HSBMPO took steps to reduce crashes on roadways within the RGVMAB through safety related investments.

Several hurricane evacuation routes also pass through previously defined HSBMAB, which are vital roadways during emergency management events. The prioritization of these roadways in the project identification process is key to keeping a properly functioning disaster preparedness program.

Four international border crossings exist in the previous HSBMAB. Border security is vital to the region, state, and country, so interagency collaboration is needed to protect transportation infrastructure.

HCMPO

The former HCMPO worked with state and federal agencies to study and monitor safety in the region while working locally to make the transportation system safer.



The implementation of a Traffic Incident Management System (TIMS) was developed in 2010 to analyze state crash records and help guide decisions on where to make roadway improvements. This data is also used to assess specific roadway areas for pedestrian, cyclist, transit, and freight safety, as well as where roadway improvements can be made.

Disaster preparedness was also a primary concern for the region and the HCMPO worked closely with TxDOT and the LRGVDC to coordinate plans for the event of a natural disaster.

Six international border crossings are present in what previously was the HCMAB. Close relationships have been formed with U.S. Customs and Border Protection along with the City of Reynosa, in Tamaulipas, Mexico to provide security to border crossings and bridges that connect the region economically and socially to Mexico, and RGVMPO must continue moving forward to ensure regional safety and security.

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BMPO

The former BMPO 2040 MTP update included four policy statements regarding safety and security planning, which were as follows:

- The Brownsville MPO supports, along with transportation partners, the development of a safe transportation system for all users (pedestrian, bicycle, private auto and trucking and public transportation).
- The Brownsville MPO will examine and consider increased transportation system security when evaluating or sponsoring funding requests for transportation improvement projects.
- The Brownsville MPO will champion or support agency coordination, training, and information-sharing efforts to promote security preparedness within the MPO planning area.
- The Brownsville MPO will seek available funding to strengthen the security of the MPO's transportation system.

Directed by these policy statements, the BMPO enacted various methods of incorporating safety and security measures. For example, in the project identification process, rankings included points for safety, and FHWA-sponsored safety workshops were held for MPO and local staff members.

The MPO also coordinated with many relevant agencies such as U.S. Homeland Security, Brownsville Police Department, and the Cameron County Police department.

Currently, the City of Brownville Office of Emergency Management and Homeland Security (OEMHS) serves Brownsville citizens by making plans to prepare for and respond to emergencies or disasters, either man-made or natural.

RGVMPO ACTIONS TO CONTINUE AND INTEGRATE PREVIOUS SAFETY AND SECURITY EFFORTS

RGVMPO is working to continue the previous safety and security program development begun by the three former MPOs by undertaking a variety of actions and strategies, including but not limited to:

1. Evaluating the programs in each area to identify the most effective strategies and considering how they might be expanded to regional programs.
2. Identifying common themes and effective branding (such as the HSBMPO '4E' terminology) to develop common and consistent vocabulary for use in planning and program development efforts across the RGVMAB.
3. Looking for opportunities to consolidate and streamline task groups or committees to reduce redundancy and make the most effective use of people's available time, particularly emergency management and emergency response personnel that are so critical to both creating and carrying out the programs.
4. Respecting the uniqueness of each community by preserving and supporting independent safety and security programs where a customized, site specific, approach is the most effective and most likely to achieve the desired safety and security outcomes.
5. Continuing to work with federal, state, and local agencies and emergency managers to identify steps to be taken that may not have been previously considered or have become necessary due to emerging circumstances and challenges.

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STRATEGIES TO INCREASE TRAVEL BY ALTERNATIVE MODES OF TRANSPORTATION

Strategies to increase travel by alternative modes (i.e. transit and active transportation) can also help the RGVMAB reduce the number of automobile trips and enhance regional mobility. These strategies typically focus on the following objectives:

- Expand the service area of transit (regional and local) and connect bicycle and pedestrian infrastructure to transit facilities to reach more citizens, increasing connectivity to key destinations within the region.
- Improve the quality of transit service to increase convenience, comfort, ease of access, and affordability to encourage mode switch by providing various levels of service focused on community context.
- Educate the public on the availability of various alternative transportation modes and services and provide intuitive and accessible resources to help travelers navigate the region.
- Understanding and reducing congestion allowing for more efficient and safe travel of alternative transportation modes on the RGVMAB roadway network.

The following sections detail mode-specific strategies based on plans currently under development which will provide the RGVMAB with recommendations for alternative transportation mode implementation.

RGVMPO Active Transportation Plan

Active transportation refers to non-motorized modes of travel, such as walking, bicycling, or using a wheelchair or mobility device. Because these modes provide fundamental means of mobility and accessibility to individuals, it is crucial for the metropolitan planning process to consider the needs of active transportation users. In addition, active transportation can provide communities with opportunities for enhanced recreation, leisure, and tourism by creating pedestrian and bicycle networks that allow people to spend time outdoors and encourage economic development. Some standard strategies include:

- Increasing bicycle/pedestrian safety through signage, lighting, facility type upgrades, etc.
- Increasing the continuity of facility networks
- Increasing availability of parking/storage and availability of amenities (e.g. RGVMPO Bike Friendly Business Program)



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Accordingly, the RGVMPO Active Transportation Plan is being conducted in tandem with this MTP update to help address such strategies. The plan contains robust analysis on the RGVMAB's current state of active transportation infrastructure and ensuing needs; a set of network recommendations with a staged implementation plan; and facility design guidelines. The plan also conducted public engagement efforts alongside the MTP process to consider community priorities and locally identified needs.

All elements of the plan aim to guide the creation of a successful active transportation network that supplements the project prioritization described in this MTP update, specifically in Chapter 9. This will allow for the RGVMPO and its planning partners to optimize the multimodal transportation project implementation process in an effective and fiscally constrained manner, while increasing the quality of life for the RGVMAB residents by providing more multimodal mobility options.

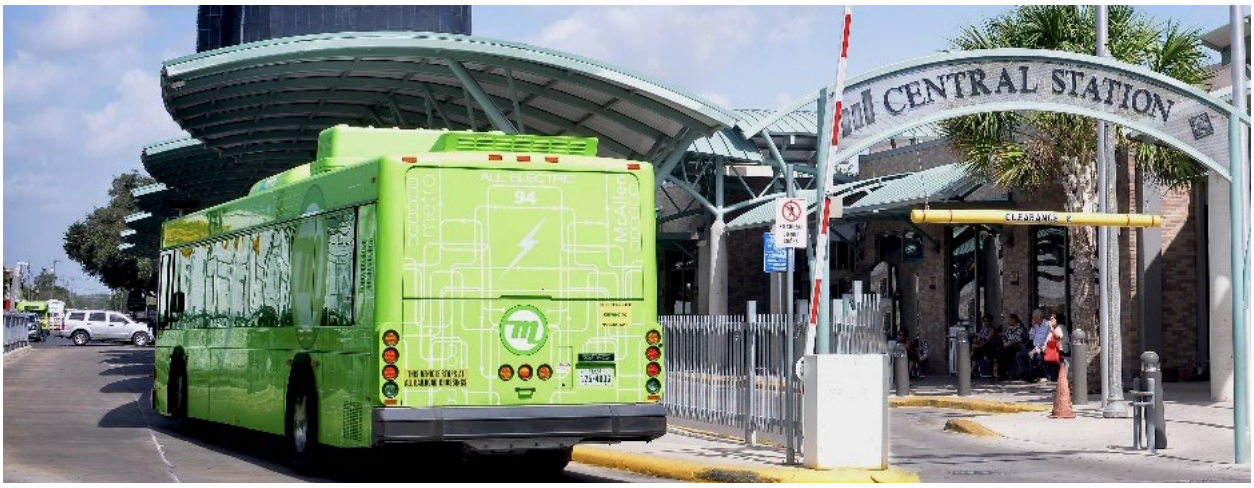
To maintain focus on active transportation issues, the BPAC exists to address pertinent active transportation matters and present recommendations to the TAC. This subcommittee contains a mixture of TAC members, bicycle advocates, pedestrian advocates, and other relevant stakeholders. Continued support from the RGVMPO BPAC will be essential to the enhancement of the RGVMAB active transportation network. The full Active Transportation Plan is available for review on the RGVMPO website.

RGVMPO 2030 Transit Development Plan

While personal automobiles typically offer comfort and ease to users, traveling by transit typically requires longer travel times and less flexibility in schedule. Improving transit services involves strategies and planning that makes the option of taking transit competitive to that of using a personal automobile by creating time and cost savings. Such strategies include:

- Shortening overall travel times
- Increasing traveler comfort
- Providing added flexibility regarding travel times and destinations

Certain aspects of bus travel will always be less convenient than travel by car, however, there are several improvements that can be made to existing regional (i.e. Valley Metro) and local (i.e. Brownsville Metro, Island Metro, McAllen Metro, UTRGV) service to influence a future transition to transit ridership.



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The RGVMPO is also conducting the 2030 Transportation Development Plan (TDP) in concurrence with this MTP update to ensure a coordinated effort in the multimodal transportation planning process. The TDP contains in depth analysis on the RGVMAB's existing transit conditions and needs; a set of service standards to create a unified regional state of transit; scenario alternatives for Valley Metro to efficiently connect to existing service providers; and a transit investment analysis detailing the level of funding necessary to achieve the scenarios developed. The plan also conducted a series of public engagement events alongside the MTP outreach efforts to understand community priorities and obtain local input on specific areas of need. These engagement findings were paired with the TDP's technical analyses to provide better mobility options within the RGVMAB via transit.

The addition of the TDP, alongside the MTP prioritization process, will allow for the RGVMPO and its planning partners to better understand how to enhance the existing transit system, in turn reducing single occupancy vehicle travel and improving multimodal options for RGVMAB citizens. The full TDP is available for review through the RGVMPO website.

RGVMPO Congestion Management Plan

The CMP is also currently under development and aims to gather data on congestion levels in the urbanized areas of the RGVMAB and ties in closely to the technology, coordination, and policy strategies discussed earlier in this chapter. The CMP network being analyzed consists of roadways within the RGVMAB that are either FHWA functionally classified or identified as a transit route. This process informs cost balanced strategies for reducing delay and congestion and is an integral resource used in the development of this MTP as well as in the decision-making framework established in the MTP for future investments strategies prioritization.

INFRASTRUCTURE INVESTMENT STRATEGIES

The following section outlines the steps taken to address or mitigate the deficiencies identified through the multimodal needs analysis (Chapter 4). Steps include the development of an unconstrained list of potential infrastructure projects, completing a project prioritization process based on the 10 FAST Act planning factors and community values, and creating a staged implementation plan for the MTP planning horizon (Chapter 6). This process allows for the RGVMPO to build off data-driven analyses and community input to create a subjective project prioritization which will in turn allow the region to implement projects that address gaps in transportation infrastructure in a timely and fiscally feasible manner.

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Project Identification

No-build strategies were considered and potential projects to expand or build new facilities were examined. The results of technical reviews, available planning studies, highway and corridor studies, consultation with community members and other stakeholders. The RGVMPO 2045 MTP projects were identified by each previous individual MPOs and include existing projects, projects from the 2040 MTP, and a call for projects during the development of the 2019 MTP.

Once the alternative policy and program strategies were considered, potential projects to expand or build new facilities within the RGVMAB were examined.

The combined results from public and stakeholder engagement, plan review, multimodal needs assessment, and a call for transportation projects was used to develop a list of candidate projects for further consideration.

Project Selection

The RGVMPO works in close coordination with the TxDOT Pharr District, using objective data and quantitative analysis tools, to identify and address regional needs based on state and national goals. Through this process, TxDOT category funding is allocated towards transportation infrastructure projects. This includes funding categories such as preventative maintenance and rehabilitation, corridor and connectivity enhancements, non-traditionally funded transportation projects, grade separation programs, safety improvements, border infrastructure, and other supplemental transportation projects.

Regarding Category 7 and 9 funding projects, the RGVMPO and TAC incorporated the federal planning factors and feedback received during the visioning process to help determine regional priorities and develop a draft prioritized project list. FAST Act planning factors can be referenced in Chapter 2. The TAC, with assistance from RGVMPO staff, used a project evaluation process based on technical findings, stakeholder input, and professional judgement to evaluate and prioritize the project list. The project selection process is further discussed in Chapter 9.

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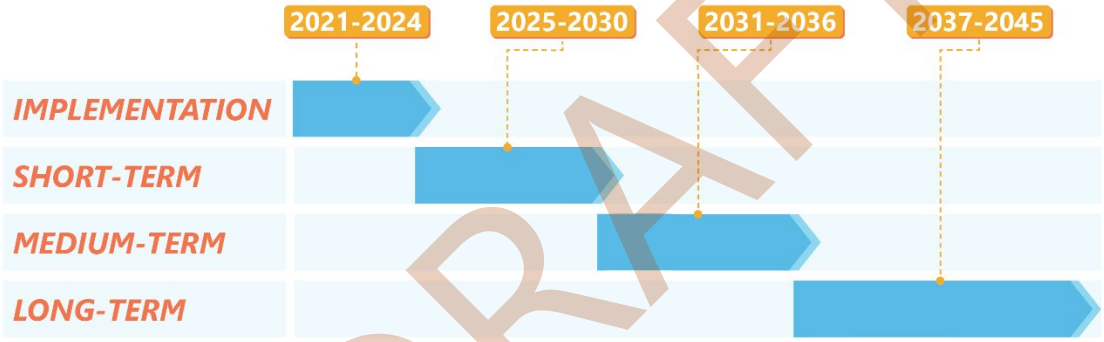
Project List Adoption & Staged Improvement Plan

The TPB oversees final approval of the draft project list after the prioritization process is finalized. Once the TAC completed their project selection process, the draft list of prioritized projects was sent to the TPB, which approved the draft list for public review and feedback. Following public comment, the TPB approved the final project list upon adoption of the RGVMPO 2045 MTP.

The final list of prioritized projects is presented in the following chapter, which displays the project list in a phased plan for fiscally constrained implementation over the 26-year plan horizon. The implementation phases are listed below:

- Implementation Stage (2021 – 2024)
- Short-Term Stage (2025 – 2030)
- Medium-Term Stage (2031 – 2036)
- Long-Term Stage (2037 – 2045)

Figure 5-1: Project List Adoption & Staged Improvement Plan



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Chapter 6 also provides corresponding maps to identify projects in each stage of the plan.

6 STAGED IMPROVEMENT PLAN

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This chapter details the staged improvements over the life of the MTP, shown in bands of time coinciding with the TIP, UTP, and remaining planning horizon beyond the UTP.

This chapter also details the specific fiscally constrained program of projects for Roadway Projects, including Active Transportation Projects, and Transit Projects.

This chapter includes maps and tables that illustrate the RGVMPO 2045 MTP project list. The fiscally constrained projects in this chapter have been grouped into four stages based on related transportation improvement programming and planning documents, as well as staging of revenue forecasts discussed in Chapter 8. The first stage is set up to coincide with projects in the Transportation Improvement Program (TIP), as well as the first stage of the 2021 Unified Transportation Program (UTP). The next segment includes projects expected to be in operation within the second stage of the current 2021 UTP. The remaining projects represented in this chapter are those that fall beyond 2030 and within the horizon of this MTP (2031-2045). The period between 2031 to 2045 is seperated into two segments in order to support the development of future TIPs and MTPs.

Additionaly, projects listed in the previous MTP as planned in fiscal year 2020 have been included in this chapter for illustrative purposes (Figure 6-1 and Table 6-1).

The years covered by the stages of the RGVMPO 2045 MTP are separated as following:

- 2021-2024 Implementation Stage (TIP & near term UTP)
- 2025-2030 Short-Term Stage (Remaining Years of 2021 UTP)
- 2031-2036 Medium-Term Stage
- 2037-2045 Long Term Stage
- Unfunded Projects

In addition to the fiscally constrained project list, this chapter includes a breakdown of TxDOT regionwide grouped projects and locally funded, unfunded, or illustrative projects identified and/or submitted as part of the MTP development process.

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FISCALLY CONSTRAINED PLAN OF ROADWAY PROJECTS

The following maps (Table 6-2 through Figure 6-4) show the locations of the fiscally constrained multimodal projects in the RGVMAB. The projects are split by the four project stages previously mentioned. Table 6-2 through Table 6-5 present the fiscally constrained multimodal transportation system project listed by year with associated estimated year of expenditure (YOE) costs. Projects that have an asterik (*) by their project number are projects with active transportation elements and projects that have a superscript plus sign (⁺) are projects with transit components. The development of the estimated total project costs associated with projects including future year of expenditure dollars is discussed in greater detail in Chapter 8. The total costs discussed in Chapter 8 include:

- Current Construction Cost Estimate
- Letting Year Construction dollars
- Right of way (ROW) cost (12% of construction cost)
- Preliminary Engineering (4.9% of construction cost)
- Construction Engineering (CE) Cost (<$2 M 7.5%, $2-$10 M 5%, >$10 M 4.5%, of construction cost)

Table 6-6 represents the unconstrained, unfunded projects. These projects are still included as illustrative regionally significant projects to support the consideration of future planning efforts.

Figure 6-1: RGVMPO 2020 Illustrative



Table 6-1: RGVMPO Fiscal Year 2020 Projects

2045 MTP ID	Highway	From	To	Project Description	Project Phase	CSJ	Project Sponsor	Year of Expenditure Dollars (YOE)
1	South Port Connector	On South Port Connector, From Ostos Road	SH 4	Construct a direct connector at Port of Brownsville	C	0921-06-288	BND	$20,363,457
2	CS	B Metro Eastside Transfer Station	At Jose Colunga Jr & Billy Mitchell	Construct Bus Facility		0921-06-304	City of Brownsville	$812,862
3	FM 802	FM 1847	Old Port Isabel Rd.	Proposed 6 lanes with raised center median.	C	1140-02-038	TxDOT	$6,354,499
4	Veterans International Bridge at Los Tomates	Port of Entry		Expansion of primary lanes for passenger vehicles.	E	0921-06-313	CCRMA	$500,000
5	CS	On Stuart PL Rd., 0.18 MI N of Primera Rd.	FM 2994/Wilson Rd.	Construction of 1.2mi of ADA-accessible 5 to 6-foot-wide sidewalk	C,E	0921-06-311	City of Primera	$578,412
6 (not mapped)	Donna Int'l Bridge Commercial Approach	Donna BSIF	Future IBTC / FM 493 intersection	Construct 4 lane, controlled access tolled facility	R	0921-02-382	Donna	$3,300,000
7 (not mapped)	Owassa Rd	I Rd.	Cesar Chavez Rd.	Construct a 4 lane, urban roadway	R	0921-02-374	HC 2 - 4	$800,000
8 (not mapped)	Signal Improvements	Within Hidalgo County		Traffic signal hardware improvements		0921-02-155	Various	$1,000,000
9	Pharr Comprehensive Pedestrian Safety Wellness Plan	City limits	City limits	Planning study for new construction pedestrian safety improvements	TAP	0921-02-389	Pharr	$254,000
10	Vision Zero Planning Study	City limits	City limits	Vision Zero Planning Study	TAP	0921-02-390	McAllen	$150,000
11	SH 68	US-83	FM 1925	Construct new 4 lane divided rural highway facility	R	3629-01-001	TxDOT	$92,629,626

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Figure 6-2: RGVMPO Implementation Stage Projects (2021 -2024)

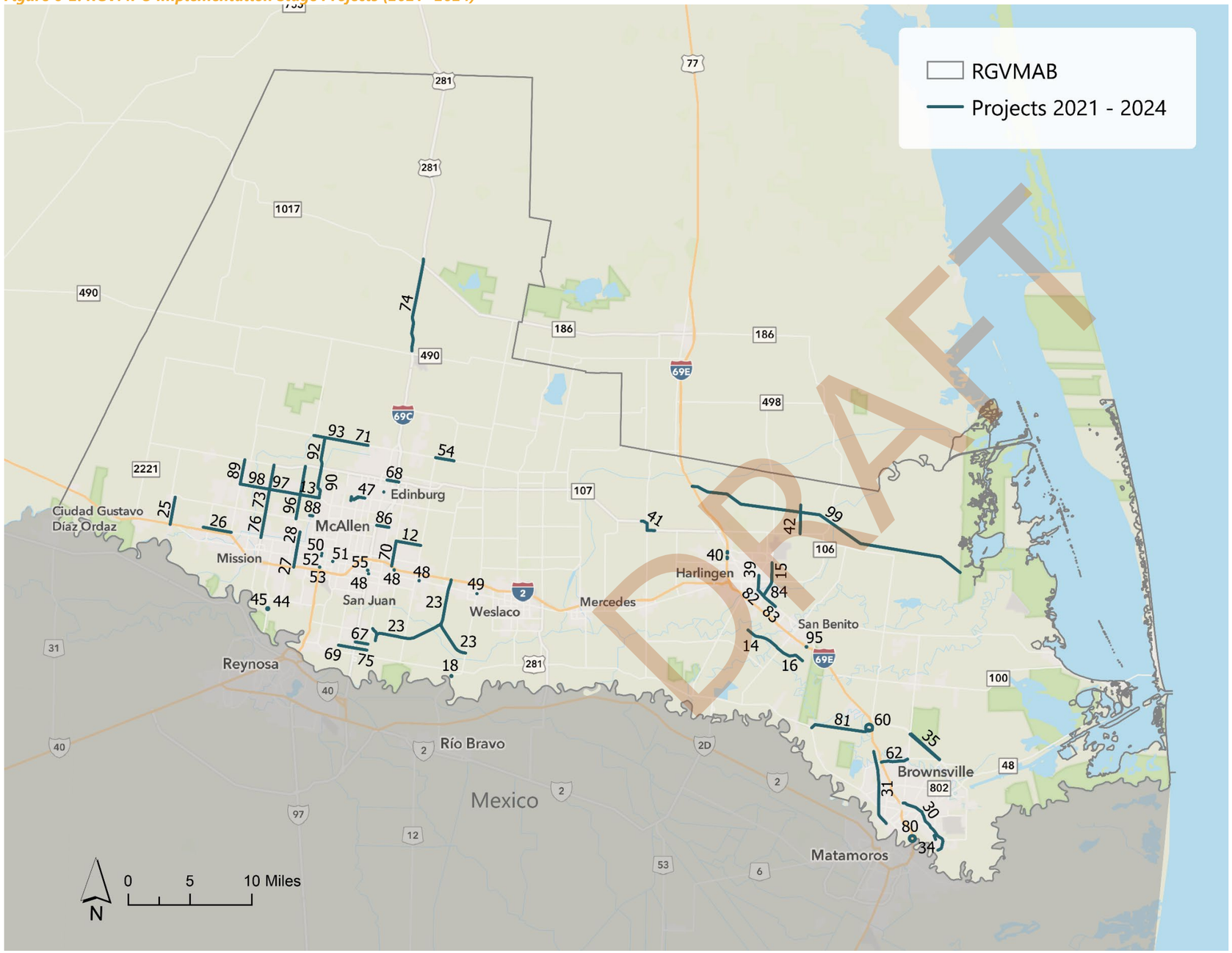


Table 6-2: RGVMPO Implementation Stage Projects and Funding (2021-2024)

2045 MTP ID	Highway	From	To	Project Description	Project Phase	CSJ	Project Sponsor	Year of Expenditure Dollars (YOE)
12	CS - Nolana Loop (S1)	On Nolana Loop from FM 1426 (Raul Longoria)	FM 907	Widen to 4 Lane Divided	R	0921-02-361	HC 2 / McAllen	$2,000,000
13	FM 676	Taylor Rd.	FM 2220	Widen to 4 Lane Divided	E	1064-01-043	McAllen / HC 4	$671,870
14	CS	S. Parallel Corridor FM 509	FM 2520	Construct 2 lane rural	C	0921-06-252	Cameron County	$7,500,000
15*	Loop 499	Rio Hondo Rd.	FM 106 (Harrison Ave.)	Construction of 1.48 mi of ADA accessible 6 ft wide sidewalks	C,E	0921-06-312	City of Harlingen	$544,711
16	CS	S. Parallel Corridor, FM 2520	FM 1577	New Location - 2 lane Rural roadway in a proposed 120 Foot ROW	E,R	0921-06-257	Cameron County	$2,200,000
17*	VA	Cano St.	Freddy Gonzalez	Installation of solar powered lighting along the Cano walking trail	TAP	0921-02-392	Edinburg	$534,400
18	CS	At Donna Int'l Bridge		Construction commercial facilities NB loaded/empty & SB loaded trucks	C	0921-02-394	Donna	$44,529,491
19 (not mapped)	SH 495 Ext. (Section 1)	FM 1423	FM 493	Proposed construction of 4 lane divided urban section within 100ft of ROW	E	0921-02-470	PCT 1	$2,244,851
20 (not mapped)	SH 495 Ext. (Section 2)	FM 493	Mile 6 Rd.	Proposed construction of 4 lane divided urban section within 100ft of ROW.	E	0921-02-471	PCT 1	$1,560,643
21 (not mapped)	FM 1925 (Section 1)	FM 2221	3.1 Miles N	Proposed 2-lane rural highway with 10 ft. shoulders in 120 ft. of ROW	E	0921-02-472	PCT 3	$1,320,315
22 (not mapped)	FM 1925 (Section 2)	Jara Chinas Rd.	8.6 Miles East (New Location)	Proposed 2-lane rural highway with 10 ft. shoulders in 120 ft. of ROW	E	0921-02-473	PCT 3	$2,764,113
23	CS	On 365 Tollway, FM 396 (Anzalduas Highway)	US-281 Military Highway	Construct 4-lane controlled access tolled facility	C	0921-02-368	HCRMA	$262,389,609
24	International Bridge Trade Corridor (IBTC)	365 Tollway at FM 493	I-2	Construct non-tolled 4 lane divided (at grade) highway (interim)	E	0921-02-142	HCRMA	$8,000,000
25	CS (Phase I)	Liberty Blvd, from Mile 3	US-83	Widen from 2 to 4 lanes with dedicated left turn lane	R	0921-02-194	Hidalgo County	$1,185,242
26	CS	On Veterans SH 495 from I-2/US-83	SH 364 (La Homma Rd.)	Construct 4 lane divide urban section	R	0865-01-108	Palmview/ HC 3	$2,699,360
27	CS	On Taylor Rd, from Bus 83	I-2 (US-83)	Widen from 2 to 4 lanes Roadway	R	0921-02-327	HC 3	$1,192,488
28	CS	On Taylor Rd. @Mile 2 N	Business 83	Widen from 2 lanes to 4 lane divided urban	R	0921-02-328	HC 3	$2,011,852
29 (not mapped)	CS	On Indiana Ave, 0.1 Mile North of California Rd.	0.62 Mile North of FM 1419 (Southmost Rd.)	Realignment, construct 2 lane rural roadway	E	0921-06-305	CCRMA	$312,500
30*	VA	Southmost Nature Trail, from FM 1847	Alameda Dr./Monsees Rd.	Construct 10' concrete trail	C	0921-06-289	City of Brownsville	$6,968,000
31*	CS	On West Rail Trail, From Palm Blvd. @ Former Rail Line	I-69E SB Frontage Road, W. of Old Alice Rd.	Construct Multimodal Facility	E	0921-06-293	CCRMA	$1,000,000
32 (not mapped)	CS	On East Loop, from I-69E	SH 4	Construction of 4 to 6 lane roadway	E	0921-06-315	CCRMA	$3,875,000
33 (not mapped)	CS	On Old Alice Rd., SH 100	Sports Park Blvd.	Widen from 2 lane to 4 lane Urban Roadway	E	0921-06-290	Cameron County	$1,100,000

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2045 MTP ID	Highway	From	To	Project Description	Project Phase	CSJ	Project Sponsor	Year of Expenditure Dollars (YOE)
34*	VA	Southmost Nature Trail Phase, from Manzano St.	La Posada Dr.	Construct 10' concrete trail	C, E	0921-06-280	City of Brownsville	$375,000
35	SH 550	0.203mi S of FM 1847	1.13mi SE of UPRR Overpass @ FM 3248	Widen from 2 lanes to 4 lanes	C,E, E	0684-01-068	CCRMA	$17,500,000
36* (not mapped)	VA	2 Mi North of FM 511/FM 1847 int.	Along Canal, .7 mi E, .38 mi N, 0.3 mi W	Construct 10' Hike and Bike Trail between Brownsville and Los Fresnos	C	0921-06-322	City of Brownsville	$999,080
37 (not mapped)	West Blvd.	FM 3248 (Alton Gloor)	FM 802 (Ruben Torres Blvd.)	Roadway/ Trail Construction Phase of Multi Modal Corridor	C	0921-06-340	CCRMA	$6,378,902
38 (not mapped)	CS	On Military HW Connector, from I-69E & SH 100	US-281 Military Highway	Construction of a 4-lane divided highway	E	0921-06-339	CCRMA	$750,000
39	Bus 77X	Jefferson Ave.	0.035 Mi S of SS 206	Install Raised Median	C	0327-08-102	TxDOT	$651,026
40	I-69E	Industrial Blvd.	Loop 499/ Primera Rd.	NB and SB Ramps Reversal	C	0327-08-092	TxDOT	$2,758,544
41*	SH 107	Louisiana St.	Hooks E. Hodges Rd.	Reconstruct to 4 lanes C&G and add ADA sidewalk	C	0342-03-037	TxDOT	$10,185,301
42	CS	FM 509 on New Location from FM 508	FM 1599	New Location 2 lane Rural Roadway	C,E,R	0921-06-254	CCRMA	$9,686,000
43	CS	On Taylor Rd. @Mile 2 N	Business 83	4 lanes divided urban	C, E	0921-02-328	HC 3	$8,306,011
44	Anzalduas Int'l Port of Entry	Anzalduas Int Bridge Port of Entry	South Bound	Construction of Southbound Inspection Station	C	0921-02-303	McAllen	$10,000,000
45	Anzalduas Int'l Port of Entry (NB)	Anzalduas Land Port of Entry NB Empties	0	Inbound commercial inspection pre-primary inspection pre-cleared cargo traffic	C	0921-02-379	McAllen	$43,700,000
46	CS	On Mile 3 N, Tom Gill Rd.	FM 492 (Goodwin Rd.)	Widen to 4 Lane Divided - Curb & Gutter Section	C,E,R	0921-02-321	HC 3	$17,213,674
47*	VA	Canton Rd & Jackson Rd. (Edinburg)	Bicentennial H/B & Wisconsin (McAllen)	Jackson Rd Hike & Bike Project Phase II	TAP	0921-02-431	McAllen / Edinburg	$2,753,775
48*	VA	City of Pharr	City of Alamo	PSJA Tri-City Pedestrian Safety Improvements - New Construction Safety Improvement	TAP	0921-02-391	Alamo / San Juan / Pharr	$2,286,000
49*	VA	Donna Sidewalk Project	S. International Blvd.	Rehabilitation of deteriorated sidewalks and construction of new sidewalks	TAP	0921-02-393	Donna	$340,741
50	FM 1926 (23rd St.)	FM 1926 (23rd St.) & Hackberry Ave.	0	Addition of North and South bound center turn lanes	C	1804-01-068	McAllen	$86,265
51	SH 336	Intersection Business US-83	135ft S Intersection US Business 83	Addition of north bound right turn lane	C	0621-01-106	McAllen	$77,958
52	FM 1926 (23rd St.)	FM 1926 (23rd St.) & Ebony Ave.	0	Addition of east, north, and south bound center turn lanes	C	1804-01-071	McAllen	$141,219
53	FM 1926 (23rd St.)	FM 1926 (23rd St.) & Jackson Ave.	0	Addition of North and South bound center turn lanes	C	1804-01-072	McAllen	$116,618
54	FM 1925	FM 907 (Alamo Rd.)	Sharp Rd.	Widen to 4 Lane Divided	C	1803-02-035	TxDOT	$10,000,000
55*	VA	City Pharr	City Alamo	PSJA Tri-City Ped Improvement Phase II	TAP	0921-02-432	Pharr / San Juan / Alamo	$2,196,840
56* (not mapped)	VA	Within Hidalgo County	0	RGV B-Cycle Bikeshare	TAP	0921-02-429	LRGVDC	$544,000

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2045 MTP ID	Highway	From	To	Project Description	Project Phase	CSJ	Project Sponsor	Year of Expenditure Dollars (YOE)
57* (not mapped)	VA	Within Hidalgo County	0	Hidalgo County Active Mobility Plan	TAP	0921-02-430	Valley Metro	$330,000
58	International Bridge Trade Corridor (IBTC)	365 Tollway at FM 493	I-2	Construct non-tolled 4 lane divided (at grade) highway (interim)	R	0921-02-142	HCRMA	$40,000,000
59* (not mapped)	VA	Phase 1 terminus, 1 Mile North	0.38 miles west, 0.1 miles north	Construct 10' Hike and Bike Trail between Brownsville and Los Fresnos	C	0921-06-324	City of Brownsville	$999,080
60*	Mesquite St.	Interior Roads at Olmito Townsite	FM 1732	Construct 5' concrete sidewalks	C & E	0921-06-326	Cameron County	$418,243
61 (not mapped)	CS	On Whipple Rd., FM 1575	FM 1847	Proposed 2 lane roadway with continuous left turn lane.	E	0921-06-292	CCRMA	$380,300
62	FM 3248	I-69E	FM 1847	Widen from 4 lanes to 6 lanes with raised median.	C	2717-01-027	TxDOT	$15,120,000
63* (not mapped)	VA	On W side of FM 1847, Henderson Rd.	First Street	Construct sidewalk on west side of FM 1847	C	0921-06-325	City of Los Fresnos	$412,608
64	CS	S. Parallel Corridor, FM 2520	FM 1577	New Location - 2 lane Rural roadway in a proposed 120 Foot ROW	C	0921-06-257	Cameron County	$9,000,000
65 (not mapped)	Bus 77X	SS 206	Commerce St.	Construct Raised Median	C	0327-08-098	TxDOT	$5,203,597
66	FM 676	Taylor Rd.	FM 2220	Widen to 4 Lane Divided	C	1064-01-043	TXDOT / HC 4	$6,000,000
67	CS	On Anaya Rd., from Cage Blvd.	Veterans Blvd.	Widen to 5 lanes	C,R	0921-02-400	Pharr	$5,930,000
68	SH 107	Bus 281-W	I-69C (US-281)	Operational Improvements and Rehabilitation	C	0342-01-093	TxDOT / HC 2	$19,000,000
69	CS	On Hi Line W, Jackson Rd.	Cage Blvd.	Widen to 2 lane with continuous left turn lane	C,R	0921-02-376	Pharr	$5,860,000
70	FM 1426 (Raul Longoria)	Nolana Loop	I-2	Widen from 4 lanes to 6 lanes with raised median	C	1429-02-036	TxDOT/ HC 2	$16,000,000
71	FM 1925	10th St.	McColl Rd.	Widen to 6 lane with raised median	C	1803-01-092	TXDOT	$9,125,000
72	CS	Liberty Blvd. from Mile 3	US-83	Widen to 4 lanes with dedicated left turn lane	C, E	0921-02-194	HC 3	$10,535,477
73	SH 107 (Conway)	FM 1924 N (Mile 3 N)	FM 676 (Mile 5 N)	Construct 6 Lane Divided Rural	C	0528-01-113	TxDOT/HC 3	$10,812,000
74	US-281	0.273 mi S SH 186	0.023 mi N FM 490	Rural Expy Facility- Construct 4 lanes with overpasses & two - 2 lanes frontage roads	C	0255-07-140	HC 4	$118,700,000
75	CS	On Hi-Line Rd., From Cage Blvd.	Veterans Rd.	Widen to 2 lane with continuous left turn and shoulders	C &R	0921-02-375	Pharr	$4,523,551
76	SH 107 (Conway)	FM 1924 (Mile 3 N)	SH 495	Construct 6 Lane w Raised Median	C	0528-01-118	TxDOT/ HC 3	$20,400,000
77	SH 107 (Conway)	FM 676	FM 681/FM 2993	Widen from 4 lanes to 6 lanes divided urban	C	0528-01-112	TxDOT/ HC 3	$15,300,000
78	SH 495	Veterans Blvd., from I-2	La Homa Rd.	Construct 4 lane divide urban section	C	0865-01-108	TxDOT	$12,745,750
79* (not mapped)	VA	Interior Roads at Las Palmas Mobile Estates	FM 802	Construct 5' concrete sidewalks	C & E	0921-06-327	Cameron County	$315,925
80	VA	Vicinity of GSA Facility at Brownsville	Veterans Intl Bridge at los Tomates	Construction of Border Safety Inspection Facility	C	0921-06-207	TxDOT	$15,600,000
81	FM 1732	US-281	I-69E	Widen from 2 lanes to 4 lanes Urban	C	0684-03-019	TxDOT	$22,560,000
82	Bus 77X	Commerce St.	Arroyo Bridge	Construct Raised Median	C	0039-12-254	TxDOT	$1,386,434

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2045 MTP ID	Highway	From	To	Project Description	Project Phase	CSJ	Project Sponsor	Year of Expenditure Dollars (YOE)
83	Bus 77X	Arroyo Colorado Bridge	FM 510	Widen from 4 lanes to 6 lanes with Raised Median	C	0039-12-057	TxDOT	$37,543,328
84	Loop 499	Business 77	SS 206	Widen from 4 lanes to 6 lanes with Raised Median	C	1137-02-038	TxDOT	$15,300,000
85	CS	On Taylor Rd. from Bus 83	I-2 (US-83)	Widen 4 lanes with left turn lane	C,E	0921-02-327	Hidalgo County	$6,750,196
86	CS	On Owassa Rd., from I-69 (US-281)	I Rd.	Widen from 2 lanes to 4 Lane roadway	C	0921-02-358	TXDOT	$5,500,000
87 (not mapped)	US-281	Hidalgo/ Brooks CL	0.315Mi N of SH 186	Construct 4 Lanes with overpasses and two-2 lane frontage roads	C	0255-06-069	TXDOT	$194,000,000
88	CS	On Dove St., from 41st St.	Bentsen Rd.	Construct 4 lane divide roadway (New Location)	C	0921-02-341	McAllen	$1,404,225
89	SH 364 (La Homa)	FM 2221	FM 676	Widen from 2 lanes to 5 lane curb and gutter	C	2966-01-014	TxDOT	$5,500,000
90	FM 2220 (Ware Rd.)	SH 107	Mile 5 N (Auburn Ave.)	Proposed 6 Lane Median	C	2094-01-062	TxDOT	$17,470,000
91	FM 494	SH 107	FM 676 (Mile 5)	Widen to 4 lane	C	0864-01-068	TxDOT	$13,942,377
92	FM 2220 (Ware Rd.)	FM 1925 (Monte Cristo)	SH 107	Widen from 2 lanes to 6 lanes with median	C	2094-01-063	McAllen /TxDOT	$18,774,045
93	FM 1925	Wallace Rd.	10th St.	6 lane with raised median	C	1803-01-094	TxDOT	$23,500,000
94	SH 68	US-83	FM 1925	Construct new 4 lane divided rural highway facility	C	3629-01-001	TxDOT	$183,600,000
95	I-69E/US-77/83 Northbound	At I-69 & FM 732 Intersection	At Sherer Rd./ Bus 77 Intersection	Proposed Continuous Frontage Roads and Intersection improvement	C	0039-07-049	0	$17,810,000
96	FM 494	FM 676 (Mile 5)	FM 1924 (Mile 3)	Widen to 4 lane	C	0864-01-069	TXDOT / HC 3	$392,000
97	FM 676 (Mile 5)	SH 107 (Conway)	Taylor Rd.	Widen to 4 Lane Divide	C	1064-01-027	TxDOT	$11,894,902
98	FM 676 (Mile 5 N)	SH 364 E (La Homa Rd.)	SH 107 (Conway)	Widen to 4 Lane Divided	C	1064-01-032	TXDOT / HC 3	$15,000,000
99	Outer Parkway	I-69E	FM 106/General Brant Rd.	New Location - Controlled Access 4 lane Toll Facility	C	0921-06-283	0	$220,000,000

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Figure 6-3: RGVMPO Short-Term Stage Projects (2025-2030)

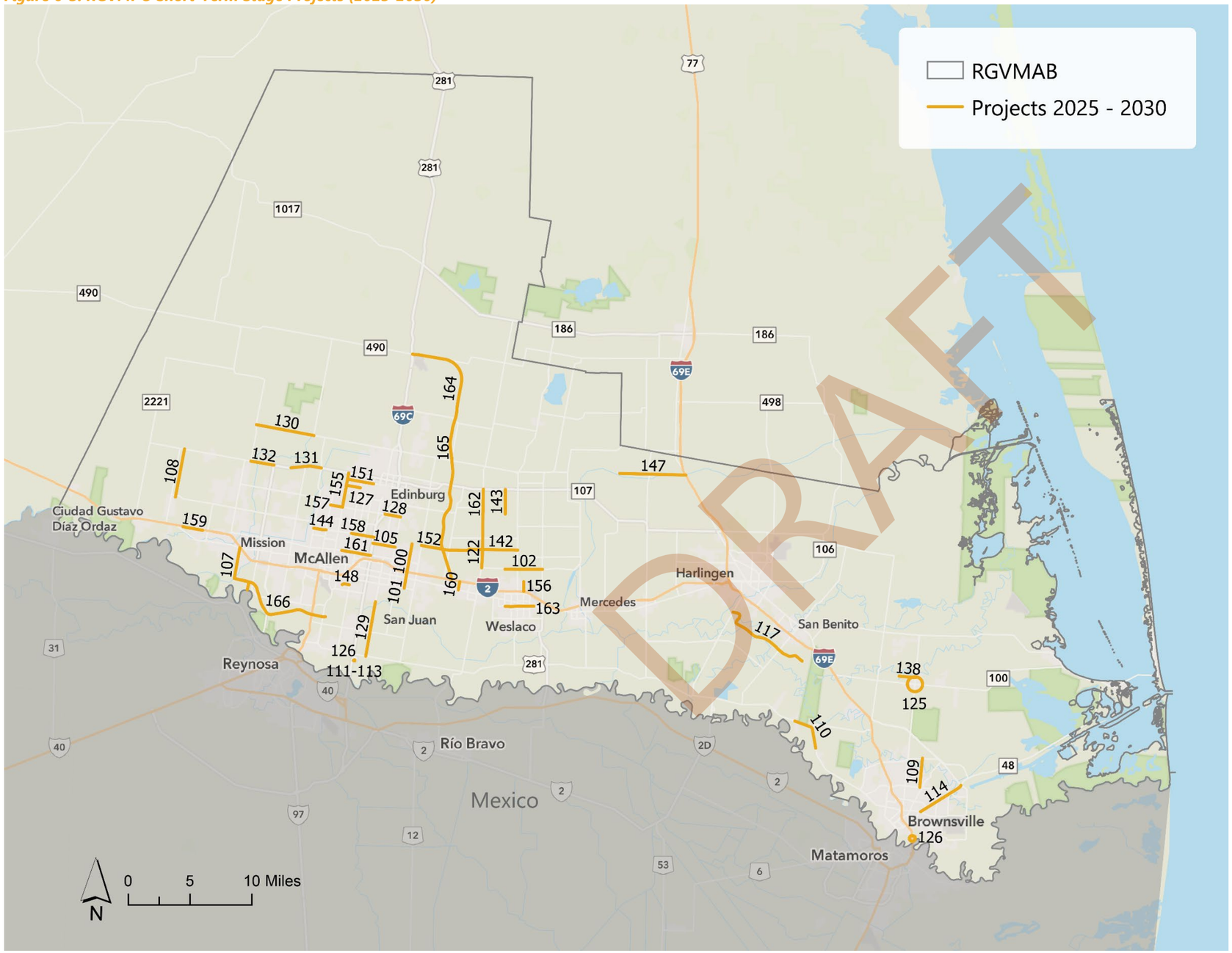


Table 6-3: RGVMPO Short-Term Stage Projects and Funding (2025-2030)

2045 MTP ID	Highway	From	To	Project Description	Project Phase	CSJ	Project Sponsor	Year of Expenditure Dollars (YOE)
100	CS	On Cesar Chavez from Business 83	Nolana Loop	Widen to 4 lanes	R	0921-02-405	San Juan / Alamo / HC 1-2	$4,570,000
101	CS	On Cesar Chavez from Bus 83	Ridge	Widen to 4 lanes	R	0921-02-399	San Juan / Alamo / HC 1-2	$1,000,000
102	Mile 10 North	Westgate (Mile 6 W)	FM 1015	Widen to 4 lanes - Urban	E	0921-02-360	Weslaco / HC 1	$1,240,022
103	CS	On Cesar Chavez from Bus 83	Ridge	Widen to 4 Lanes	E	0921-02-399	San Juan / Alamo / HC 1-2	$249,994
104	CS - Cesar Chavez Rd	On Caesar Chavez from Business 83	Nolana Loop	Widen to 4 Lanes	E	0921-02-405	San Juan / Alamo / HC 1-2	$1,151,217
105	Eldora Rd	FM 3362 (Jackson Rd)	Veterans Blvd (I Rd)	Divided Urban Section	R	0921-02-403	HC 2	$1,200,000
106	CS	On Mile 10 N from Mile 6 (Westgate)	FM 1015	Widen from 2 to 4 lanes	R	0921-02-360	Hidalgo County	$2,200,000
107	CS - Inspiration Rd/ Military Pkwy Loop	IH-2	FM 1016	Widen from 2 to 4 lane Divided	R,E	0921-02-395	Hidalgo County	$3,000,000
108	CS	On Liberty Blvd, from Mile 3 Rd	FM 2221	Construct 2 lanes with shoulders (on new location from mile 4 to FM 2221)	R	0921-02-322	HC 3	$2,030,000
109*	Dana Road	FM 802	FM 3248	Widen roadway and add sidewalks	E	0921-06-330	City of Brownsville	$517,440
110	US 281	0.05 Mi W of FM 1577	FM 1421	Widen from 2 lanes to 4 lanes rural	C	0220-04-049	TxDOT	$12,000,000
111	Pharr Bridge Dock Expansion Phase I	At Pharr/Reynosa Int'l Bridge	0	Dock Expansion Phase I	C	0921-02-424	Pharr	$14,577,764
112	Pharr Bridge Dock Expansion Phase II	At Pharr/Reynosa Int'l Bridge	0	Dock Expansion Phase II	C	0921-02-425	Pharr	$13,610,000
113	Pharr Bridge Commercial Staging Site	At Pharr/Reynosa Int'l Bridge	0	Pharr Commercial Vehicle Staging Area	C	0921-02-423	Pharr	$7,500,000
114	SH 48	SH 4	FM 511	Proposed 6 lanes with raised median	C	0220-05-076	TxDOT	$31,408,160
115*	West Rail Trail	West Blvd on Palm Blvd @ Rail Line	I-69E SB Frontage Road, W. of Old Alice Road	Construct Multimodal Facility	C, E	0921-06-293	CCRMA	$6,900,000
116 (not mapped)	FM 1423	Minnesota Rd	IH-2	Widen and reconstruct roadway (2 to 6 lanes) divided urban	C & CE	1427-01-037	TXDOT	$28,202,304
117	US 281	FM 732	FM 1577	Widen to 4 Lane Rural	C	0220-04-050	TxDOT	$8,890,000
118	Outer Parkway	IH 69E	FM 106/General Brant Rd	New Location - Controlled Access 4 lane Toll Facility	E	0921-06-283	CCRMA	$2,800,000
119	Mile 3 N (Phase II)	Tom Gill Road	FM 2221	New Location 2 Lane Rural Roadway		0921-02-332	HC 3	$7,190,000
120	Mile 1 East	Bus 83	Mile 8 North	Reconstruct & widen to urban 2 lanes & shoulders		0921-02-254	Mercedes	$10,900,896
121	Nolana Loop (S1)	FM 1426 (Raul Longoria)	FM 907	Widen to 4 Lane Divided	C & E	0921-02-361	HC 2 / McAllen	$13,340,418
122	FM 493 (La Blanca)	Mile 14 N Rd	Mile 10 N Rd	Widen to 4 Lane Divided	C	0863-01-048	HC 1-4	$8,330,000
123	FM 1015	Mile 12 N Rd	SH 107	Widen to 4 Lane Divided 1228-03-900	C	1228-03-041	HC 1/ Edcouch	$8,600,000

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2045 MTP ID	Highway	From	To	Project Description	Project Phase	CSJ	Project Sponsor	Year of Expenditure Dollars (YOE)
124 (not mapped)	SH 107	FM 1425	West Levee	Reconstruct and Widen to 4 lane rural	C	0342-02-052	TxDOT	$49,958,751
125*	Los Fresnos Hike and Bike Trail	Circles the City of Los Fresnos	0	Establish Hike and Bike Trail	C	0921-06-334	City of Los Fresnos	$3,511,436
126	Veterans International Bridge at Los Tomates	CBP Primary Inspection Lanes	CBP Primary Inspection Lanes	Expansion of primary lanes for passenger vehicles.	C, E	0921-06-313	CCRMA	$16,778,845
127	Freddy Gonzalez	SH 336 (10th St)	FM 2061 (McColl Rd)	Widen to 5 Lane with traffic street improvements	R	0921-02-440	Edinburg	$560,000
128	Trenton Rd	US 281	FM 1426 (Raul Longoria)	Construct 4 Lane	R	0921-02-442	HC 4/ Edinburg	$715,000
129	I Rd	Rancho Blanco	Military Hwy	Construct 2 Lane w/ Shoulders		0921-02-363	Pharr/San Juan/ HC 2	$11,698,586
130	FM 1925	FM 681	Wallace Rd	Proposed 4 lanes curb and gutter	C	1803-01-095	HC 3	$24,000,000
131	SH 107	FM 681	FM 2220	Widen to 6 lane with raised median	C	0528-01-116	HC 3	$15,510,006
132	FM 681	FM 2221	SH 107 (Conway)	Widen to 6 lane with raised median		0669-01-060	HC 3	$8,388,750
133	Cesar Chavez	Bus 83	Ridge	Widen to 4 lanes	C & CE	0921-02-399	San Juan / Alamo / HC 1-2	$6,848,200
134	Cesar Chavez Rd	Business 83	Nolana Loop	Divided Urban Section		0921-02-405	San Juan / Alamo / HC 1-2	$25,202,068
135	Inspiration Rd/ Military Pkwy Loop	IH-2	FM 1016	Widen to 4 Lane Divided	C	0921-02-395	Mission / McAllen / Hidalgo	$22,253,200
136	Liberty Blvd (Phase II)	Mile 3 Rd	FM 2221	Construct 2 lanes roadway with shoulders (On New Location from Mile 4 to FM 2221)	C,CE, R	0921-02-322	HC 3	$10,175,384
137	Eldora Rd	FM 3362 (Jackson Rd)	Veterans Blvd (I Rd)	Divided Urban Section	C	0921-02-403	Pharr/San Juan/HC 2	$13,722,559
138	Whipple Rd	On Whipple Rd, FM 1847	FM 1575	Proposed 2 lane roadway with continuous left turn lane	C & CE	0921-06-292	CCRMA	$5,703,727
139 (not mapped)	CS	On Old Alice Road, SH 100	Sports Park Blvd	Widen from 2 lane to 4 lane Urban Roadway	C & CE	0921-06-290	Cameron County	$19,899,794
140* (not mapped)	West Blvd	Palm Blvd.	US 281 / Boca Chica Blvd	Construct Trail	C		CCRMA	$1,945,500
141	Mile 10 North	Westgate (Mile 6 W)	FM 1015	Widen to 4 lanes - Urban	CE & C	0921-02-360	Weslaco / HC 1	$13,894,434
142	Nolana Loop (S 2-4) - ROW	FM 907	FM 88	Widen to 4 Lane Divided	R	0921-02-169	HC 1-2	$3,500,000
143	Mile 6 W Rd	SH 107	Mile 14 1/2	Widen to 4 Lane	C & CE	0921-02-448	HC 1	$12,000,000
144	Nolana Loop	FM 2220 (Ware Rd)	FM 1926 (23rd St.)	Widen to 6 Lane		0921-02-396	McAllen	$3,730,959
145*	Dana Road	FM 802	FM 3248	Widen roadway and add sidewalks	C		City of Brownsville	$13,618,176
146 (not mapped)	Indiana Ave Realignment	0.1 Mile North of California Rd.	0.62 Mile North of F.M. 1419	Realignment, construct 2 lane rural roadway	C	0921-06-305	CCRMA	$3,848,500
147	FM 1925	IH 69E	Cameron/Hidalgo County Line	New Location 4 lane roadway			CCRMA	$35,000,000
148	E Yuma Ave	Jackson Rd	McColl Rd	Widen to 4 Lane Urban with siphon		0921-02-398	McAllen	$2,101,363
149	Freddy Gonzalez	SH 336 (10th St)	FM 2061 (McColl Rd)	Widen and Reconstruct Roadway (2 to 4 Lanes) Divided Urban		0921-02-440	Edinburg	$6,370,467

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2045 MTP ID	Highway	From	To	Project Description	Project Phase	CSJ	Project Sponsor	Year of Expenditure Dollars (YOE)
150	Trenton Rd	US 281	FM 1426 (Raul Longoria)	Construct 4 Lane	C	0921-02-442	Edinburg / HC 4	$12,864,094
151	Sprague Ave	Sugar Rd	SH 336 (N 10th St)	Widen to 4 Lane		0921-02-466	Edinburg	$5,643,323
152	Nolana Loop (S2)	FM 907	FM 1423	Widen to 4 Lane Divided	C	0921-02-460	HC 1-2	$3,974,259
153	Nolana Loop (S3)	FM 1423	FM 493	Widen to 4 Lane Divided	C	0921-02-461	HC 1	$5,223,179
154	Nolana Loop (S4)	FM 493	FM 88	Widen to 4 Lane Divided	C	0921-02-169 Pending new CSJ	HC 1	$4,149,299
155	SH 336 (10th st)	Trenton Rd	SH 107	Widen to 6 Lanes			Edinburg / McAllen	$9,976,868
156	Mile 4 1/2 W Rd	US 83	Mile 9 N Rd	Widen to 4 Lane Divided		0921-02-458	Weslaco	$2,447,001
157	Trenton Rd	FM 1926 (23rd st)	SH 336 (10th St)	Widen 6 lanes divided with landscaped median		0921-02-468	McAllen	$3,346,151
158	FM 3461 (Nolana)	FM 2061 (McColl Rd)	US 281	Widen to 6 Lanes		1802-02-008	McAllen / Pharr	$9,922,126
159	US 83	FM 1427 (Abram)	0.5 Mi E of Bus 83	Widen to 6 lanes		0039-02-068	TXDOT	$5,353,842
160	Hutto Rd	US 83	Bus 83	Widen to 4 Lane		0921-02-456	Donna	$2,141,126
161	FM 495	2nd St (McAllen)	US 281	Widen to 6 lane divided			McAllen / Pharr	$13,049,990
162	FM 493 (La Blanca)	SH 107	Mile 14 N Rd	Widen to 4 Lane Divided		0863-01-051	HC 1-4	$9,128,356
163	6th St (Weslaco)	Westgate Drive	Bus 83	Widen to 4 Lane		0921-02-449	Weslaco	$7,035,129
164	SH 68 - Phase II	FM 1925	IH 69C / US 281	Divided Rural Highway		3629-01-002	TxDOT	$135,687,307
165	SH 68 - Phase III	IH 2 / US 83	IH 69C / US 281	Main Lanes with Overpasses		3629-01-003	TxDOT	$550,103,452
166	SH 365 (Phase II)	FM 396 (Anzalduas Highway)	FM 1016 (Conway Rd)	Toll improvement being a 4 lane, controlled access facility		3627-01-002	HCRMA	$53,637,812
167	Pharr Bridge Agricultural Lab	@ Pharr Int'l Bridge	0	Agricultural Lab and Training Center		0921-02-943	Pharr	$12,428,552

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Figure 6-4: Medium-Term Stage Projects (2031-2036)

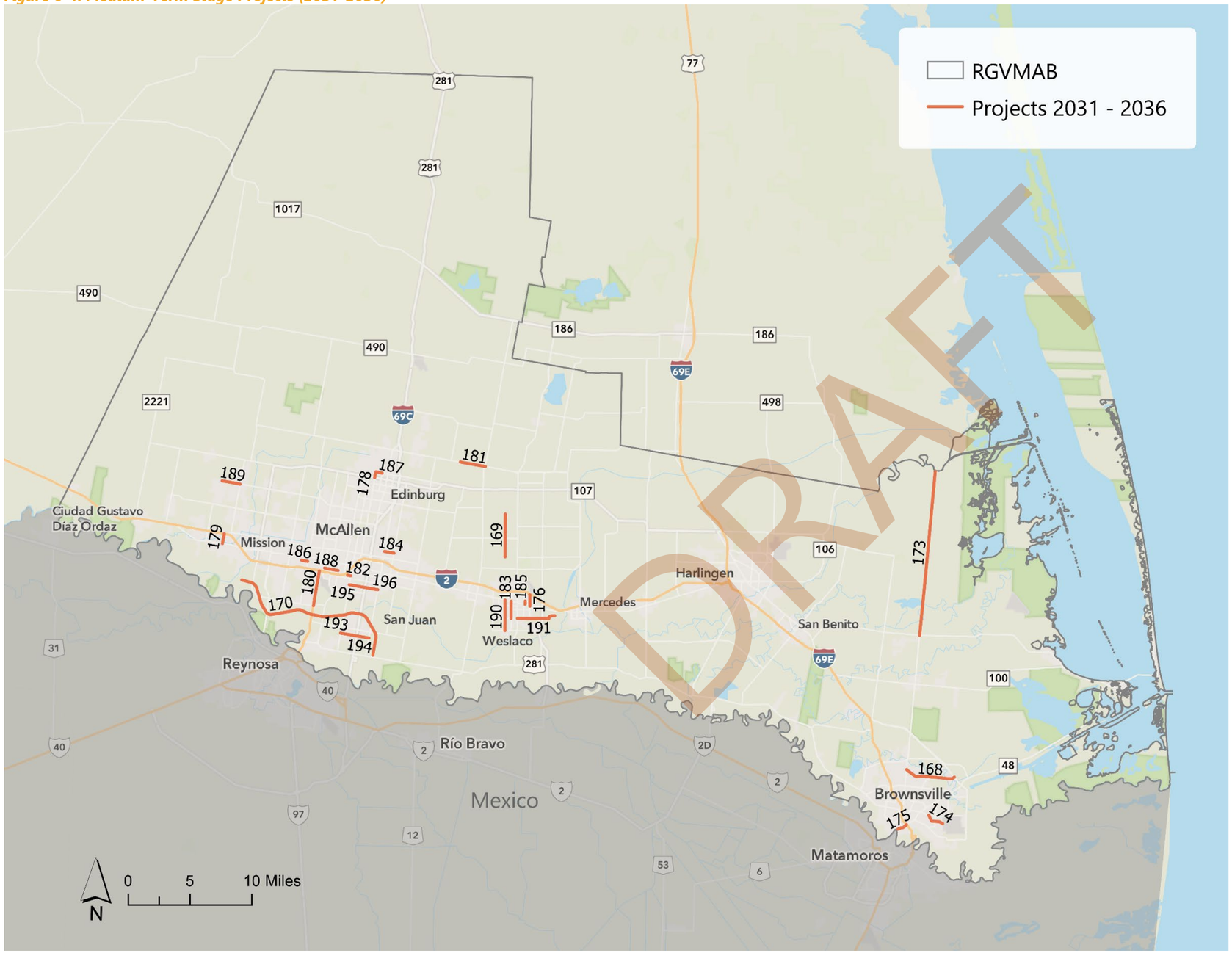


Table 6-4: RGVMPO Medium-Term Stage Projects and Funding (2031-2036)

2045 MTP ID	Highway	From	To	Project Description	Project Phase	CSJ	Project Sponsor	Year of Expenditure Dollars (YOE)
168	CS	On Morrison Rd, from FM 1847	FM 511	Construct 4 lane Urban Roadway.	E	0921-06-291	CCRMA	$500,000
169	CS	On Mile 6 W from SH 107	Mile 11 N	Widen to 4 Lane	R	0921-02-286	HC 1	$4,396,313
170	SH 365 (Ultimate Construction)	US 281 Military Highway	FM 1016 (Conway Rd)	Expansion from a 4-lane to 6-lane controlled access toll facility (constructing an additional 2-lanes)	PE		HCRMA	$3,841,693
171	CS Morrison Rd	On Morrison Rd, from FM 1847	FM 511	Construct 4 lane urban roadway	C	0921-06-291	CCRMA	$20,992,000
172 (not mapped)	IH-69E Grade Separation	.5 MI N of University Blvd	.5 MI S of University Blvd	Construct a grade separation	C		TxDOT	$14,080,000
173	FM 1847	FM 510	FM 2925	Expand to 4 lanes-rural	C	1801-02-020	TxDOT	$35,200,000
174*	Billy Mitchell Blvd FM 2519	SH 4	Jose Colunga Street	Construct raised median, sidewalks, pavement overlay.	C	0487-01-015	TxDOT/ Brownsville	$1,920,000
175	International Blvd	IH-69E	Washington St.	Install raised median	C	1504-01-038	TxDOT/ Brownsville	$1,080,000
176	Airport Drive (Weslaco)	Bus 83	US 83	Widen to 4 Lane		0921-02-451	Weslaco	$3,349,295
177	Mile 6 W Rd	Mile 14 1/2	Mile 11 N	Widen to 4 Lane		0921-02-447	HC 1	$22,612,489
178	Sugar Rd	SH 107	Schunior Ave	Widen to 4 Lane		0921-02-467	Edinburg	$1,860,720
179	FM 2062 (Bentsen Palm)	US 83 S	Bus 83	Widen to 4 Lane Divided		0921-02-455	Mission	$3,163,223
180	SP 115 (S 23rd St)	US 83	FM 1016 (Military Hwy)	Widen to 6 Lane Divided Urb		1804-01-057	McAllen/Hidalgo/HC 2	$22,414,450
181	FM 1925	3rd Street	FM 493 (La Blanca)	Widen to 4 Lane Divided		1803-02-901	HC 4	$10,649,088
182	Oakland Ave	K-Center	Jackson Rd	Add 4 lanes		0921-02-462	McAllen	$452,099
183	Border Ave	S 18th St (Mile 6 N)	Bus 83	Widen to 4 Lane		0921-02-453	Weslaco	$5,809,167
184	Sioux Rd	I Rd	FM 1426 (Raul Longoria)	Widen to 4 Lane			San Juan	$2,977,151
185	Paso del Norte	Bus 83	2nd St	Widen to 4 Lane Divided			Weslaco	$1,116,432
186*	Kennedy	Ware Road (FM 2220)	Bentsen Rd	2 lane divided with bike lanes			McAllen	$3,562,220
187	Schunior Ave	Sugar Rd	4th St	Widen to 4 Lane		0921-02-463	Edinburg	$1,935,148
188	Jackson Ave	S Bicentennial Ave	S 2nd St	Widen to 4 Lane		0921-02-457	McAllen	$3,163,223
189	FM 676 (Mile 5 N)	FM 492 (Doffing)	SH 364 (La Homa Rd)	Widen to 4 Lane Rev TIP 05'06 Revised Estimate			HC 3	$5,582,159
190	Westgate	Business 83	Mile 5 N	Widen to 4 lane divided		0921-02-469	Weslaco	$20,825,206
191	Mile 6 N (18th St)	FM 88	Mile 2 W	Widen to 4 Lane		0921-02-459	Weslaco/ Mercedes/HC 1	$11,908,606
192	SH 365 (Ultimate Construction)	US 281 Military Highway	FM 1016 (Conway Rd)	Expansion from a 4-lane to 6-lane controlled access toll facility (constructing an additional 2-lanes)			HCRMA	$81,401,281
193	Las Milpas Rd West	Jackson Rd	Cage Rd	Widen to 4 lane curb and gutter rd		0921-02-434	Pharr	$5,595,923
194	Las Milpas Rd East	Cage Rd	I Rd	Widen to 4 lane curb and gutter rd		0921-02-435	Pharr	$5,595,923
195	Moore Rd West	Jackson Rd	Cage Rd	Widen to 5 lane curb and gutter road with left turn lane		0921-02-436	Pharr	$8,327,387
196	Moore Rd East	Cage Rd	I Rd	Widen to 5 lane curb and gutter road with left turn lane		0921-02-437	Pharr	$8,327,387

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Figure 6-5: Long-Term Stage Projects (2037 – 2045)

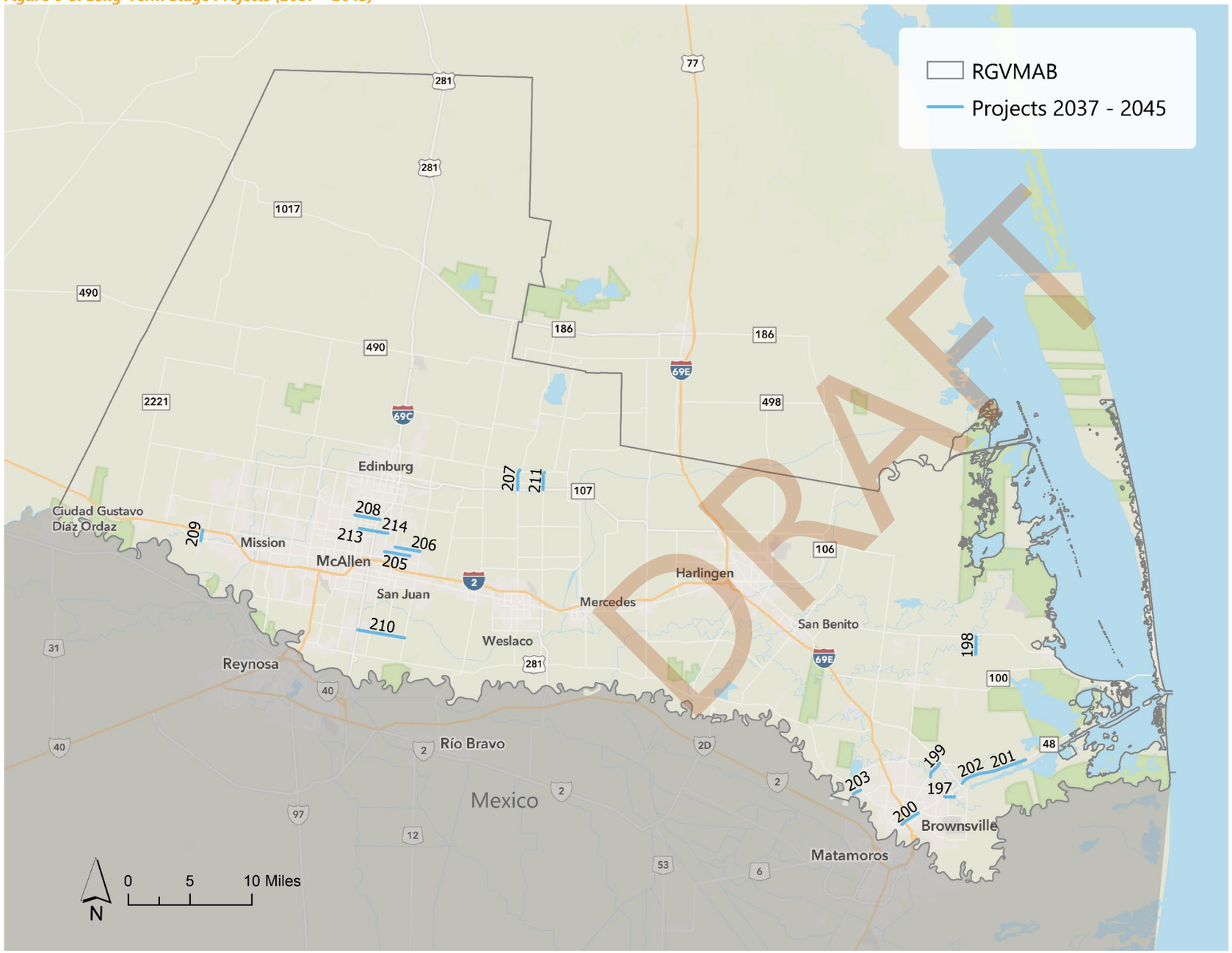


Table 6-5: Long-Term Stage Projects and Funding (2037 – 2045)

2045 MTP ID	Highway	From	To	Project Description	Project Phase	CSJ	Project Sponsor	Year of Expenditure Dollars (YOE)
197	Coffee Port Road	FM 802	SH 48 N. Central Ave.	Full road reconstruction Road Reconstruction and add shoulders	C	0921-06-329	City of Brownsville	$17,419,776
198*	San Roman Rd.	FM 2480	SH 100	Full road reconstruction	C		CCMRA	$3,955,546
199	Old Port Isabel Rd	Morrison Road	240' NE of Randy Lee Rd.	Full road reconstruction	C		CCRMA	$5,280,000
200	14th Street	Security Dr.	Tyler Street	Reconstruction of Roadway	C	0921-06-332	City of Brownsville	$6,220,800
201	SH 48	1/4-mile East of FM 511	1/4-mile East of entrance to the Fishing Harbor	Construct 2 lane frontage road and ramps (East bound)	C		TxDOT	$15,200,000
202	SH 48	1/4-mile East of entrance to the Fishing Harbor	FM 511/SH 48 overpass	Construct 2 lane frontage road and ramps (West bound)	C		TxDOT	$15,840,000
203	FM 3248 Extension to Flor the Mayo Intl Bridge	US 281	Flor de Mayo Bridge	Construct 4 divided highway to the Flor de Mayo Intl. Bridge	C	0921-06-331	CCRMA	$10,880,000
204	US 77/83 South Parallel Corridor	FM 1479	FM 1577	Widen to 4 lanes			Cameron County	$36,790,733
205	Sioux Rd	Cesar Chavez Rd On Sioux Rd from N I RD	I Road (Veterans Blvd) Cesar Chavez Rd	Divided Urban Section		0921-02-464	San Juan	$25,525,288
206	East Eldora Rd (Segment II)	FM 907 (Alamo Rd)	I Rd	Divided Urban Section		0921-02-454	San Juan/ HC 2	$10,939,409
207	FM 88	SH 107	0.2mi N of FM 1925	Widen to 4 Lane Divided		0698-02-043	Elsa/ HC 1	$13,907,230
208	Alberta Rd	McColl Rd	US 281	Widen to 4 Lane		0921-02-452	Edinburg	$9,372,339
209	Abram Rd	Bus 83	US Expressway 83	4 Lane Divided Urban Section		0921-02-450	Palmview / HC 3	$9,116,174
210	FM 3072 (Dicker Rd)	S Cage Blvd	FM 907 (Alamo Rd)	Widen to 4 Lane Divided		3098-01-018	San Juan / Pharr	$18,110,800
211	FM 1015	SH 107	FM 1925	Widen to 4 Lane Divided		1228-02-031	Edcouch / HC 1	$6,313,457
212	International Bridge Trade Corridor (IBTC) - Phase II ultimate	365 Tollway at FM 493	IH-2	6 lane non-tolled controlled access facility with 4 lane access roads		0921-02-202	HCRMA	$275,000,000
213	Minnesota Rd West	Jackson Rd	Cage Rd	Widen to 3 lane curb and gutter road with shoulders and left turn lane		0921-02-932	Pharr	$8,857,544
214	Minnesota Rd East	Cage Rd	I Rd	Widen to 3 lane curb and gutter road with shoulders and left turn lane		0921-02-933	Pharr	$8,857,544

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As mentioned at the beginning of this chapter, Table 6-6 represents the unconstrained, unfunded projects. These projects are included as illustrative regionally significant projects to support the consideration of future planning efforts.Total Project Costs are listed for these projects without inflation for future year dollars.

Table 6-6: RGVMPO Projects Unfunded

2045 MTP ID	Highway	From	To	CSJ #	Project Description	Project Sponsor	Total Project Cost
215	SH 48				Build an SH 48 overpass (with ramps) at the entrance to the Next Decade LNG facility.	TxDOT	$16,777,500
216	SH 550 Connector	IH-69E	IH-169E		Construct direct connector	CCRMA	$47,740,000
217	Flor de Mayo Bridge	FM 3248	US 281		Construct International Bridge	CCRMA	$22,370,000
218	Old Port Isabel Rd	SH 550	SH 100		Construct two lane rural	CCRMA	$22,870,000
219	N. Vermillion Ave.	SH 4	FM 802		Reconstruct roadway and add shoulders	Cameron County	$6,891,563
220+	IH-69E	13th Street	14th Street		Construct a Park and Ride facility under IH-69E	City of Brownsville	$3,355,500
221+	FM 3248	On FM 3248, .2 miles west of IH-69E			Construct a North-West side transit transfer station	City of Brownsville	$1,648,125
222*	Palo Alto Hike and Bike Trail	Palo Alto Battlefield National Historical Park	Eco Tourism at Laguna Vista		Construct Hike and Bike trail	CCRMA	$8,948,000
223+	West Blvd.	US 281/ Boca Chica Blvd.	IH-69E SB Frontage Road, W. of Old Alice Rd.		Construct Multimodal Facility	CCRMA	$13,422,000
224	ITS changeable message signs	IH-69E various locations			Install ITS changeable message signs	TxDOT	$1,677,750
225	Pharr Intl Bridge	At Pharr/Reynosa Intl bridge		0921-02-255	Improvements (cold storage) at Pharr/Reynosa Intl bridge	County	$484,352
226	Trenton Rd	SH 336 (10th St)	FM 2061 (McColl Rd)		Widen 6 lanes divided with landscaped median	Edinburg/ McAllen	$1,682,160
227	FM 907 (Alamo Rd)	SH 107	Nolana	1586-01-075	Proposed 4 Lanes curb and gutter	County 2-4	$32,184,000
228	FM 907 (Alamo Rd)	FM 1925 (Monte Cristo)	SH 107		Widen to 4 Lanes	County	$7,520,775
229	US 83	0.25 Mi W of FM 2221	FM 1427		Widen to 6 lanes	TXDOT	$17,049,474
230	Bryan Rd	FM 676 (Mi 5 N)	FM 495		Widen to 4 Lane Divided	Alton/Palmhurst/Mission	$12,033,240
231	Sioux Rd (La Vista Ave)	FM 2061 (McColl Rd)	US 281		Widen to 4 Lane	McAllen / Phr / County	$5,414,958
232	Mile 17 N Rd	Mile 6 West	FM 491		Widen to 4 Lane	County	$17,083,670
233	Pike Blvd	Mile 6 W (Westgate)	US 83		Widen to 4 Lane Divided	Weslaco	$5,715,789
234	SH 336 (10th St.)	S 2nd St.	US 281 Military Hwy (widening of Bridge)	0621-01-095	Widen to 6 Lanes Divided 2966-01-009	McAllen / Hidalgo / County 2	$15,737,976
235	Daffodil Ave	Taylor Rd	FM 2220 (Ware Rd)		Widen to 4 Lane	McAllen / Mission	$3,038,393
236	FM 495	Conway Ave	FM 1926 (23rd Street)		Widen to 6 lane divided	McAllen	$16,721,600
237	FM 495	FM 1423 (Val Verde)	FM 1015		Extend 2 Lane FM Road	County	$23,480,240
238	Roosevelt (Mile 12 1/2 N Rd.)	FM 1423	FM 88		Widen to 4 Lane	County	$15,884,816
239	Wisconsin Rd	Main street	SH 336 (10th St)		Construct new 4 Lanes Urban	McAllen	$1,184,014
240	Cesar Chavez	FM 2128 (Schunior)	Sioux Rd		Widen to 4 Lane	County	$18,881,951
241	FM 492	US 83	FM 2221		Widen to 4 Lane	County	$19,481,378
242	FM 492 (Doffing)	FM 1924 (Mile 3 N)	FM 2221		Widen to 4 Lane Divided	Palmview	$12,033,240

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2045 MTP ID	Highway	From	To	CSJ #	Project Description	Project Sponsor	Total Project Cost
243	Violet Ave (Minnessota)	FM 2061 (McColl Rd)	US 281		Widen to 4 Lane	McAllen	$5,414,958
244	Jackson Rd	FM 1925 (Monte Cristo)	Chapin Rd		Widen to 4 Lane	Edinburg	$4,512,465
245	Victoria Rd	Mile 10 N Rd	US 83		Widen to 4 Lane	Donna / county	$4,512,465
246	FM 2993 (N Conway)	FM 1925 (Monte Cristo)	SH 107		Widen to 4 Lane Rural	County	$9,024,930
247	Sugar Rd	FM 495	Sam Houston Blvd		Widen to 4 Lane Divided	Pharr	$6,016,620
248	FM 491 (Base Line)	Mile 10 N Rd	SH 107		Widen to 4 Lane Divided	La Villa / county	$19,481,378
249	Daffodil Ave	FM 2220 (Ware Rd)	FM 1926 (23rd Street)		Widen to 4 Lane	McAllen	$3,008,310
250	FM 1925	FM 2993 (N Conway)	FM 2220 (Ware Rd)		Widen to 4 Lane Rural	County	$10,829,916
251	El Rancho/Hall Acres	2nd St (McAllen)	S Cage Blvd		Widen to 4 Lane	McAllen / Pharr	$7,219,944
252	Military Hwy	S Cage Blvd	Mile 3 E - Cameron County Line	0220-01-901 0220-01-902 0220-01-903 0220-02-900 0220-01-023	Widen to 4 Lane Divided Rural	County	$67,471,521
253	Owassa Rd	I road	FM 1426 (Raul Longoria)		Widen to 4 Lane	Phr/SJ/Co	$6,124,300
254	FM 1425	SH 107	MILE 9 N		Widen to 4 Lane Divided	County	$17,982,810
255	FM 491 (Base Line)	SH 107	FM 1925 (Monte Cristo)		Widen to 4 Lane Divided	La Villa	$4,512,465
256	Goodwin Rd	US 83	FM 1924 (Mile 3 N)		Widen to 4 Lane	County	$6,618,282
257	Pleasantview Dr (Mile 3 1/2 W Rd)	Mile 5 N	Mile 9 N		Widen to 4 Lane Divided	Weslaco	$12,033,240
258	Mile 11 N Rd	Mile 6 West	FM 491		Widen to 4 Lane	County	$17,982,810
259	Mile 6 1/2 W Rd	Mile 12 North	Mile 5 N Rd		Widen to 4 Lane	Weslaco / County	$20,979,945
260	Tower Rd	US 83	SH 107		Widen to 4 Lane	Alamo	$21,579,372
261	Abram Rd	US 83	FM 2221		Widen to 4 Lane	Palmview / County	$17,982,810
262	Trenton Rd	FM 1426 (Raul Longoria)	FM 1423 (Val Verde)		Construct 4 Lane	County	$12,935,733
263	FM 1016 (S Conway)	US 83	Military Hwy		Widen to 6 Lanes	Mission / county	$7,075,586
264	Sugar Rd	Schunior Ave	FM 1925		Widen to 4 Lane	County	$6,016,620
265	FM 907 (Alamo Rd)	Ridge Rd	Military Hwy		Widen to 4 Lane Divided	County	$17,982,810
266	Wisconsin Rd	.25 miles E of 2nd St	US 281		Widen to 4 Lane	Edinburg	$8,724,099
267	Bentsen Palm Drive (FM 2062)	1 Mile Line Rd	US 83		Widen to 4 Lane	Palmview	$615,072
268	Mon Mack Rd.	SH 107	FM 1925		Widen to 4 lane	Edinburg	$7,520,775
269	8th St	Mile 5 1/2 W Rd	Airport Dr		Widen to 4 Lane Divided	Weslaco	$4,512,465
270	Owassa Rd	FM 1426 (Raul Longoria)	FM 907		Widen to 4 Lane	County	$12,114,000
271	Mile 12 N Rd	Mile 6 West	FM 1015		Widen to 4 Lane	County	$9,024,930
272	Los Ebanos Rd	FM 1924 (3 Mile N)	Bus 83		Widen to 4 Lane	Palmhurst/Mission/County	$9,024,930
273	Alberta Rd	I road	FM 1423 (Val Verde)		Widen to 4 Lane	County	$15,285,389

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2045 MTP ID	Highway	From	To	CSJ #	Project Description	Project Sponsor	Total Project Cost
274	Nebraska Ave (Alamo)	Cesar Chavez	Border Ave		Widen to 4 Lane	Alamo	$7,520,775
275	Goodwin Rd	Bus 83	FM 492		Widen to 4 Lane	County	$3,008,310
276	FM 2062 (Bentsen Palm)	Bus 83 S	Bentsen State Park		Widen to 4 Lane Divided	County	$8,122,437
277	FM 491 (Base Line)	US 83	Mile 10 N Rd		Widen to 4 Lane Divided	Mercedes	$9,024,930
278	FM 493 (La Blanca)	SH 107	FM 1925 (Monte Cristo)		Widen to 4 Lane Divided	La Blanca	$5,715,789
279	FM 1425	US 83	Mile 9 N Rd		Widen to 4 Lane Rural	County	$5,414,958
280	Seminary Rd	FM 1925	FM 2812 (W of US 281)		Widen to 4 lane	Edinburg	$8,573,684
281	Russell Rd	Bus 281 (Closner)	Doolittle Road		Widen to 4 lane	Edinburg	$3,910,803
282	Doolittle Rd	FM 2128 (Richardson Road)	FM 1925		Widen to 4 lane	Edinburg	$6,016,620
283	Doolittle Rd	FM 1925	FM 2812		Widen to 4 Lane Divided w/ Br	Edinburg / County	$10,529,085
284	Schunior Ave	Mon Mack Rd	Sugar Rd		Widen to 4 Lane	Edinburg	$4,512,465
285	FM 2812	US 281	2 mi E of US 281		Widen to 4 Lane with left turn lane	Edinburg	$8,076,000
286	FM 676 (Mile 5 N)	Jara Chinas	FM 492		Extend 2 Lane FM Road	County	$16,436,168
287	SP 433 (Main St-Donna)	US 83	Bus 83		Widen to 4 Lane Divided	Donna	$2,460,288
288	El Gato Rd	S Cage Blvd	FM 907 (Alamo Rd)		Widen to 4 Lane	Pharr / San Juan	$11,431,578
289	Military Hwy	FM 494 (Shary Rd)	FM 1427 (Abram)		Construct 4 Lane	Mission	$17,982,810
290	28th St (Mile 5 1/2 N Rd)	S. Bridge St	FM 1015		Widen to 4 Lane Divided	Weslaco	$4,512,465
291	Border Ave	Bus 83	Mile 10 N Rd		Widen to 4 Lane Divided	Weslaco	$7,821,606
292	Moore Field Rd	FM 2221	US 83		Widen to 4 Lane	County	$19,481,378
293	Inspiration Rd	2 Mile Line Rd	US 83		Widen to 4 Lane	Mission	$8,724,099
294	Delta Blvd	US 83	Mile 9 N Rd		Construct new 4 Lane	Weslaco	$2,460,288
295	Tower Rd	Bus 83	Ridge Rd		Widen to 4 Lane	Alamo	$2,306,520
296	Jara Chinas	FM 2221	US 83		Widen to 4 Lane Divided Rural	La Joya	$18,762,065
297	Russell Rd	Doolittle	FM 907 (Alamo Rd)		Widen to 4 Lane	County	$4,512,465
298	Wichita Ave	SH 336 (S 10th St)	2nd St		Widen to 4 Lane	McAllen	$1,845,216
299	Oxford (Hobbs)	Ware Rd	FM 1926 (Depot Rd)		Construct New 4 Lane	McAllen	$3,609,972
300	Colbath Ave	FM 2220	Taylor Rd		Widen to 4 Lane	McAllen	$3,008,310
301	Mile 6 N (Mercedes)	FM 491 E to Mile 1 East	Mile 1 East		Widen to 4 Lane	Mercedes	$1,537,680
302	Nolana Loop	FM 494 (Shary Rd)	Taylor Rd		Construct New 4 Lane	Mission / Palmhurst	$768,840
303	FM 1427	US 83	Abram		Widen to 4 Lane Divided	County	$13,487,108
304	Rooth Rd	Russell Rd	FM 1925 (Monte Cristo)		Widen 4 lanes with left turn lane	McAllen	$3,008,310
305	Rooth Rd	SH 107	Russell Rd		Widen 4 lanes with left turn lane	McAllen	$4,512,465
306	Trenton Rd	FM 1423 (Val Verde)	FM 1015		Construct New 4 Lane Divided	County	$21,579,372
307	Mile 4 1/2 W Rd	SH 107	Mile 9 N Rd		Widen to 4 Lane	County	$22,478,513

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2045 MTP ID	Highway	From	To	CSJ #	Project Description	Project Sponsor	Total Project Cost
308	Mile 1 East	Mile 11 North	US 83		Improve widen to 4 Lane	Mercedes	$11,130,747
309	FM 1427	Abram E & N	Bus 83		Widen to 4 Lane Divided	Peñitas / Mission	$6,317,451
310	FM 2812 W	Seminary Rd	US 281		Construct new 4 lane	Edinburg	$3,609,972
311	Kennedy Ave	Taylor Rd	Bentsen Rd.		Construct New 4 Lane	McAllen	$4,519,868
312	Inspiration Rd	US 83	Military Hwy		Widen to 4 Lane	Mission	$9,325,761
313	Alberta Rd	US 281	I road		Widen to 4 Lane	County	$2,152,752
314	FM 493 (Salinas)	Champion St	Military Hwy (US281)		Widen to 4 Lane	TxDOT	$16,092,000
315	Thomas Road	FM 2061 (McColl Rd)	FM 2557 (Stewart Rd)		Construct 52-foot urban roadway with curb and gutter	County	$15,671,600
316	29th street	Oxford Ave	SH 107		2 lane with center turn lane	McAllen	$5,103,750
317	Mile 5 N	FM 1015	Westgate		Widen to 4 lane divided	Weslaco / County 1	$20,828,943
318	West Eldora Rd	FM 3662 (Jackson Rd)	US 281		Divided Urban Section	Pharr	$7,947,400
319	US 83 @ 2nd St	FM 2061 (McColl Rd)	SH 336 (10th St)	0039-17-188	Convert existing Underpass to diamond intersection Overpass	McAllen / County 2	$29,843,590
320	Anzalduas Int'l POE	@ Anzalduas Int'l POE			Construction of two additional northbound passenger lanes	Anzalduas Int'l Bridge	$6,688,600
321	FM 1423 (Val Verde)	Roosevelt	SH 107	1427-01-032	Proposed 4 Lanes curb and gutter	County 4	$32,424,000
322	Russell Rd	FM 2220	US 281			Edinburg/McAllen/County 4	$13,610,000
323	Freddy Gonzalez Dr	Ware Rd (FM 2220)	10th St (SH 336)		Construct & Widen 4 Lane Urban Roadway	McAllen / County 4	$16,424,002
324	S Jackson Rd	W Moore Rd	Bus 83		Widen to 6 lane curb and gutter road	Pharr	$16,000,000

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GROUPED PROJECTS

For projects and project types that are recurring in nature, the FHWA allows TxDOT to develop statewide groupings of projects that are identified by a statewide CSJ. Use of statewide groupings of projects allows for a more efficient method of programming and letting projects by decreasing the need to revise the TIP.

These projects typically use the funding categories discussed in Chapter 8, and are representative of a continuous, comprehensive, and coordinated effort by the Pharr District and the RGVMPO in identifying ongoing needs of the transportation system. Table 6-7 shows the statewide groupings of projects and provides a description of the type of projects that are placed in each grouping.

Table 6-7: CSJ Categories

Proposed CSJ	Grouped Project Category	Definition
5000-00-950	PE-Preliminary Engineering	Preliminary Engineering for any project except added capacity projects in a nonattainment area. Includes activities which do not involve or lead directly to construction, such as planning and research activities; grants for training; engineering to define the elements of a proposed action or alternatives so that social, economic, and environmental effects can be assessed.
5000-00-951	ROW Acquisition	ROW Acquisition for any project except added capacity projects in a nonattainment area. Includes relocation assistance, hardship acquisition, and protective buying.
5000-00-952 5000-00-957 5000-00-958	Prevention Maintenance and Rehabilitation	Projects to include pavement repair to preserve existing pavement so that it may achieve its designed loading. Includes seal coats, overlays, resurfacing, restoration, and rehabilitation done with existing ROW. Also includes modernization of a highway by reconstruction, adding shoulders or adding auxiliary lanes (e.g., parking, weaving, turning, climbing, non-added capacity) or drainage improvements associated with rehabilitation.
5000-00-953	Bridge Replacement and Rehabilitation	Projects to replace and/or rehabilitate functionally obsolete or structurally deficient bridges.
5000-00-954	Railroad Grade Separations	Projects to construct or replace existing highway-railroad grade crossings and to rehabilitate and/or replace deficient railroad underpasses, resulting in no added capacity
5800-00-950	Safety	Projects to include the construction or replacement/rehabilitation of guard rails, median barriers, crash cushions, pavement markings, skid treatments, medians, lighting improvements, highway signs, curb ramps, railroad/highway crossing warning devices, fencing, intersection improvements (e.g., turn lanes), signalization projects and interchange modifications. Also includes projects funded via the Federal Hazard Elimination Program, Federal Railroad Signal Safety

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Proposed CSJ	Grouped Project Category	Definition
		Program, or Access Managements projects, except those that result in added capacity.
5000-00-956	Landscaping	Project consisting of typical ROW landscape development, establishment and aesthetic improvements to include any associated erosion control and environmental mitigation activities.
5800-00-915	Intelligent Transportation System Deployment	Highway traffic operation improvement projects including the installation of ramp metering control devices, variable message signs, traffic monitoring equipment and projects in the Federal ITS/IVHS programs.
5000-00-916	Bicycle and Pedestrian	Construction or rehabilitation of bicycle and pedestrian lanes, paths, and facilities.
5000-00-917	Safety Rest Areas and Truck Weigh Stations	Construction and improvement of rest areas and truck weigh stations.
5000-00-918	Transit Improvements and Program	Projects include the construction and improvement of small passenger shelters and information kiosks. Also includes the construction and improvement of rail storage/maintenance facilities and bus transfer facilities where minor amounts of additional land are required and there is not a substantial increase in the number of users. Also includes transit operating assistance, acquisition of third-party transit services, transit marketing, and mobility management/coordination. Additionally, includes the purchase of new buses and rail cars to replace existing vehicles or for minor expansions of the fleet.

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7 SYSTEMS-LEVEL ANALYSIS OF PROJECTS

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Metropolitan transportation planning is concerned with more than the best way to move people and goods. The planning process also examines the interaction of proposed transportation improvements with the natural and human environment. The MTP program of projects is evaluated for its system-wide environmental resources and quality of life impacts.

A more detailed analysis of the specific impacts associated with each project is typically performed later in project development using processes defined under the National Environmental Protection Act (NEPA).

SYSTEMS-LEVEL ANALYSIS

The primary goal of the systems-level analysis is to evaluate whether potential transportation improvements will impact environment features or have negative impacts on historically disenfranchised populations (refer to Chapter 4 for equity analysis). It is intended to serve as a guide for evaluation by agencies and elected officials as projects progress through the development process. The analysis will allow the RGVMPO to prioritize projects with lessened environmental impacts. The RGVMPO currently has 186 projects planned from 2021-2045, the time period covered by this MTP. A more detailed analysis of the specific impacts associated with each project is performed later using processes that meet the requirements of the National Environmental Protection Act (NEPA). It must be noted that the analysis in this chapter does not take the place of the NEPA assessment, however, the analysis does provide the RGVMPO an initial understanding of project impacts on the region.

The systems-level analysis also includes a review of the potential mitigation activities for the impacts of these projects. The environmental mitigation analysis aims to balance the need for transportation improvements with environmental protection and to increase access to natural and cultural resources within the RGVMAB. Environmental mitigation activities should be considered throughout the planning process (i.e. project planning, design, construction, and maintenance). Prioritization should be given to projects that do not interfere with the elements identified in the analysis.

The systems-level analysis incorporates Environmental Justice Zones (EJZs) to ensure both the benefits and the burdens of new transportation projects are distributed more equitably throughout the RGVMAB. Environmental Justice was first defined in the metropolitan transportation planning process in 1994 with Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. The executive order is meant to ensure that minority and low-income populations are not adversely affected by federal actions.

Identifying potential impacts caused by these new transportation projects involves a three-step process that includes:

- Inventorying the environmental and cultural resources, minority populations, and populations near or below the poverty line.
- Assessing the potential impacts, both positive and negative, of proposed transportation improvements.
- Addressing possible mitigation activities system wide.

The following sections describe the assumptions, data, approach, and outcomes of the systems-level analysis.

Methodology

A buffer analysis was conducted for all capacity expansion projects. The buffer distance was based on potential project impact per environmental/cultural resource. For this analysis, water features have a greater buffer than other elements due to increased sensitivity to potential transportation project impacts. Not only can water features suffer impacts due to a project's proximity but can experience further externalities affecting water quality.

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Accordingly, resources were scaled by their area of influence; for example, cultural features may only be affected by a project directly adjacent to the resource while water features may be impacted from a greater distance. Table 7-1 summarizes the elements in each category and the buffer for each category.

Table 7-1: Buffer Distances for Expansion Projects

Element Type	Capacity/Expansion
Water Features (Wetlands, Rivers, and Streams)	.25 miles
Cultural Features (Cemeteries, Museums, Historic Sites, Historic Districts, Public Lands, Schools)	250 feet
Environmental Hazards (Solid Waste Sites, Brownfields, Superfund Sites, Industrial Waste)	250 feet
Colonias	50 feet

The buffer analysis creates a boundary based on input data. Each separate element was counted where they intersected the project buffer. The counts of each feature that intersects the projects buffer boundary was compiled in an ArcGIS project and provided to the RGVMPO for future planning and analysis purposes.

Polygon features counted how many times a project crossed the feature boundary. This includes floodplains (500-year and 100-year), EJZs, and above average Hispanic and Latino population block groups.

Further analysis is required to gauge what the actual impacts of these projects will be. The preliminary findings in the systems-level analysis will give the implementing agency an idea of which projects will require greater review.

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ENVIRONMENTAL MITIGATION ANALYSIS

The RGVMAB's environmental and cultural resources, including rivers and streams, wetlands, floodplains, parks, and historic sites, were inventoried and mapped. The analysis included floodplain maps from the Federal Emergency Management Agency (FEMA), wetlands maps from the U.S. Fish and Wildlife Service, historic sites from the National Register of Historic Places, and state and federal wildlife and environmental protection resources. These inventoried resources are shown in Figure 7-1 through Figure 7-4.

Table 7-2 shows the count of features that are affected by the proposed projects. Water features present the greatest potential challenge when implementing these projects due to the higher rate of interaction.

Table 7-2: Count of Potential Impacts: Environmental Assets

Element Type	Buffer Intersect Count
Water Features (Wetlands, Flood Hazards, Rivers and Streams)	1952
Cultural Features (Cemeteries, Museums, Historic Sites, Historic Districts, Public Lands, Schools)	127
Environmental Hazards (Solid Waste Sites, Brownfields, Superfund Sites, Industrial Waste)	11

Figure 7-1: RGVMAB Flood Zones & Potential MPO Projects

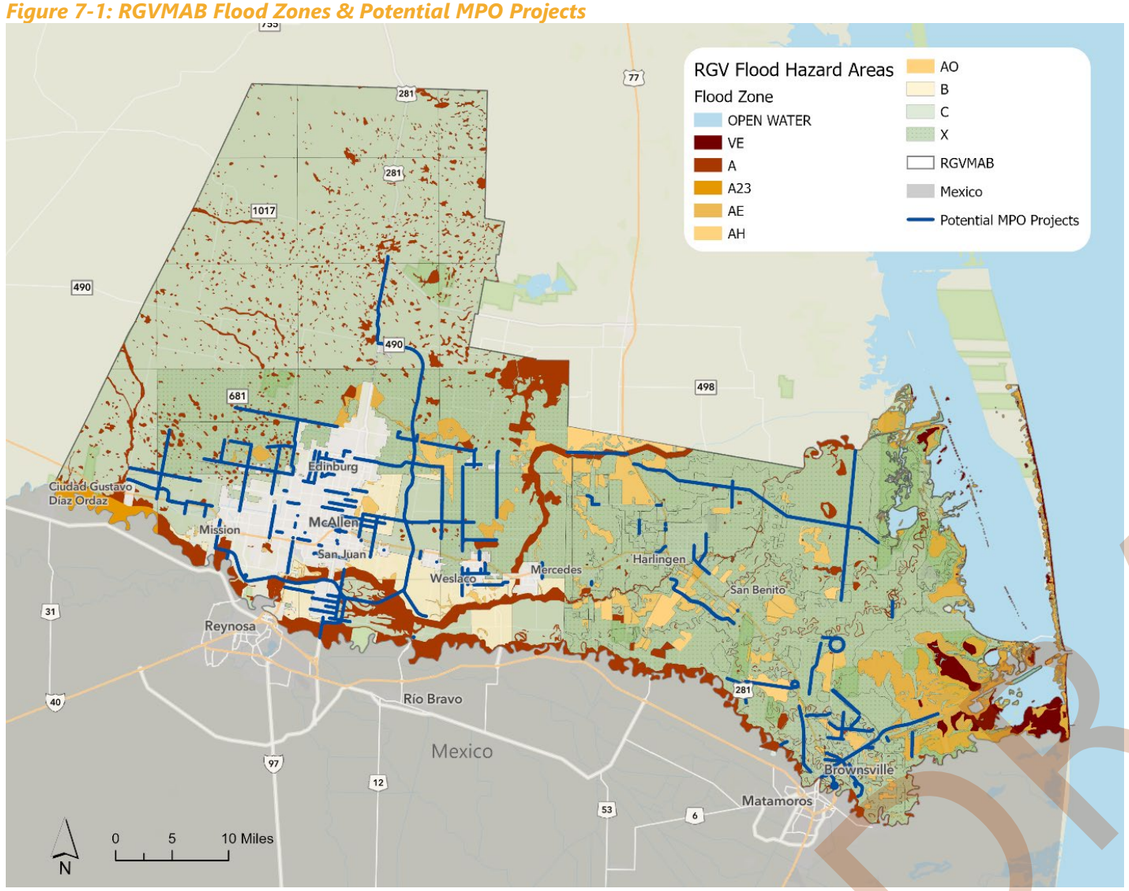
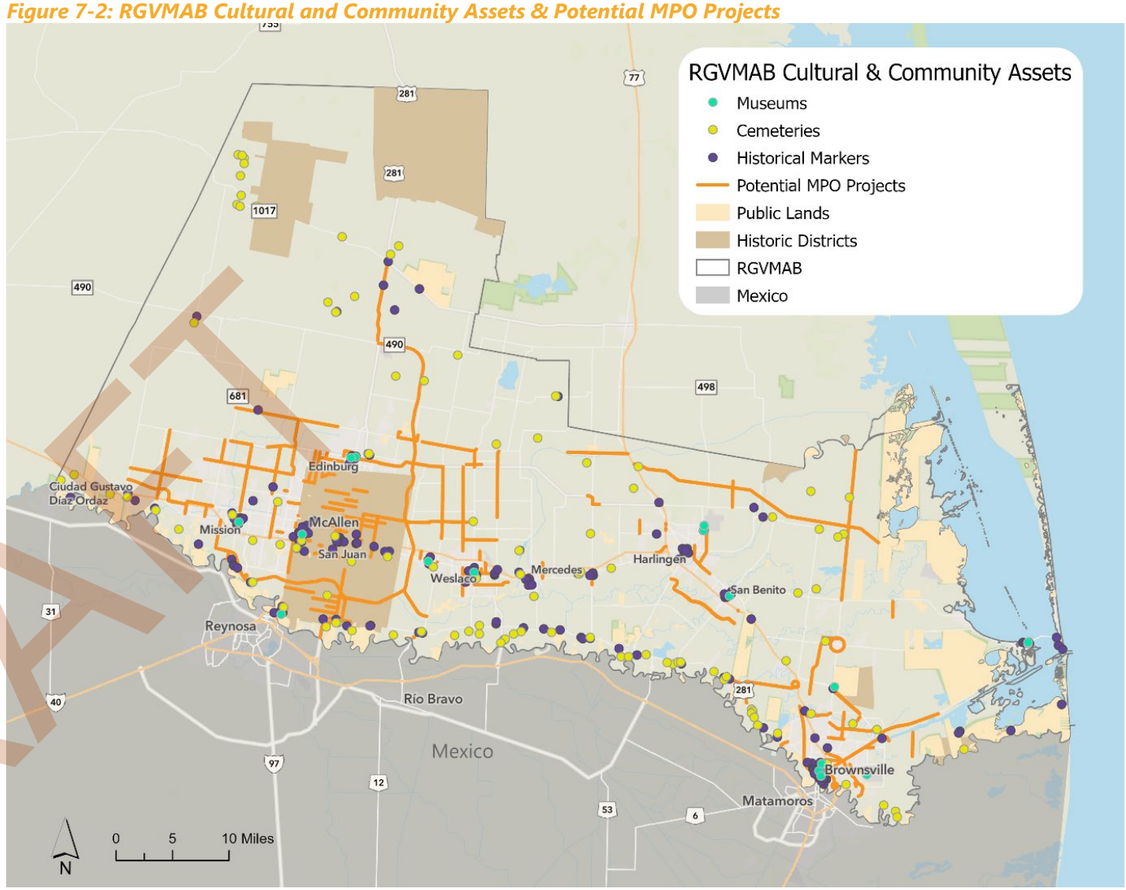


Figure 7-2: RGVMAB Cultural and Community Assets & Potential MPO Projects



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Figure 7-3: RGVMAB Environmental Hazards & Potential MPO Projects

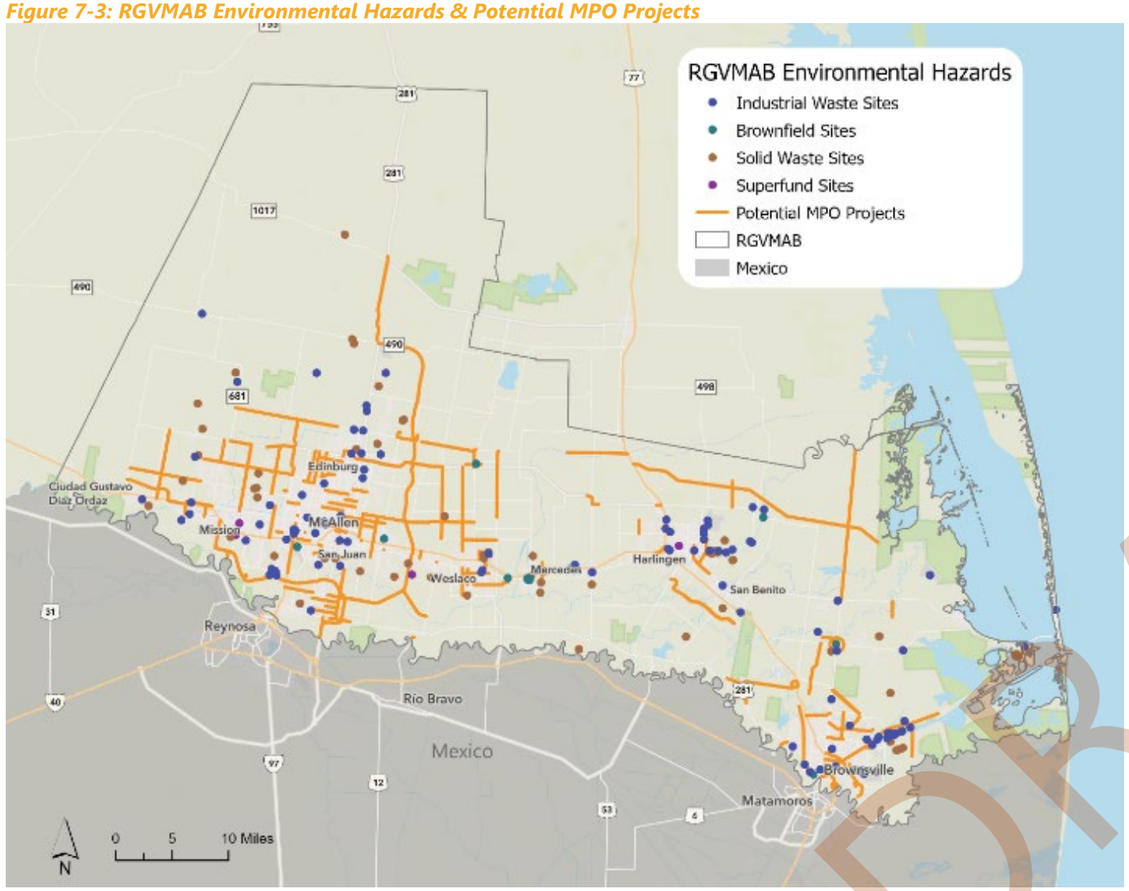
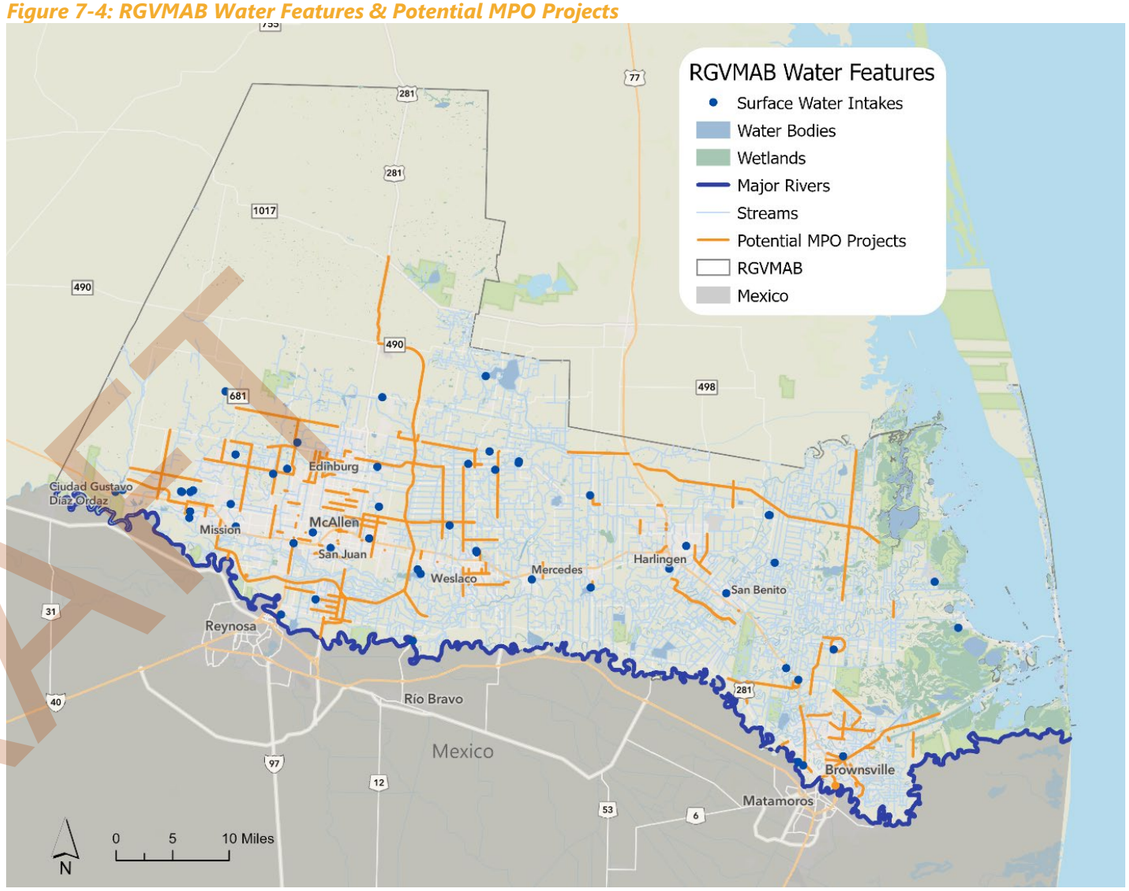


Figure 7-4: RGVMAB Water Features & Potential MPO Projects



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Environmental Justice Analysis

Title VI of the Civil Rights Act (42 US Code 2000 and Executive Order 12898) requires an Environmental Justice review, which is a comprehensive review of the effects of federally funded projects to low-income populations and minority groups. Environmental Justice is the fair treatment and involvement of all people regardless of race, color, national origin, educational level, or income with respect to the development, implementation, and enforcement of environmental laws. Environmental Justice works to provide access to public information for health, environmental planning, regulations, and enforcement for minority and low-income populations. It ensures that no populations are forced to shoulder a disproportionate burden of the negative human health or environmental impacts of pollution or other environmental hazards caused by a federally funded project.

Using the guidance in the metropolitan planning regulations, the study team incorporated Environmental Justice considerations into the development of the RGVMPO 2045 MTP. The study team identified and mapped EJZs, colonias, and Hispanic and Latino populations and performed a GIS-based analysis of the proximity of proposed transportation improvements to these communities.

The EJZs, colonias, and areas above the regional average percentage of Hispanic or Latino residents with the proposed project's buffer are shown in Figure 7-5 and Figure 7-6. Further description of the Environmental Justice analysis can be found in Chapter 4 of the MTP.

Table 7-3 shows the count of Environmental Justice features that are affected by the porposed projects. As displayed in the table below, there are more instances of intersection than there are projects (186). This is due to projects being implemented along a boundary of an EJZ or an area of above average percentage of Hispanic or Latino residents.

Table 7-3: Counts of Potential Impacts: Environmental Justice

Element Type	Buffer Intersect Count
Environmental Justice Zones	722
High Percentage Hispanic or Latino Population	549
Colonias	114

Figure 7-5: RGVMAB Environmental Justice Zones & Potential MPO Projects

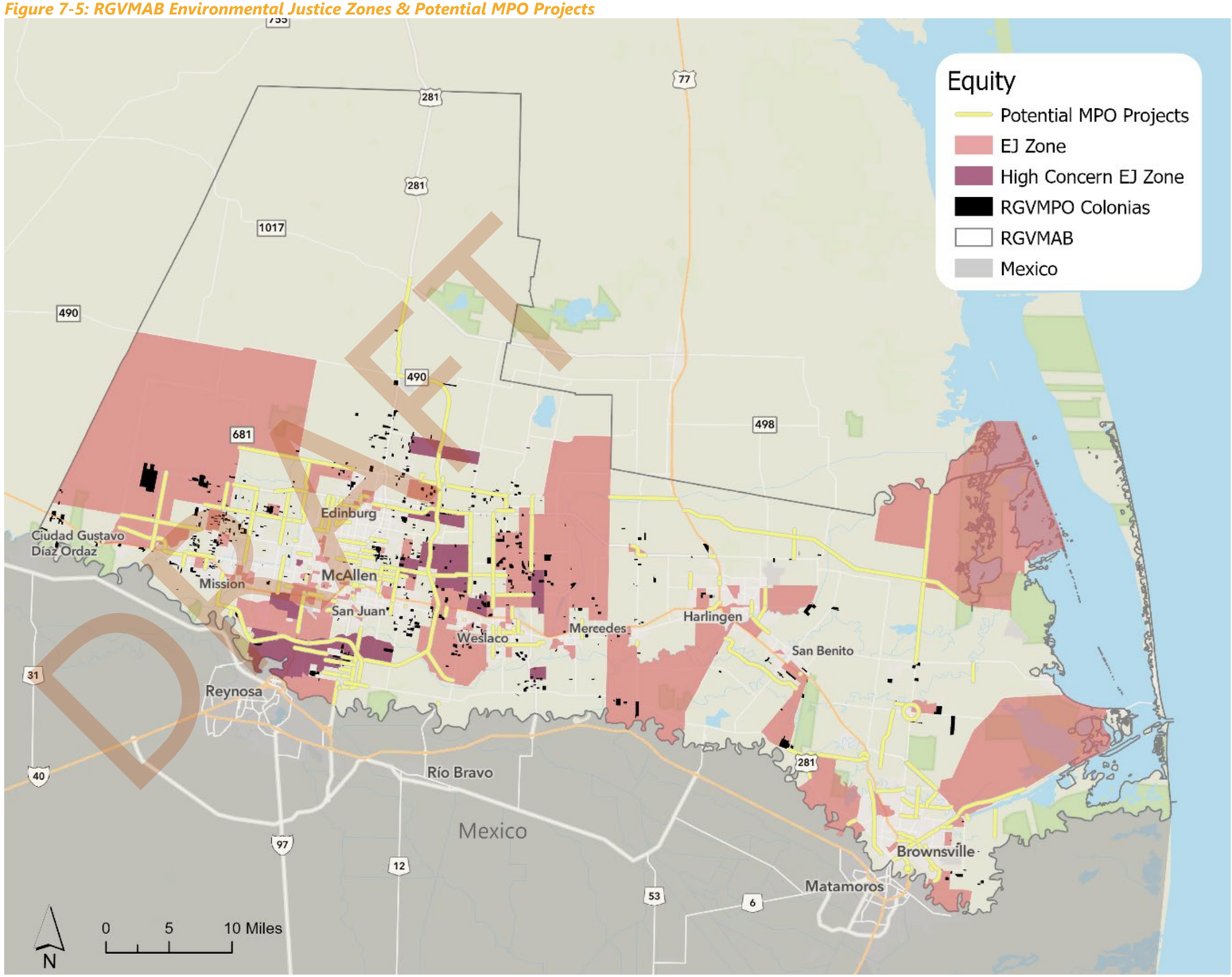
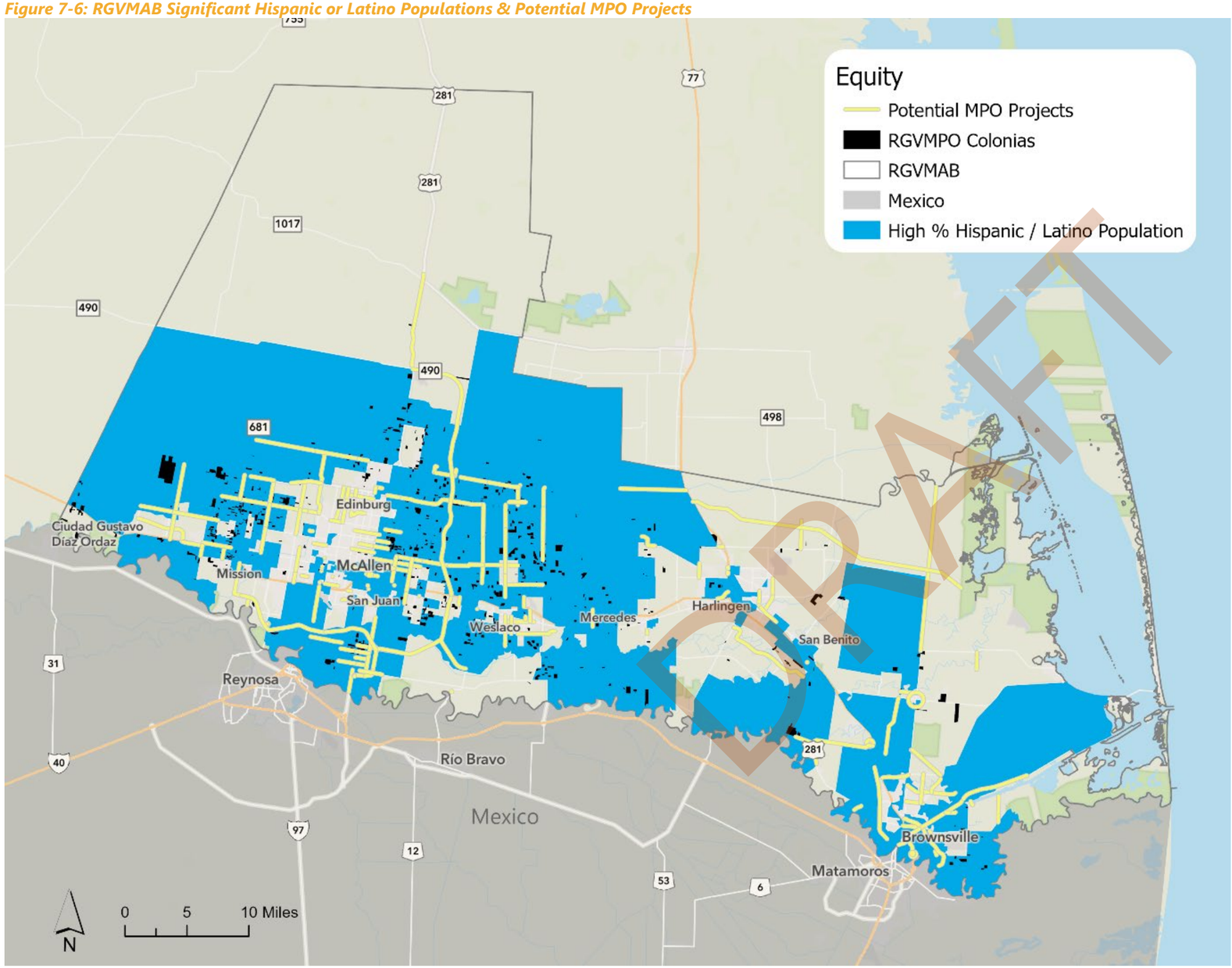


Figure 7-6: RGVMAB Significant Hispanic or Latino Populations & Potential MPO Projects



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Air Quality

Improving regional air quality and maintaining compliance with federal air quality standards is a fundamental consideration in the MTP process. The construction of new transportation infrastructure increases the capacity for vehicles on regional roadways, which has the potential to increase traffic-related air pollutants in the RGVMAB. In 1963, in response to increasing air pollution, the U.S. Congress passed the original Clean Air Act which established a federal program for researching techniques to monitor and control air pollution. The Clean Air Act of 1970 increased federal enforcement authority and authorized the development of national ambient air quality standards to limit common and widespread pollutants. These standards, known as the National Ambient Air Quality Standards (NAAQS), define the allowable concentration of pollution in the air for six "criteria" pollutants, including carbon monoxide, lead, nitrogen dioxide, particulate matter, ozone, and sulfur dioxide. The RGVMAB is in attainment for air quality and should continue to work toward limiting air pollutants.

The Clean Air Act identifies two types of national ambient air quality standards:

- Primary standards provide public health protection, including protecting the health of sensitive populations such as asthmatics, children, and the elderly.
- Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

The existing standards for each of the six criteria pollutants are listed in Table 7-4. The units of measure for the standards are parts per million (ppm) by volume, parts per billion (ppb) by volume, and micrograms per cubic meter of air (µg/m3). The EPA issued its final rule strengthening the ozone standards to 0.070 ppm on October 1, 2015.

EPA has delayed issuing guidance on conformity requirements for transportation planning in relation to the 2015 Ozone rule. Until then, the RGVMPO 2045 MTP is only required to maintain compliance with the 2008 standard definition.

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Table 7-4: National Ambient Air Quality Standards (NAAQS)

Pollutant	Primary/Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)	Primary	8 hours 1 hour	9 ppm 35 ppm	Not to be exceeded more than once per year
Lead	Primary and Secondary	3 month rolling average	0.15 $\mu g/m^3$	Not to be exceeded
Nitrogen Dioxide (NOX)	Primary Primary/Secondary	1 hour Annual	100 ppb 53 ppb	98th percentile, averaged over 3 years annual mean
Ozone	Primary/Secondary	8 hours	o.075 ppm	Annual, fourth highest maximum daily 8-hour concentration averaged over 3 years.
Particle Pollution PM 2.5	Primary Secondary	Annual Annual	12 $\mu g/m^3$ 15 $\mu g/m^3$	Annual mean averaged over 3 years Annual mean averaged over 3 years
Particle Pollution PM10	Primary and Secondary Primary and Secondary	24 hours 24 hours	35 $\mu g/m^3$ 150 $\mu g/m^3$	98th percentile, averaged over 3 years Not to be exceeded more than once per year, averaged over 3 years
Sulfur Dioxide	Primary Secondary	1 hour 3 hours	75 ppb 0.5 ppm	9th percentile of daily 1 hour maximum, averaged over 3 years Not to be exceeded more than once per year

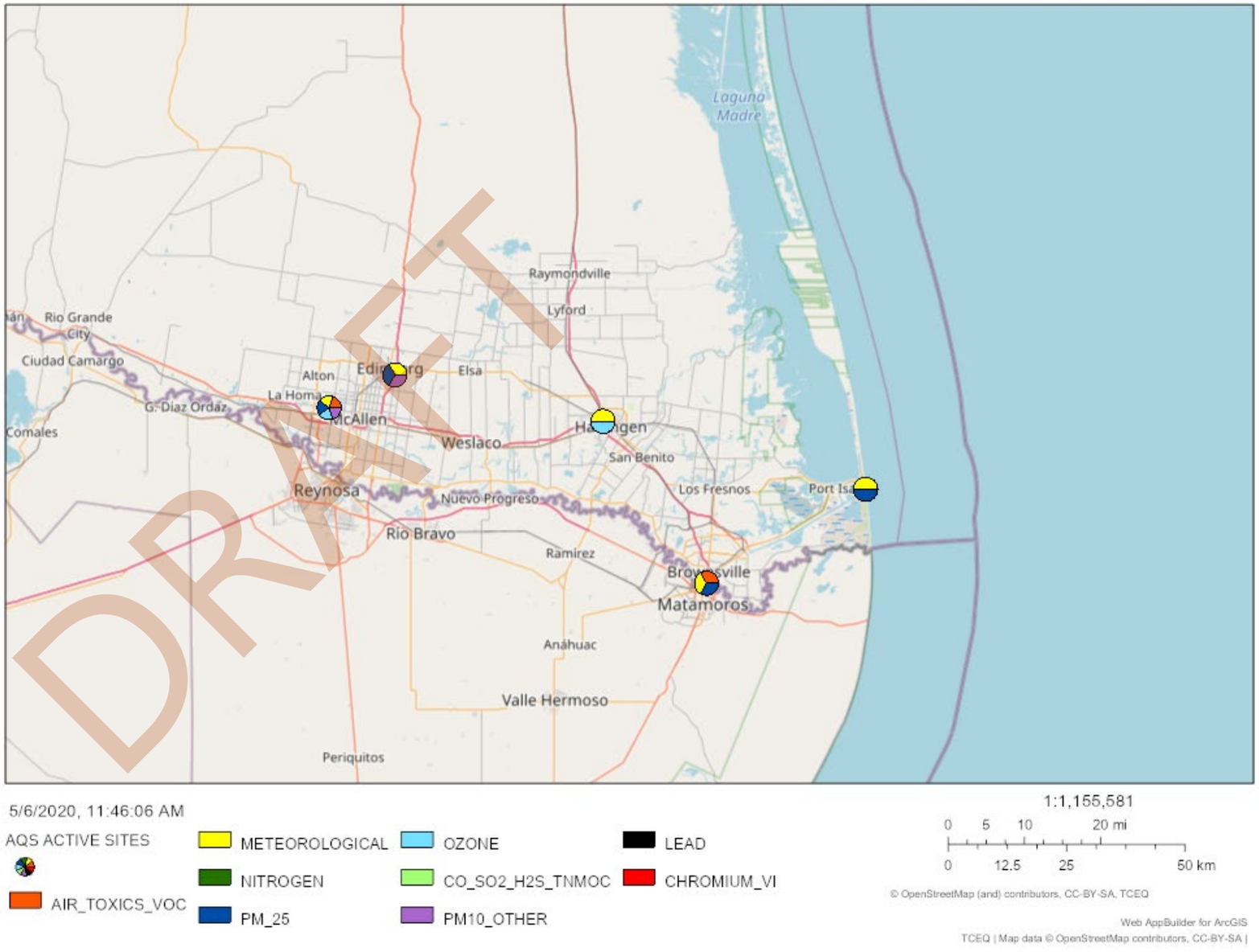
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Regions are designated by the EPA as either in attainment or nonattainment for the standards set by NAAQS. Attainment means the concentration of each pollutant does not exceed NAAQS. Non-attainment means the concentration of at least one pollutant exceeds the maximum defined threshold. If an area is designated as non-attainment, the State must develop and submit a State Implementation Plan (SIP). Areas of nonattainment can apply for Congestion Mitigation Air Quality (CMAQ) funds which can be used to help develop the SIP and use the funding to implement the mitigation activities. CMAQ and other funding opportunities are further described in Chapter 8. The SIP addresses each pollutant that exceeds NAAQS and establishes an overall regional plan to reduce air pollution emission levels and maintain attainment status.

Once a nonattainment area meets the standards, EPA will designate the area to attainment as a "maintenance area." Maintenance areas are required to have a Maintenance Plan in place to ensure continued attainment of the respective air quality standard. The Clean Air Act defines specific timetables to attain air quality standards and requires nonattainment areas to demonstrate reasonable progress in reducing air pollutants until the area achieves attainment. Collection area locations are presented in Figure 7-7.

Even if an area has achieved attainment, this does not mean that a proposed project's impact on air quality can be ignored. Projects should look to limit producing pollutants throughout implementation.

Figure 7-7: RGVMAB Air Quality System Active Sites



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Potential for Roadway Condition Improvements

The systems-level analysis also highlights projects that would likely overlay and thus improve roadways in fair or poor condition. This element of the analysis was included to highlight areas where capacity expansion projects can have a positive impact upon the overall transportation network. Further explanation of what is considered fair- or poor-quality roadway condition can be found in Chapter 4. The buffer distance for these elements was 50 feet. Table 7-5 shows the lane miles of Interstate and Non-Interstate National Highway System (NHS) potentially improved by the plan of projects.

Table 7-5: Potential Roadway Condition Improvements

Element Type	Interstate	Non-Interstate NHS
Fair or Poor Condition Roadways	0.93 mi.	40.83 mi.

Potential Mitigation Activities

Federal regulations require the MTP process to include a discussion about potential mitigation activities that can revive and maintain the environmental resources of an area. These mitigation strategies apply to areas for air quality and Environmental Justice concerns. FHWA recommends an ordered approach to mitigation known as "sequencing" that involves understanding the affected environment and assessing transportation effects through project development. This ordered approach involves:

- Avoiding the impact altogether (this should be the priority); minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the affected area.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources.

The type and level of mitigation activities will vary depending on the scope of the project. The project team proposes a multitude of mitigation measures and general areas where these activities can be implemented. These measures, presented in Table 7-6, are intended to be regional in scope and may not necessarily address potential project-level impacts. As proposed projects progress through the project development process, mitigation should be an integral part of alternatives development and the analysis process to maximize the effectiveness of mitigation strategies.

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Table 7-6: Mitigation Measures by Resource

Resource	Mitigation Measures
Wetlands or Water Resources	Avoidance, Minimization or Compensation • Preservation • Creation • Restoration • In-lieu Fees • Riparian Buffers • Design Exceptions and Variances Environmental Compliance Monitoring
Cultural Resources	Avoidance Minimization Landscaping for Historic Properties Preservation in Place or Excavation for Archaeological Sites Design Exceptions and Variances Environmental Compliance Monitoring
Parks and Recreation Areas	Avoidance, Minimization, Mitigation Design Exceptions and Variances Environmental Compliance Monitoring
Ambient Air Quality	Transportation Control Measures Transportation Emission Reduction Measures
Forested and Other Natural Areas	Avoidance, Minimization Replacement Property for Open Space Easements to be of Equal Fair Market Value and of Equivalent Usefulness Design Exceptions and Variances Environmental Compliance Monitoring
Agricultural Areas	Avoidance, Minimization Design Exceptions and Variances Environmental Compliance Monitoring
Endangered or Threatened Species	Avoidance, Minimization Time of Year Restrictions Construction Sequencing Design Exceptions and Variances Species Research/Fact Sheets Memoranda of Agreements for Species Management Environmental Compliance Monitoring

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SYSTEMS LEVEL ANALYSIS CONCLUSION

The systems-level analysis was performed to give the RGVMPO an understanding of potential environmental and quality of life impacts of their proposed projects. The Environmental Justice impacts of the projects were also analyzed by observing which project's buffers are slated to be in or near an area designated as an EJZ or an area above the regional average percentage of Hispanic or Latino residents. Summary counts of the potential impacts are found in the text of this chapter. More detailed information in is compiled for the RGVMPO in the aforementioned ArcGIS project. The individual impacts on the projects will need to be further analyzed as these projects move towards implementation. This systems-level analysis shows that due to their proximity to many of the projects, water features and EJZs will need to be evaluated at a greater depth as projects move through the development process and more detailed information becomes available.

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8 FINANCIAL PLAN

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The Financial Plan summarizes the funding programs available at the federal, state, and local levels for transportation projects, and forecasts estimated project costs and available funds for all transportation projects programmed into the planning horizon of the RGVMPO 2045 MTP.

ESTIMATING FUNDING

Federal regulations require that proposed investments in an MTP show fiscal constraint by demonstrating that projects can be implemented using committed, available, or reasonably available revenue sources. This funding must reasonably support the anticipated project costs, while validating the ability to adequately operate and maintain the transportation system.

The Financial Plan includes descriptions of the funding categories, sources, and specific dollar amounts that are expected to be available to fund projects listed in the RGVMPO 2045 MTP. This chapter also steps through the process of determining available funding levels and project cost development for Year of Expenditure (YOE).

Federal regulations also require these financial forecasts to consider inflation regarding the value of the dollar over time, which should be considered for both funding sources and project costs that are discussed within this chapter. These funding sources and project costs were estimated in year-of-receipt and YOE dollars, respectively.

The following sections will summarize the processes used to forecast both roadway and transit funding levels over the 25-year period in the RGVMPO 2045 MTP.

Roadway Funding Sources

Federal, state, and local funding programs were considered when reviewing and forecasting the total amount of funding for roadway projects within the 2045 MTP timeframe. The funding estimated to be available for projects in the RGVMAB through the lifespan of the 2021 UTP (2021-2030) was used in conjunction with a review of historical spending by each funding category. These estimates were used to form the base-year funding assumptions that were extrapolated to complete the funding forecast for the duration of the MTP.

The following section describes funding sources at the federal, state, and local levels available for roadway projects.

Potential Federal Funding Sources

In late 2015, the federal administration enacted the Fixing America's Surface Transportation Act (FAST Act), which provides funds for surface transportation activities. The FAST Act provided just over $300 billion dollars for surface transportation projects through the fiscal years of 2016 to 2020. The FAST Act builds upon the Moving Ahead for Progress in the 21st Century Act (MAP-21), which was enacted in 2012, by expanding its scope to include improving highway mobility, supporting economic growth by creating jobs, and accelerating project delivery and promoting innovation. MAP-21 set out to make surface transportation projects streamlined, performance based, and multimodal, while improving safety, maintaining infrastructure, reducing traffic congestion, improving efficiency, protecting the environment, and expediting project delivery.

NATIONAL HIGHWAY PERFORMANCE PROGRAM (NHPP)

Every year the FAST Act provides a little over $23 billion for the NHPP to preserve the condition and performance of the National Highway System (NHS). NHPP funds can also be used to construct new NHS facilities and ensure that projects are making progress toward performance goals set out in each state's asset management plan.

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MAP-21 eliminated the programs with dedicated funding for repair by consolidating the Interstate Maintenance and Highway Bridge Repair programs and shifting these funds to the new NHPP. NHPP provides funding for improvements to rural and urban roads that are part of the NHS, including the Interstate System and designated connections to major intermodal terminals. Under certain circumstances, NHS funds may also be used to fund transit improvements in NHS corridors.

The FAST Act created additional eligibilities for the NHPP:

- A State may use NHPP funds to pay the subsidy and administrative costs for Transportation Infrastructure Finance and Innovation Act (TIFIA) credit assistance.
- Vehicle-to-Infrastructure (V2I) communication equipment.
- Reconstruction, resurfacing, restoration, rehabilitation, or preservation of a non-NHS bridge if the bridge is on a Federal-aid highway.

SURFACE TRANSPORTATION BLOCK GRANT (STBG) PROGRAM

Previously titled the Surface Transportation Program (STP) The STBG is a block grant funding program with subcategories for states and urban areas. STBG funding may be used for projects to preserve and improve the conditions and performance on any Federal-aid highway, bridge and tunnel projects on any public road, pedestrian and bicycle infrastructure, and transit capital projects, including intercity bus terminals.

These funds can be used for any road, including an NHS roadway, that is not functionally classified as a local road or rural minor collector. The state portion can be used on roads within (or outside) an urbanized area, while the urban portion can only be used on roads within an urbanized area. The funding ratio is 80/20 (federal/local).

For urban areas with a population of greater than 200,000 people (such as within the RGVMAB), the MPO is the lead agency for funding allocation in consultation with the State. Urban areas with a population of less than 200,000 people the State is the leading agency for fund allocation in consultation with the MPO.

HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP)

As referenced in Chapter 5, the purpose of the HSIP is to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-State-owned public roads and roads on tribal lands.

"The primary features of the current HSIP are retained, including the requirement for a comprehensive, data-driven, SHSP that defines State safety goals and describes a program of strategies to improve safety. To obligate HSIP funds, a State must develop, implement and update a SHSP, produce a program of projects or strategies to reduce identified safety problems, and evaluate the SHSP on a regular basis.

The SHSP remains a statewide coordinated plan developed in cooperation with a broad range of multidisciplinary stakeholders.

States are required to have a safety data system to perform problem identification and countermeasure analysis on all public roads, adopt strategic and performance-based goals, advance data collection, analysis, and integration capabilities, determine priorities for the correction of identified safety problems, and establish evaluation procedures."[1]

[1] https://www.fhwa.dot.gov/fastact/factsheets/hsipfs.cfm

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The FAST Act continues MAP-21 authorization of a lump sum for this program, and it is the responsibility of the State to divide up these funds according to the State's priorities. For a project to be eligible under the HSIP program, the project must be consistent with the State's SHSP and correct or improve a hazardous road location or feature or address a highway safety problem. Workforce development, training, and education activities are also eligible uses of HSIP funds. The Federal share for HSIP is 90%.

TRANSPORTATION ALTERNATIVES (TA) PROGRAM

The FAST Act replaced the MAP-21 Transportation Alternatives Program (TAP) with a set-aside of STBG program funding for Transportation Alternatives (TA) to provide funding for a variety of alternative transportation projects that were previously eligible activities TAP. Unless a State opts out, it must use a specified portion of its TAP funds for recreational trails projects. Eligible activities include:

- Facilities for pedestrians, bicyclists, and other non-motorized forms of transportation
- Safe routes for non-drivers
- Conversion and use of abandoned railroad corridors for trails
- Community improvement activities

States and MPOs (for urbanized areas with more than 200,000 people) conduct a competitive application process for use of the sub-allocated funds. Other than the recreational trails set-aside, States are given broad flexibility to use these funds. A 20% local funding match is required for most projects.

CONGESTION MITIGATION AND AIR QUALITY (CMAQ)

Urban areas that do not meet ambient air quality standards are designated as non-attainment areas by the U.S. Environmental Protection Agency (EPA). CMAQ funds are apportioned to those urban areas for use on projects that contribute to the reduction of mobile source air pollution through reducing vehicle miles traveled, fuel consumption, or other identifiable factors. Both roadway and transit projects are eligible for CMAQ funds. Starting in FY 2013, all CMAQ projects were required to provide a 20% local match, with the exception of carpool and vanpool projects, which will remain 100% federally funded. To be eligible for CMAQ funds, projects must meet the following three criteria:

- Be a transportation project;
- Contribute to emission reductions; and
- Located in or benefit a nonattainment or maintenance area for ozone, carbon monoxide, and particulate matter.[2]

Neither Cameron or Hidalgo County are currently considered non-attainment or maintenance areas.

COMPETITIVE HIGHWAY BRIDGE PROGRAM (CHBP)

These funds go toward highway bridge replacement or rehabilitation projects on public roads that demonstrate cost savings by bundling at least two highway bridge projects into a single contract.

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[2] https://www.nps.gov/subjects/transportation/upload/CMAQ_Fact_Sheet_Final.pdf

Potential State Funding Sources

The State of Texas maintains categorized funding programs that coincide with Federal funding programs. Traditionally this funding is used to match federal sources and to fund the operations of the state Department of Transportation. The primary funding source for the Texas state program comes from motor fuels taxes allocations, motor vehicle registration fees, severance taxes allocations, and many other revenue sources and fees, including voter approved constitutional amendments Proposition 1 and Proposition 7, which redirect funding from the general fund to be spent on transportation projects. Categories 1-9 of the Texas UTP are federal and state programmatic funding categories, while categories 10, 11, and 12 are strategic and discretionary funding categories.

TxDOT's 2021 UTP provides the following definitions and criteria for each funding category.

CATEGORY 1: PREVENTATIVE MAINTENANCE AND REHABILITATION

Category 1 deals with preventative maintenance and rehabilitation of the existing highway system, which includes pavement, signs, traffic signalization, and other assets that can be considered part of the highway infrastructure. Preventative maintenance works to preserve, rather than improve the structural integrity of current pavements and structures. Rehabilitation focuses on repairing (which can also be considered modernizing) existing main lanes, structures, frontage roads, and other infrastructure assets.

Projects are selected by districts using a performance based prioritization process that assesses district-wide maintenance and rehabilitation needs. The Texas Transportation Commission allocates funds through a formula allocation program.

CATEGORY 2: METROPOLITAN AND URBAN AREA CORRIDOR PROJECTS

Category 2 addresses mobility and added capacity projects on urban corridors to mitigate traffic congestion, as well as increaseing traffic safety and improving roadway maintenance or rehabilitation. Projects must be located on the state highway system. Roadway widening (both freeway and non-freeway), interchange improvements, and roadway operational improvements are common within Category 2.

Projects are selected by MPOs in consultation with TxDOT using a performance based prioritization process that assesses mobility needs within the MPO boundaries. Project funds must be authorized by the Texas Transportation Commission by formula.

CATEGORY 3: NON-TRADITIONALLY FUNDED TRANSPORTATION PROJECTS

Transportation-related projects that qualify for funding from sources not traditionally part of the state highway fund, including state bond financing under programs such as Proposition 12 (General Obligation Bonds), Texas Mobility Fund, pass-through toll financing, unique federal funding, regional toll revenue, and local participation funding. New-location roadways, roadway widening, and interchange improvements are common project types that receive Category 3 funds.

Projects are determined by legislation, Texas Transportation Commission approved Minute Order, or local government commitments.

CATEGORY 4: STATEWIDE CONNECTIVITY CORRIDOR PROJECTS

Category 4 funds are used for mobility and added capacity projects on major state highway system corridors that provide statewide connectivity between urban areas and other statewide corridors, to

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create a highway connectivity network composed of the Texas Highway Trunk System, NHS, National Freight Network, hurrican evacuation routes, and connections to major ports of entry on international borders and Texas water ports.

Corridors are selected by the Texas Transportation Commission based on engineering analyses of three corridor types; mobility, connectivity, and strategic. Funds are allocated by the Commission to TxDOT districts. Districts select projects along approved corridors in consultation with MPO's, the Transportation Planning and Programming Division (TPP), and TxDOT Administration using a performance- based evaluation.

CATEGORY 5: CONGESTION MITIGATION AND AIR QUALITY IMPROVEMENT (CMAQ)

Congestion mitigation and air quality improvement projects address attainment of a national ambient air quality standard in non-attainment areas of the state, which does not include the RGVMAB. Projects that relate to maintaining the non-attainment status may also be eligible for CMAQ funds.

Projects are selected by MPOs in consultation with TxDOT. The Texas Transportation Commission allocates funds distributed by population and weighted by air quality severity to non-attainment areas. Nonattainment areas are designated by the EPA.

CATEGORY 6: STRUCTURES REPLACEMENT & REHABILITATION (BRIDGE)

Replacement and rehabilitation of deficient existing bridges located on public highways, roads, and streets in the state; construction of grade separations at existing highway and railroad grade crossings; and rehabilitation of deficient railroad underpasses on the state highway system.

Projects are selected by the Bridge Division (BRG) based on a listing of eligible bridges prioritized first by deficiency categorization (structurally deficient followed by functionally obsolete) and then by sufficiency ratings. Railroad grade separation projects are selected based on a cost-benefit index rating. Projects in the Bridge Management and Improvement Program (BMIP) are selected statewide based on identified bridge maintenance and improvement needs to aid in ensuring the management and safety of the state's bridge assets. The Texas Transportation Commission allocates funds through the Statewide Allocation Program.

CATEGORY 7: METROPOLITAN MOBILITY & REHABILITATION

Projects that address transportation needs within the boundaries of designated metropolitan planning areas of metropolitan planning organizations located in a transportation management area (areas with populations of 200,000 or more).

Projects are selected by MPOs operating in transportation management areas, in consultation with TxDOT. The MPOs use a performance-based prioritization process that assesses mobility needs within the MPO boundaries.

CATEGORY 8: SAFETY

Safety-related projects both on and off the state highway system including the federal Highway Safety Improvement Program, Safety Bond Program, Systemic Widening Program, Federal Railway Set-Aside, and Road to Zero (RTZ). Projects are selected statewide by federally mandated safety indices and a prioritized listing. Projects selected in each program are evaluated by relevant safety or railroad factors and indexes. The Texas Transportation Commission allocates funds through the Statewide Allocation Program.

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CATEGORY 9: TRANSPORTATION ALTERNATIVES SET-ASIDE PROGRAM

Transportation-related activities as described in the Transportation Alternatives (TA) Set-Aside Program, such as on- and off-road pedestrian and bicycle facilities, and infrastructure projects for improving access to public transportation. For urbanized areas with populations over 200,000, the MPO selects TA projects through a competitive process in consultation with TxDOT.

Funds allocated to small urban areas and non-urban areas (i.e., areas with populations below 200,000) are administered by TxDOT through a competitive process to be managed by the Public Transportation Division through a competitive process. The Texas Transportation Commission selects projects for funding under a TxDOT administered call for projects. Statewide TA Flex projects are also selected by the Commission. All projects are selected using a performance-based prioritization process that assesses local transportation needs, including bicycle and pedestrian access.

CATEGORY 10: SUPPLEMENTAL TRANSPORTATION PROGRAMS

Transportation-related projects that do not qualify for funding in other categories, including landscape and aesthetic improvement, erosion control and environmental mitigation, construction and rehabilitation of roadways within or adjacent to state parks, fish hatcheries, and similar facilities, replacement of railroad crossing surfaces, maintenance of railroad signals, construction or replacement of curb ramps for accessibility to pedestrians with disabilities, and miscellaneous federal programs.

Coordinated Border Infrastructure Program (CBI), Congressional High Priority Projects, and Federal Lands Access Program (FLAP)

CBI projects are selected by districts with FHWA review and approval. Discretionary funds are congressionally designated. In FLAP, project applications are scored and ranked by the Programming Decision Committee (PDC). Members of the PDC include a representative from FHWA, a representative from TxDOT, and a member from a political subdivision of the state. Projects selected under FLAP are managed by TPP.

Supplemental Transportation Projects

The Texas Parks and Wildlife Department (TPWD) selects State Park Roads projects in coordination with districts. The TxDOT Rail Division in coordination with districts selects Railroad Grade Crossing Re-planking and Railroad Signal Maintenance projects. Landscape Incentive Awards are distributed to 10 locations based on the results of the Keep Texas Beautiful Awards Program and managed by the TxDOT Design Division.

Green Ribbon allocations are based on one-half percent of the estimated letting capacity for the TxDOT districts that contain air quality non-attainment or near non-attainment counties and managed by the TxDOT Design Division. Curb Ramp Program projects are selected based on conditions of curb ramps or the location of intersections without ramps and are managed by the Design Division.

CATEGORY 11: DISTRICT DISCRETIONARY

Projects eligible for federal or state funding selected at the district engineer's discretion. Additionally, Category 11 addresses transportation needs that may impact the Energy Sector and Border Infrastructure (Rider 11(b)). Projects are selected by districts. The Texas Transportation Commission allocates funds through a formula allocation program.

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A minimum $2.5 million allocation goes to each district per legislative mandate. The Commission may supplement the funds allocated to individual districts on a case-by-case basis to cover project cost overruns, as well as energy sector initiatives. Rider 11 (b) is also selected by the Commission dependent on the number of land border ports of entry, incoming commercial freight traffic, incoming personal motor vehicles and buses, and the weight of incoming cargo by commercial trucks.

CATEGORY 12: STRATEGIC PRIORITY

Projects with specific importance to the state, including those that generally improve congestion and connectivity, energy sector access, and border and port connectivity, promote economic opportunity, increase efficiency on military deployment routes or retain military assets in response to the federal military base realignment and closure reports, and maintain the ability to respond to both manmade and natural emergencies. The Texas Transportation Commission selects projects statewide using a performance-based prioritization process.

Potential Local Funding Sources

It is typically the responsibility of the local government jurisdictions to cover any costs not covered by federal and state programs. Local funding can come from a variety of sources including property taxes, sales taxes, user fees, special assessments, and impact fees. Match requirements make local funds critical to maintain eligibility for several federal and state funding sources, which is typically around 20% of total project costs for federal funding sources.

PROPERTY TAXES

Property taxation has historically been the primary source of funding for local governments in the United States. Property taxes account for more than 80% of all local tax revenues. Property is not subject to federal government taxation but is taxed at a high rate within the state of Texas given the lack of state and local-option income taxes.

GENERAL SALES TAXES

The general sales and use tax is also an important funding source for local governments. The most commonly known form of the general sales tax is the retail sales tax. The retail sales tax is imposed on a wide range of commodities, and the rate is usually a uniform percentage of the selling price.

USER FEES

User fees are fees collected from those who use a service or facility. The fees are collected to pay for the cost of a facility, finance the cost of operations, and/or generate revenue for other uses. User fees are commonly charged for public parks, water and sewer services, transit systems, and solid waste facilities. The theory behind the user fee is that those who directly benefit from these public services pay for the costs.

SPECIAL ASSESSMENTS

Special assessment is a method of generating funds for public improvements, whereby the cost of a public improvement is collected from those who directly benefit from the improvement. In many instances, new streets are financed by special assessment. The owners of property located adjacent to the new streets are assessed a portion of the cost of the new streets based on the amount of frontage they own along the new streets.

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IMPACT FEES

Development impact fees have been generally well received in other states and municipalities in the United States. New developments create increased traffic volumes on the streets around them, and development impact fees are a way of attempting to place a portion of the burden of funding improvements on developers who are creating or adding to the need for improvements. There are currently no municipalities in the RGVMAB that assess a transportation-specific impact fee.

BOND ISSUES

Property tax and sales tax funds can be used on a pay-as-you-go basis, or the revenues from these taxes can be used to repay general obligation or revenue bonds. These bonds are issued by local governments upon approval of the voting public.

REVENUE FORECAST DEVELOPMENT

Historically, transportation improvement projects in the RGVMAB have been funded through a combination of Federal, State, and local dollars. The process of developing reasonable expectations for future revenues includes several factors in reviewing these historical funds. Historical TIPs and lists of obligated projects from the last 20 years were compiled and project funding was sorted by year and funding category. The revenue history was then screened for outliers. Events such as changes in funding categories or additional funds received after a hurricane could ostensibly create a skew in understanding the normal trends and are identified early in the process. The resulting normalized trends in funding were analyzed over that historical 20-year period to establish preliminary growth rates for funding by category. Table 8-1 summarizes the totals for each applicable funding category broken out into 5-year periods over the last 20 years. Historical transit funding was compiled through a similar process using historical TIPs and compared to the current 2021-2024 TIP.

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Table 8-1: Historical Roadway Funding

UTP Category	2001-2005	2006-2010	2011-2015	2016-2020
1	$106,475,070	$146,873,380	$137,592,995	$175,176,929
2*	$0	$0	$14,916,819	$160,646,855
3	$237,763,856	$79,866,202	$107,901,095	$57,480,479
4	$153,628,235	$0	$18,712,000	$157,069,355
6	$25,771,532	$16,088,976	$29,982,000	$17,411,736
7	$46,565,092	$71,833,047	$56,590,778	$89,525,572
8	$11,157,753	$28,463,055	$21,368,320	$33,275,266
9	$6,647,048	$3,982,675	$6,598,805	$13,265,206
10	$52,480,451	$85,504,150	$94,811,651	$36,987,633
11	$82,246,778	$66,659,183	$7,191,837	$40,362,174
12	$1,400,000	$9,000,000	$10,511,460	$204,580,000
LC	$20,339,204	$26,304,676	$42,509,893	$38,207,678

**Includes 2M and 2U*

Roadway Funding Forecast

To determine the fiscal feasibility of implementing a program of projects in the MTP, an analysis of programmed funding was conducted. The RGVMPO coordinated with TXDOT to determine projected funding and acceptable inflation rates for projects. This resulted in a compounded annual inflation rate of 4.0% in Texas.

The RGVMPO 2045 fiscally constrained MTP is partitioned into segments of time. The first two segments of time are developed to coincide with other planning and programming efforts such as the TIP which typically covers three to four years, and the UTP covering ten years. The remaining fifteen years of the MTP planning horizon are banded into segments to help set up future TIP and UTP development efforts.

The first ten years of the RGVMPO 2045 MTP, FY 2021-2030, are fiscally constrained by funding category based on funding allocations identiifed through the Texas 2021 UTP. The remaining 15 years are also fiscally constrained based the comparison of project costs submitted through the MTP project listings and funding projections estimated based off historical funding totals and funding targets established by TxDOT for certain funding categories for the RGVMAB.

For some of the UTP funding categories, the UTP does not identify specific projects, but rather identifies funding levels for programs. Individual projects are then identified through a performance-based prioritization process. Examples of these programs include Category 1-Preventative Maintenance and Rehabilitation, Category 6-Structure Replacement and Rehabilitation, and Category 8-Safety. Local contributions above the required local match to federal funds are captured under Category 3.

Unless otherwise noted, most of these funding categories continue throughout the RGVMPO 2045 MTP. For the periods within the current 2021 UTP, the funding targets set out by TxDOT were used to populate revenue forecasts where available. For the outlying years beyond 2030, the historical growth rates based on the previous 20 years of funding were used to generate a revenue forecast out to the 2045 horizon, which were adjusted for inflation by applying the expected average statewide inflation rate (2.23%).

Most of the funding categories under which the RGVMAB receives funding are administered by TxDOT in consultation with the MPO. However, there are two specific funding categories that the RGVMPO leads the administrative process in conjunction with TxDOT. These categories include:

- Surface Transportation Program for metropolitan mobility projects (STP-MM) allocated through TxDOT UTP Category 7
- Transportation Alternatives (TA) Program allocated through TxDOT UTP Category 9

The total amount estimated to be available from 2021-2045 in the RGVMAB through the TA program is $54M. TxDOT introduced additional funding assumptions in the RGVMPO 2045 MTP for non-programmatic funding categories:

- $12.5M reconstruction of Mile 3 N. by widening to 4 lanes, in 2023
- $18.3M reconstruction of Liberty Blvd. by widening to 4 lanes, in 2022
- $203M to construct 4 lanes with overpasses and 2 lanes with frontage roads on US-281 in 2024
- $216M to construct a new 4-lane divided rural highway facility on SH 68 in 2024
- $301M to construct a 4-lane controlled access facility on 365 Tollway in 2021
- $312M for construction of the International Bridge Trade Corridor and toll facility in 2021-2022

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Roadway Funding Overview

Reviewing the project funding, annual forecast amounts, appropriate growth rates to relevant funding categories, and appropriate inflation rates resulted in the following levels (Table 8-2) of roadway funding estimated to be available for each stage of the plan. Table 8-3 displays the total funding estimated to be available by source over the 25-year period of the MTP. Federal funding administered by the RGVMPO in the 2045 MTP is in line with historical trends and no reduction of these funds are expected in the future.

Table 8-2: Total Roadway Funding by Stage- All Categories

Stage	Amount
2021-2024	$902,545,042
2025-2030	$1,733,933,310
2031-2036	$1,842,362,870
2037-2045	$1,529,493,080
Total (2021-2045)	**$6,008,334,302**

Table 8-3: 2021-2045 Total Estimated MTP Funding by Category

Stage	Amount
1 – Preventative Maintenance & Rehabilitation	$1,004,287,994
2 – Metropolitan Area (TMA) Corridor Projects	$1,013,893,078
3 – Local Contribution	$678,447,888
4 – Statewide Urban Connectivity Corridor Projects	$203,372,437
6 – Structures Replacement & Rehabilitation	$171,308,637
7 – STP – MM	$256,282,574
8 – Safety Projects	$170,206,534
9 – Transportation Alternatives-Set Aside	$54,097,074
10 – Transportation Enhancements Program (TxDOT)	$569,566,767
11 – District Discretionary	$126,437,254
12 – Strategic Priority	$1,388,661,491
Local Funds	$270,158,066
TBD	$101,614,509
Total MTP Estimated Roadway Funding	**$6,008,334,303**

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Transit Funding Sources

Transit providers in the RGVMAB are funded through a combination of federal, state, and local sources. Aside from local funding, the FTA administers the primary funding programs used by transit providers in the study area. Of these programs, the Section 5307 Urbanized Area Formula program is the largest source of funding. Other FTA funding programs are more limited in nature.

Federal Funding Sources

SECTION 5307 (URBANIZED AREA FORMULA PROGRAM)

Section 5307, the Urbanized Area Formula program (49 U.S.C. 5307) makes federal funding available to urbanized areas for transit capital and operating assistance and for transit-related planning activities. Funding for the formula program is determined based on the level of transit service provision, population, and other factors.

SECTION 5311 (FORMULA GRANTS FOR RURAL AREAS)

This formula-based program (49 U.S.C. 5311) provides states and tribal governments with funding for administration, capital, planning, and operating assistance to support public transportation in rural areas, defined as areas with fewer than 50,000 residents.

There are set-asides within this program for the Intercity Bus Program, the Rural Transit Assistance Program (RTAP), Public Transportation on Indian Reservations, and the Appalachian Development Public Transportation Program.

SECTION 5310 (ENHANCED MOBILITY OF SENIORS AND INDIVIDUALS WITH DISABILITIES)

The Enhanced Mobility program provides formula funding to assist in meeting the transportation needs of the elderly and persons with disabilities when the primary transportation service provided is unavailable, insufficient, or inappropriate to meeting these needs. The purpose of this program is to enhance mobility for seniors and persons with disabilities by providing funds for programs to serve the special needs of transit-dependent populations beyond traditional public transportation services and paratransit services.

Funds from the 5310 program can be used for both capital improvements and operating expenses. However, at least 55% of program funds must be used on capital projects ("traditional" project) that are public transportation projects planned, designed, and carried out to meet the special needs of seniors and individuals with disabilities when public transportation is insufficient, inappropriate, or unavailable. The remaining 45% of program funds may be used for capital and operating expenses for new public transportation services ("nontraditional" projects) and alternatives beyond those required by the ADA, designed to assist individuals with disabilities and seniors.

Funds are apportioned for urbanized and rural areas based on the number of seniors and individuals with disabilities. The federal share for capital projects (including acquisition of public transportation services) is 80%; the federal share for operating assistance is 50%.

SECTION 5339 (BUS AND FACILITIES)

This formula-based program (49 U.S.C. 5339) provides capital funding to states and designated recipients to replace, rehabilitate, and purchase buses, vans, and related equipment, and to construct bus-related facilities.

OTHER FTA FORMULA AND DISCRETIONARY FRANTS

There are several other FTA grant programs with funding available. Most of these grant programs are focused on fixed guideway systems or on temporary assistance.

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Section 5309 (Capital Investment Grants)

The Capital Investment Grant (CIG) Section 5309 program is a discretionary grant program for funding major transit capital investments. These investments includes:

- Heavy rail
- Commuter rail
- Light rail
- Streetcars
- Bus rapid transit

By law, projects seeking CIG funding must complete a series of steps over several years to be eligible for funding. New Starts and Core Capacity projects are required by law to complete the Project Development and Engineering phases in advance of receipt of a construction grant agreement. Small Starts projects are required by law to complete the Project Development phase in advance of receipt of a construction grant agreement.

- New Starts Projects
    - Total project cost is equal to or greater than $300 million or total New Starts funding sought equals or exceeds $100 million
    - New fixed guideway system (light rail, commuter rail etc.)
    - Extension to existing system
    - Fixed guideway BRT system
- Small Starts Projects
    - Total project cost is less than $300 million and total Small Starts funding sought is less than $100 million
    - New fixed guideway systems (light rail, commuter rail etc.)
    - Extension to existing system
    - Fixed guideway BRT system
    - Corridor-based BRT system
- Core Capacity Projects
    - Substantial corridor-based investment in existing fixed guideway system
    - Located in a corridor that is at or over capacity or will be in five years
    - Increase capacity by 10%
    - "Not include project elements designated to maintain a state of good repair"[3]

By law FTA rates projects at various points in the process, evaluating project justification and local financial commitment according to statutory criteria. FTA provides policy guidance on the CIG process and the evaluation criteria on their website.

Flexible Federal Funding Sources

Funding from the NHPP, the STP, CMAQ, and TAP can be "flexed" to transit projects, with certain eligibility restrictions depending on the funding source.

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[3] https://www.transit.dot.gov/funding/grant-programs/capital-investments/about-program

Transit Funding Forecast

From 2021-2024, the RGVMPO will continue to receive traditional FTA 5307 & 5310 formula funds for programs such as capital maintenance, planning and ADA Paratransit for nearly $101M, and for Transit Enhancement projects covered by FTA 5339 funds for just over $4M, which includes funding to purchase both buses and bus facilities. Based on historical funding trends and population growth in the RGVMAB, the FTA 5307, 5310, and 5339 funds are expected to grow at a modest rate of just over 6.31% through 2045.

Transit Funding Overview

Table 8-4 shows the total transit funding forecast for the various stages of the RGVMPO 2045 MTP. Table 8-5 breaks down forecast transit funding by source. Including local matching funds, the total amount of transit funding estimated to be available for the duration of the MTP is approximately $888M.

Table 8-4: 2021-2045 Transit Funding Forecast (All-Sources)

Stage	Amount
2021-2024	$104,995,340
2025-2030	$189,891,761
2031-2036	$214,326,717
2037-2045	$379,187,658
Total (2021-2045)	**$888,401,476**

Table 8-5: 2021-2045 Transit Funding Forecast by Source

Section Funding	Amount
5307	$820,821,178
5310	$32,964,068
5339	$34,616,230
Total	**$888,401,476**

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ESTIMATING COSTS

Federal regulations define "total project cost" for the purpose of estimating fiscal constraint in the MTP to include:

- Planning elements (e.g. environmental studies and functional studies);
- Engineering costs (e.g. preliminary engineering and design);
- Preconstruction activities (e.g. ROW acquisition);
- Construction activities; and
- Contingencies.

The following assumptions helped guide the development of cost estimates for the proposed projects in the MTP as well as the maintenance and operation of the existing transportation system.

1. Because federal regulations do not require that the cost of maintenance and operations activities be computed for individual projects, the funding needed for maintenance and operation of the transportation infrastructure was estimated on a system-wide level.
2. Whenever a detailed engineering estimate for a particular project was not available, generalized planning-level cost figures (developed by the RGVMPO in close coordination with TxDOT Pharr district) were used to assess the cost of each of the project's elements. These generalized cost figures were based on estimates provided by TxDOT, and other available resources.
3. In the absence of detailed, local inflation information for construction related activities, an inflation rate of 4.0% for Texas portions of projects was used for project cost estimation based on TxDOT guidance.
4. Project costs are estimated to include construction costs as well as right-of-way acquisition and engineering costs in consultation with project sponsors.

Both typical improvement costs and local knowledge of other project costs were used to develop cost estimates for the projects considered for the MTP. In keeping with federal regulations, cost estimates were computed in average YOE dollars across 5-year periods within the MTP planning horizon using the inflation factors outlined above in accordance with FHWA, TxDOT guidance. Table 8-6 displays the aggregate total estimated project costs for each period addressed by the MTP. Each period also includes programmatic cost estimates for general system maintenance and operation. The complete list of projects considered for inclusion in the MTP, along with estimated YOE costs, can be found in Chapter 6.

Estimated roadway funds include the Statewide Mobility Program (Categories 2, 3, 4, 5, 7, 8, 9, 10, 11, & 12) and the Statewide Preservation Program (Categories 1 & 6).

The process of summarizing the funding for both mobility and preservation programs in contrast to the total costs of projects shows fiscal constraint not only for the development and construction of the planned projects, but for the sustained maintenance and operations of these projects as well.

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Table 8-6: Summary of Estimated Costs (YOE)

Stage	Roadway Costs	Transit Costs
2021-2024	$1,450,753,182	$104,995,340
2025-2030	$1,572,155,945	$189,891,761
2031-2036	$303,900,577	$214,326,717
2037-2045	$460,795,908	$379,187,658
Total (2021-2045)	**$3,787,605,612**	**$888,401,476**

Maintenance and Operations

The maintenance and operation of the transportation system was considered in the development of the RGVMPO 2045 MTP and its staged improvement program. Typically, maintenance costs are applicable to the system as a whole. Where possible, maintenance projects are identified individually. However, it is not possible to develop project-specific maintenance schedules beyond the near term. The maintenance costs identified in this plan are the responsibility of various governmental jurisdictions.

The balancing act of meeting identified transportation improvement needs and maintaining the present transportation system will continue as the system ages. Recommendations in this plan are conservative, because they factor in the impact of maintenance costs in the determination of available funding.

A variety of federal and state funds are used to implement the statewide overlay, maintenance, and operations program. Based on the review of funds available for Categories 1 and 6, it is estimated that $1.17B and $171M will be available within the next 25 years, respectively.

Reviewing the estimated funding available in the RGVMAB for maintenance and operations as administered by the TxDOT Pharr district helps to better inform decision making at the MPO level when coordinating strategies with regional planning partners. This includes considerations for operational and management strategies to improve the performance of existing transportation facilities to relieve vehicular congestion and maximize the safety and mobility of people and goods as described in greater detail in the grouped project categories listed in Chapter 6.

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CONSTRAINING THE PLAN

Projects not already included in the current TIP or UTP were sorted into 2031-2036 and 2037-2045 stages by priority ranking, estimated project costs, and expected funding availability. Projects remaining once expected levels of funding were exhausted have been categorized as unfunded projects.

Total anticipated constrained program costs are estimated to be just under $3.79 billion in YOE dollars for roadway projects and just under $888.4 million for transit. Because the total program funding is expected to be greater than program costs the RGVMPO 2045 MTP is fiscally constrained. In accordance with TxDOT's UTP process, the first ten years of the plan (2021-2030) are also fiscally constrained by funding category based on the projected UTP allocations in the 2021 UTP.

Table 8-7 shows the fiscal constraint summaries for the years covered in the 2045 MTP. It includes a summation of the estimated roadway (Table 8-2) and transit (Table 8-4) funds in comparison to the programmed and planned costs.

Table 8-7: 2021-2045 MTP Fiscal Summary

	Estimated Funding	Estimated Costs
Roadway	$6,008,334,303	$3,787,605,612
Transit	$888,401,476	$888,401,476
Total	**$6,896,735,779**	**$4,676,007,088**

A full listing of the fiscally constrained program of projects over the lifespan of this MTP update (2021-2045) can be found in Chapter 6. This listing includes 2021 UTP Projects, regionally significant District Area projects within the RGVMAB, and the MPO prioritized list of projects discussed in Chapter 6.

A listing of unconstrained projects, or unfunded needs projects is also included in Chapter 6. The unconstrained projects represent project costs exceeding expected funding for mobility projects over the next 25 years as has been stated. Although the current projections show an unexpended amount and some of the unfunded illustrative projects could be advanced into the program, there is a basis for caution. As the economic impacts of the shutdown associated with COVID-19 become better understood, there is a likelihood that the financial revenue projections may need to be adjusted downward. Maintaining a cushion between expenditures and revenues pending further insight into current economic trends provides a conservative outlook that allows the RGVMPO to be confident that the MTP is financially constrained even if the economy is slow to recover from the current economic uncertainties.

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9 TRANSPORTATION SYSTEM PERFORMANCE REPORT

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This chapter summarizes the system evaluation analysis described in Chapter 4 and compares the FAST Act RGVMPO Transportation System Performance to State Targets.

This chapter also details additional locally defined performance measures and outlines strategies for assessing progress towards goals and targets through Performance Management in future plan updates.

This chapter summarizes the system evaluation analysis described in Chapter 4 to provide the MTP Transportation Systems Performance Report. This report compares RGVMPO system performance vs. State performance targets and describes additional locally defined measures and strategies. For each of the applicable goals areas the chapter then discusses how these performance measures and targets are used in assessing performance of the transportation system resulting from the current RGVMPO 2045 MTP update.

The Rio Grande Valley Metropolitan Planning Organization (RGVMPO) has a responsibility to follow the Transportation Performance Management (TPM) guidelines provided by the Fixing America's Transportation (FAST) Act, which continues Moving Ahead for Progress in the 21st Century (MAP-21) Act TPM objectives. The Federal Highway Administration (FHWA) defines TPM as "a strategic approach that uses system information to make investment and policy decisions to achieve national performance goals".

The implementation of TPM provides the following general benefits: [1]

- Enhanced investment decisions
  - Goals, measures, and data allow for organizations to make better informed decisions about how to invest in transportation funding at a multimodal level
  - Allows organizations to use taxpayer dollars as efficiently as possible
- Creates a better performing transportations system
  - Targets, plans, and reporting TPM results ensures accountability for system performance
  - Helps identify system strengths and deficiencies, highlighting areas in need of improvement and/or maintenance
- Produces safe, connected, and productive communities
  - Focuses on the safe and efficient delivery of people and goods
  - Emphasizes reliable commutes to work, school, recreation, and community activities

In order to do so, the RGVMPO strives to achieve targets set by the Texas Department of Transportation (TxDOT) compliant with FHWA rules, and continuously reports on progress towards these targets to align with federal and state regulations. RGVMPO performance reporting is accomplished primarily through the Metropolitan Transportation Plan (MTP) planning process, which performs detailed systems analyses to produce necessary TPM measures.

Previous Rio Grande Valley Area Performance Reporting

This transportation systems report is the first report covering the RGVMAB as a comprehensive study area and therefore documents the RGVMPO baseline transportation system performance. To gain historical perspective, interested parties can obtain additional information from earlier performance-based planning reports developed by the three previous MPOs from which the RGVMAB was formed. This information is available in the consolidated MPO 2019 MTP update hosted on the current RGVMPO website.

[1] Source: https://www.fhwa.dot.gov/tpm/about/tpm.cfm

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RGVMPO PERFORMANCE BASED PLANNING

The following sections represent federal performance measures for the current RGVMPO 2045 MTP update. This is the first set of performance measures attributed to the RGVMAB following the consolidation of the three former MPOs found in the region (HCMPO, HSBMPO, and BMPO). Accordingly, these performance measures serve as the baseline for the RGVMPO's TPM process.

The RGVMPO 2045 MTP update fulfills its TPM responsibility using Federal performance goals and measures, as well as compliant TxDOT performance measure targets to align with guidelines created by MAP-21 and continued by the FAST Act. The transportation system needs assessment provides existing target measures, which creates a base to understand the state of the current RGVMAB transportation system in comparison to assigned TxDOT targets. Additionally, this section describes the RGVMPO's approach to performance-based decision making to support the national goals described in 23 U.S.C. 150(b) discussed in chapter 2 and throughout this MTP.

To track progress towards goals, federal performance measures are continuously tracked in coordination with TxDOT's TPM targets (Table 9-1). Due to the RGVMPO's current air quality attainment status, the organization currently reports performance measures for 15 of the 18 federal performance measures.

These measures focus on the safety of the RGV Metropolitan Area Boundary (MAB) transportation network, condition and reliability of interstate and remaining National Highway System (NHS) infrastructure, and reliability of freight movement throughout the region. Data producing these measures derives from TxDOT's Crash Record Information System (CRIS), FHWA's National Performance Management Research Data Set (NPMRDS), and through coordination with regional FTA funded transit agencies.

Table 9-1: Federal Performance Measures applicable to RGVMPO

Goal Area	Measure
FHWA PM1 Safety	Number of Fatalities
	Rate of Fatalities per 100 million Vehicle Miles Traveled (VMT)
	Number of serious injuries
	Rate of serious injuries per 100 million VMT
	Number of non-motorized fatalities
	Number of non-motorized serious injuries
FHWA PM2 Infrastructure Condition	Percentage of pavements of the Interstate System in Good condition
	Percentage of pavements of the Interstate System in Poor condition
	Percentage of pavements of the non-Interstate NHS in Good condition
	Percentage of pavements of the non-Interstate NHS in Poor condition
	Percentage of NHS bridges classified as in Good condition
	Percentage of NHS bridges classified as in Poor condition

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Goal Area	Measure
FHWA PM3 System Performance/Freight/CMAQ	**System Performance:** Percentage of person-miles traveled on the Interstate that are reliable (LOTTR)
	System Performance: Percentage of person-miles traveled on the non-Interstate NHS that are reliable (LOTTR)
	Freight Movement: percentage of Interstate system mileage providing for reliable truck travel time (TTTRI)
	***CMAQ:** Annual Total Tailpipe CO2 Emission on NHS
	***CMAQ:** Annual Hours of Peak Hour Excessive Delay (PHED) per capita
	***CMAQ:** Percent of Non-SOV Travel on network
FTA Transit Asset Management (TAM)	Percentage of revenue vehicles (by type) that exceed useful life benchmark (ULB)
	Percentage of non-revenue service vehicles (by type) that exceed ULB
	Percentage of facilities (by group) rated less than 3.0 on Transit Economic Requirements Model (TERM) scale
FTA Public Transportation Agency Safety Plan (PTASP)	Total number of reportable fatalities
	Rate of reportable fatalities per total vehicle revenue miles by mode
	Total number of reportable injuries
	Rate of reportable injuries per total vehicle revenue miles by mode
	Total number of reportable events
	Rate of reportable events per total vehicle revenue miles by mode
	Mean distance between major mechanical failures by mode

**Applies to areas designated as nonattainment or maintenance for ozone, carbon monoxide or particulate matter.*

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Category 7 Scoring

In addition to the continuous comprehensive coordination on regional needs for UTP funding categories with the Pharr TxDOT district mentioned in chapter 8, the RGVMPO has also developed a performance-based scoring process for projects submitted for Category 7 funding consideration.

A spectrum of methods exists for prioritizing projects using data and performance based planning (PBP) principles. Regardless of the method, the various factors and considerations that contribute to the process of applying existing and historical performance measures to the evaluation of expected performance of proposed investments rely on one core principle which is using and referencing data to perform due diligence in assessing expected performance of investments as much as is possible.

The PBP project scoring process applies due diligence by reviewing contributing factors and applying technical expertise to gauge and score how well proposed improvements will contribute to national, state, and regional goals and targets in order to improve the system. The RGVMPO staff have coordinated extensively with the Technical Advisory Committee to develop scoring criteria that reflect the regional and national priorities.

Through an iterative discussion, the RGVMPO staff and TAC refined a scoring for Category 7 projects to both leverage the technical expertise embodied in the TAC and reference performance criteria and regional goals to provide a robust scoring process for vetting and promoting projects geared to contribute towards targets.

This scoring process likewise provides a platform to communicate with project sponsors and decision makers about project implications. The process also investigates what conditions a proposed project is improving and asks the sponsor to reflect on why they are submitting the project being reviewed. The continuity of this process invariably will refine and improve the process by which projects are submitted for consideration as well as the projects themselves.

Table 9-2 shows the Scoring Criteria used by the staff and TAC when evaluating the submitted projects. The table contains evaluation criteria, the maximum points a project can receive for each criteria, the description and factors related to each criteria, and the evaluation method that instructs evaluators on how to assign points to the projects based on the criteria.

Table 9-2: RGVMPO Category 7 Scoring Criteria

Evaluation Criteria	Evaluation Method - Scoring	Goal Area
Increased Safety	Submitting sponsor is asked to provide explanation of Safety improvements and attach available supportive documentation. Project reviewed against safety data and regional contributing factors. **10 Points**	Safety
Fills gaps in current roadway network	Submitting sponsor is asked to provide explanation of Roadway Network Gaps Filled and attach available supportive documentation. **10 Points**	Connectivity (people & freight)
Regionally Significant	Within Local Government, **0 Points** Connects 2 Local Governments, **5 Points** Connects 3 or more Local Governments, **10 Points**	
Increases economic development opportunities	Submitting sponsor is asked to provide explanation of Economic Development Opportunities and attach available supportive documentation. **10 Points**	Freight Movement and Economic Vitality
Corridor completes or aides International Trade / Port Connectivity	Submitting sponsor is asked to provide explanation of corridor relation to international trade / port connectivity and attach available supportive documentation. **10 Points**	

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Evaluation Criteria	Evaluation Method - Scoring	Goal Area
Access to Transit Facility in Miles	Project distance from transit facility in miles Greater than .75, **0 Points** 0.5 to 0.75, **2 Points** 0.25 to 0.5, **5 Points** 0 to 0.25, **10 Points**	Mobility and Accessibility (Increase multi-modal options)
Access to Pedestrian Facility in Miles (Bicycle / Trail)	Project distance from pedestrian facility in miles Greater than .75, **0 Points** 0.5 to 0.75, **2 Points** 0.25 to 0.5, **5 Points** 0 to 0.25, **10 Points**	
Adds Sidewalks	None, **0 Points** One Side, **5 Points** Both Sides, **10 Points**	
Most Recent ADT Count	1000 - 5000, **5 Points** 5000 - 10000, **10 Points** 10000 - 15000,**15 Points** 15000 - 40000, **20 Points**	
* Congestion Reduction	*For Internal Use (Based on TDM) 0-25%, **5 Points** 25-50%, **10 Points** 50-75%, **15 Points** 75-100%, **20 Points**	Congestion Reduction and System Reliability
* Improves Travel Time *	*For Internal Use (Based on TDM) Less than 10%, **0 Points** 10% - 20%, **5 Points** Greater than 20%, **10 Points**	
ROW Status	Pending, **0** Started, **5** Complete, **10**	Reduced Project Delivery Delays
Environmental Status	Pending, **0** Started, **5** Complete, **10**	
Project Schematic Status	Pending, **0** Started, **5** Complete, **10**	
Local Match Available	Pending, **0** Started, **5** Complete, **10**	
Total Points	**170**	

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Transportation Alternatives Set Aside (TASA) Scoring

RGVMPO uses a set of specific criteria to evaluate and score projects submitted for TASA funding in the MAB to ensure an equitable and calculated approach for prioritizing projects. Table 9-3and Table 9-4 show the Scoring Criteria used by the BPAC and TAC when evaluating the submitted projects. The table contains evaluation criteria, the maximum points a project can receive for each criteria, the description and factors related to each criteria, and the evaluation method that instructs evaluators on how to assign points to the projects based on the criteria.

Table 9-3: RGVMPO TASA Scoring Criteria

Evaluation Criteria	Description/Factors	Evaluation Method
Improving Safety (Please use whole numbers)	Provides safer and less intimidating facilities for pedestrians, bicyclists, or other non-drivers by improving safety in areas with high numbers of crashes. This involves improved crossing, signalization, traffic calming and other safety improvements.	**13 PTS** - Improves safety in area with high # of crashes within a block (300ft) **8 PTS** - Improves mobility for elderly, disabled, and/or youth (disadvantaged population) **8 PTS** - Improves visibility of non-drivers to vehicular traffic
Making Linkages and Connections (Please use whole numbers)	Improves connections between neighborhoods, cities, transit services, bicycle facilities, or schools. This can be achieved through gap closures, extension of regional facilities, linking multiple jurisdictions, and providing access to rail stations, bus stops, & bicycle facilities via trails and sidewalks.	**6 PTS** - Connects other cities/ neighborhoods **6 PTS** - Connects to schools/public building **6 PTS** - Extends existing system (bike/ped/transit) **6 PTS** - Eliminates gaps in system (bike/ped/transit)
Incorporates Pedestrian and Bicycle Design Enhancements and Promotes Active Living (Please use whole numbers)	Provides pedestrian and bicycle areas with landscaping, sidewalk design, crossing treatments, street furniture, bike racks, or lighting which encourages pedestrian and cyclists to utilize area, thus providing health and environmental benefits	**5 PTS** - Provides design enhancements **5 PTS** - Provides bicycle parking/ seating for pedestrians, rest areas **5 PTS** - Provides trailheads, staging area and parking
Implementing Active Transportation or Mobility Plan (Please use whole numbers)	Improves ability to use walking and bicycling facilities for everyday activities including travel to work, school, and shopping as described in RGVMPO's Regional Bike Plan, Regional Pedestrian Plan, Regional Transit Plan, or other related community Master Plan adopted by a city or county's governing body	**4 PTS** - City Plan **3 PTS** - Regional Plan **3 PTS** - MPO Plan
Connecting to Employment, Households, and Activity Centers. Activity Centers include schools, gyms, birding	Provides access to major entertainment destinations, parks & recreation, residencies, and general businesses for large numbers of residents and/or employees.	**4 PTS** - Improves access to commercial areas **4 PTS** - Improves access to parks and recreational areas

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Evaluation Criteria	Description/Factors	Evaluation Method
centers, parks, Boys and Girls Club, etc. (Please use whole numbers)		**4 PTS** - Improves access to educational areas
Serving Disadvantaged (Environmental Justice) Areas (Please use whole numbers)	Provides access for underserved communities	**10 PTS** - Improves access to areas of commerce within or adjacent to 50% of households below poverty rate, as defined by Census
	Total Points	**0 to 100 Points**

Table 9-4: RGVMPO TASA 'Above and Beyond Criteria'

Evaluation Criteria	Evaluation Method
Local Match is: (Please use whole numbers)	• **2 PTS** = 21-30% • **4 PTS** = 31-40% • **6 PTS** = 41-50% • **8 PTS** = 51-60% • **10 PTS** = Above 61%
Project Readiness: PS&E, ROW (Please use whole numbers)	• **1 PT -** If ROW acquisition is 90% complete or not required • **2 PTS -** PS&E is at least 90% Complete
Funding completes the project (Please use whole numbers)	• **5 PTS -** Yes
Location of project has safe passing ordinance (Please use whole numbers)	• **2 PTS -** Yes
Total Points	**120 Points**

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RGVMPO 2045 MTP Update Performance Reporting

For each federal performance goal area relevant to the RGVMPO, current performance measures are compared to existing TxDOT targets, providing the status of the MPO's progress towards meeting the established targets. All recorded performance measures derive from the most up-to-date and readily available data.

PM1 Safety Performance

Current safety performance measures are presented in Table 9-5 below:

Table 9-5: Safety Performance Measures

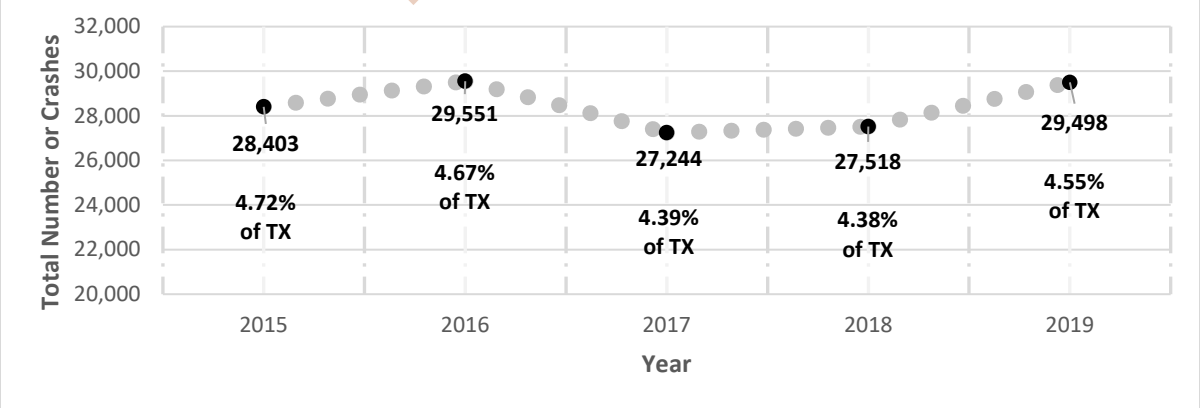
Measures	RGVMPO	2020 TxDOT Target	2030 TxDOT Target
Number of fatalities	88	3,840	2,280
Rate of fatalities per 100 million Vehicle Miles Traveled (VMT)	0.20	1.406	0.70
Number of serious injuries	393.6	17,394	-
Rate of serious injuries per 100 million VMT	0.90	6.286	-
Number of non-motorized fatalities	24.6	*	
Number of non-motorized serious injuries	55.2	*2,285	

**Target represents combined Non-Motorized Fatalities & Serious Injuries*

REGIONAL CRASH TRENDS

Between 2015 and 2019, a total of 142,216 crashes occurred within the RGVMAB. Over this five-year period, the total number of crashes per year has remained between the range of 27,000 to 30,000, with the largest single-year total (29,551) occurring in 2019. The region experienced an 8% decrease in the total number of crashes between 2016 and 2017 and a 7% increase between 2018 and 2019. Figure 9-1 summarizes the annual number of reported crashes in the region between 2015 and 2019.

Figure 9-1: Regional Crash Totals by Year & as a % of Total Statewide Crashes, 2015 - 2019



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ASSESSMENT OF PROGRESS

RGVMPO PM1 performance measures, specifically rate of fatalities per 100 million VMT and Rate of serious injuries per 100 million VMT are currently below 2020 TxDOT targets suggesting successful regional safety performance. The remaining four measures are not included in the TxDOT 2030 targets, however, should be continuously tracked to better understand RGVMPO safety performance as they are federally required performance measures. They also provide important insight into other harmful incidents related to automobiles as well as active transportation modes of transportation.

As noted in the Safety Analysis portion of chapter 4, though regional rate if fatality and serious injury are relatively low compared to statewide performance targets, the percentage of non-motorized users involved in fatal and sever crashes warrants a focus on bicycle and pedestrian safety and infrastructure improvements. Strategies to address these needs are implemented through the TASA scoring process as well as the RGVMPO Active Transportation Plan.

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PM2 Infrastructure Condition Performance

Current infrastructure condition performance measures are presented in Table 9-6 below:

Table 9-6: Infrastructure Condition Performance Measures

Measures	2019 Value - RGVMPO	2019 TxDOT Target	2030 TxDOT Target*
Percentage of pavements of the Interstate System in good condition.	84%	92.2%	--
Percentage of pavements of the Interstate System in poor condition.	1%	-	--
Percentage of pavements of the non-Interstate NHS in good condition.	57%	52%	-
Percentage of pavements of the non-Interstate NHS in poor condition.	9%	14.3%	-
Percentage of NHS bridges classified as in good condition.	51%	50.58%	-
Percentage of NHS bridges classified as in poor condition.	0%	0.8%	-

*TxDOT Targets represent 2030 available reported targets as published in 2021

ASSESSMENT OF PROGRESS

RGVMPO PM2 performance measures currently all meet or contribute to TxDOT available reported targets. Percent of pavements of the non-interstate NHS in good condition demonstrates successfully achieving the target by exceeding the target by 5%, while percentage in poor condition demonstrates successfully achieving the target by measuring below the TxDOT target by roughly 5%. Similarly, percentage of NHS bridges classified as in good condition successfully measures just above the TxDOT target, while those classified as in poor condition successfully measure at 0%, which is 0.8% below target. Percentage of pavement of the Interstate System in good and poor condition should continue to be monitored, not just because it is a federally required performance measures, but also because it provides the MPO and decision-makers with information on pavement conditions for some of the region's most heavily used roadways (e.g. I-2).

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PM3 System Performance & Freight Reliability Performance

Current safety performance measures are presented in Table 9-7 below:

Table 9-7: System Performance and Freight Reliability Performance Measures

Measures	2019 Value - RGVMPO	2020 TxDOT Target	2030 TxDOT Target*
Percentage of person-miles traveled on the interstate that are reliable.	94%	61.2%	
Percentage of person-miles traveled on the non-Interstate NHS that are reliable.	88%		
Truck Travel Time Reliability Index (TTTRI)	1.39	1.7	

* TxDOT Targets represent 2030 available reported targets as published in the 2021

ASSESSMENT OF PROGRESS

While TxDOT currently does not provide targets for 2030 PM3 targets, it is critical for the RGVMPO to continue to monitor percentage of person-miles traveled on the interstate that are reliable and unreliable, as well as TTTRI. These are federally required performance measures and provide the region with information that suggests which segments of interstate roadway may be inconsistently congested and cause increased delays for both automobile and freight traffic.

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Additional Performance Measures

The RGVMPO also calculates and monitors performance measures additional to those provided in the FAST Act TPM guidelines. Incorporating additional measures which summarize regional performance and trends further helps decision-makers make enhanced investment decisions. This in turn leads to a better performing transportation system which produces safe, connected, and productive communities within the RGVMAB.

Travel Demand Model Performance Measures

These additional performance measures derive from the RGVMPO TDM and provide further information on system congestion in terms of delay. The measures help bolster the NPMRDS national performance measure information for existing multimodal transportation system conditions. Explanations for each measure can be found in Chapter 4. Table 9-8 through Table 9-10 display the additional performance measures provided by the RGVMPO. Current year (2019 E+C) outputs were compared to both the 2045 no-build (Table 9-8) and build outputs (Table 9-9) to emphasize potential issues on the RGVMAB roadway network, as well as highlight expected improvements and performance resulting from the implemented set of MTP projects (2045 build scenario).

Table 9-8: RGVMPO TDM Performance Measures – E+C No Build Analysis

Measures	2019 – Existing Conditions*			2045 – No Build			% Change for Totals
	Interstate & Toll	Arterials	Total	Interstate & Toll	Arterials	Total	
Daily VMT**	1,253	3,659	4,912	2,030	6,501	8,531	74%
per person			3.44			3.69	7%
Daily VHT	28,422	124,215	152,637	70,253	763,769	834,022	446%
per person			0.11			0.36	237%
Annual Weekday Vehicle Hours of Delay**	1,019	9,157	10,176	7,998	196,716	204,714	1912%
per person			7.13			88.53	1142%
Weighted Avg. TTI	1.17	1.61	1.39	1.84	6.79	4.32	211%

**2019 was used as stand in for current conditions because it is the most recent year for which complete data is available*

***VMT & Annual Weekday Vehicle Hours of Delay represent metrics/1,000 and rounded to nearest whole number*

Table 9-9: RGVMPO TDM Performance Measures – Build Analysis

Measure	2019 – Existing Conditions*			2045 – Build			% Change for Totals
	Interstate & Toll	Arterials	Total	Interstate & Toll	Arterials	Total	
Daily VMT**	1,253	3,658	4,911	1,932	6,668	8,600	75%
per person			3.44			3.72	8%
Daily VHT	28,422	124,215	152,637	57,739	379,881	437,621	187%
per person			0.11			0.19	77%
Annual Weekday Vehicle Hours of Delay**	1,019	9,157	10,176	5,154	72,227	77,381	660%
per person			7.13			33.46	369%
Weighted Avg. TTI	1.17	1.61	1.39	1.18	1.06	1.12	45%

**2019 was used as stand in for current conditions because it is the most recent year for which complete data is available*

***VMT & Annual Weekday Vehicle Hours of Delay represent metrics/1,000 and rounded to nearest whole number*

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Table 9-10 compares the E+C No Build with the Build network, which is comprised of the capacity projects represented in the current MTP. The difference in the metrics between No-Build and Build scenarios helps provide a decision-making tool to gauge expected improvements in reducing congestion and delay for future demographic, job growth, and land use scenarios represented in the TDM.

Table 9-10: RGVMPO TDM Performance Measures – E+C No Build Vs Build Analysis

Measure	2045 – No Build			2045 – Build			Change from No Build
	Interstate & Toll	Arterials	Total	Interstate & Toll	Arterials	Total	
Daily VMT**	2,030	6,501	8,531	1,932	6,668	8,600	0.81%
per person			3.69			3.72	1%
Daily VHT	70,253	763,769	834,022	57,739	379,881	437,621	-48%
per person			0.36			0.19	-47%
Annual Weekday Vehicle Hours of Delay**	7,998	196,716	204,714	5,154	72,227	77,381	-62%
per person			88.53			33.46	-62%
Weighted Avg. TTI	1.84	6.79	4.32	1.18	1.06	1.12	-74%

***VMT & Annual Weekday Vehicle Hours of Delay represent metrics/1,000 and rounded to nearest whole number*

ASSESSMENT OF PROGRESS

The comparison of the no-build and build TDM outputs suggests substantial improvements created by the build scenario across a majority of the measures. Negative values are highlighted in darker green as they represent measures that have decreased after project implementation, and therefore project decreases in regional and per capita congestion and delay. Only Daily VMT at the regional and per capita level show increases, however, these are incremental as they do not exceed 1%. All other measures are projected to decrease significantly with the implementation of RGVMPO capacity projects.

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Transit Performance Measures

Moving Ahead for Progress in the 21st Century (MAP-21) granted the Federal Transit Administration (FTA) the authority to establish and enforce a comprehensive framework to oversee the safety of public transportation throughout the United States. MAP-21 expanded the regulatory authority of FTA to oversee safety, providing an opportunity to assist transit agencies in moving towards a more holistic, performance-based approach to Safety Management Systems (SMS). This authority was continued through the Fixing America's Surface Transportation Act (FAST Act).

In compliance with MAP-21 and the FAST Act, FTA promulgated a Public Transportation Safety Program on August 11, 2016 that adopted SMS as the foundation for developing and implementing a Safety Program. FTA is committed to developing, implementing, and consistently improving strategies and processes to ensure that transit achieves the highest practicable level of safety. SMS helps organizations improve upon their safety performance by supporting the institutionalization of beliefs, practices, and procedures for identifying, mitigating, and monitoring safety risks.

There are several components of the national safety program, including the National Public Transportation Safety Plan (NSP), that FTA published to provide guidance on managing safety risks and safety hazards. One element of the NSP is the Transit Asset Management (TAM) Plan. Public transportation agencies implemented TAM plans across the industry in 2018. The subsequent final ruling by FTA to implement the NSP is the Public Transportation Agency Safety Plan (PTASP) rule, 49 CFR Part 673, and guidance provided by FTA.

PTASP PERFORMANCE MEASURES

Safety is a core business function of all public transportation providers and should be systematically applied to every aspect of service delivery. For the transit agencies within the RGVMAB, all levels of management, administration and operations are dedicated to and responsible for the safety of their clientele and themselves. To improve public transportation safety to the highest practicable level in the State of Texas and comply with FTA requirements, the Texas Department of Transportation (TxDOT) has developed individual Agency Safety Plans (ASP) in collaboration with the Rio Grande Valley Metropolitan Planning Organization (MPO), and the three primary Section 5307 Public Transportation Providers in the RGVMAB.

To ensure that the necessary processes are in place to accomplish both enhanced safety at the local level and the goals of the NSP, The City of Brownsville and B-Metro, City of McAllen and Metro McAllen, and the Lower Rio Grande Valley Development Council (LRGVDC), dba Valley Metro all have recently adopted their respective PTAPs and the tenets of SMS including a Safety Management Policy (SMP) and the processes for Safety Risk Management (SRM), Safety Assurance (SA), and Safety Promotion (SP), per 49 U.S.C. 5329(d)(1)(A).[2] Though the RGVMPO is not yet required to report these targets, they have been included and considered throughout the planning process.

[2] Federal Register, Vol. 81, No. 24

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Table 9-11: Rio Grande Valley 5307 Agencies: PTASP Performance Measures Table 9-11 displays the five-year average safety performance measures by mode of service provided by each agency. The modes of service represented in the table are fixed route, flex route, and demand response (DR). As the development and implementation of SMS is a relatively new requirement, each agency has also elected to maintain the benchmark performance as the first reporting year's target.

Table 9-11: Rio Grande Valley 5307 Agencies: PTASP Performance Measures

Measure/Target	B Metro		Metro McAllen		Valley Metro	
	Fixed Route	DR	Fixed Route	DR	Flex Route	DR
Total number of reportable fatalities	0	0	0	0	0	0
*Rate of reportable fatalities per total vehicle revenue miles by mode	0	0	0	0	0	0
Total number of reportable injuries	5.8	2	35	0	5.6	1
*Rate of reportable injuries per total vehicle revenue miles by mode	0.78	1.26	1.5	0	0.28	0.72
Total number of reportable events	0	0	36	0	6.2	1.2
*Rate of reportable events per total vehicle revenue miles by mode	0	0	1.5	0	0.31	0.87
Mean distance between major mechanical failures by mode	4,175	18,468	4,114	81,795	82,200	57,738

*rate = total number x 100,000/total revenue vehicle miles traveled

ASSESSMENT OF PROGRESS

Because the rule establishing safety performance targets for urban transit agencies is a new requirement, as of yet there is no measurable assessment of progress. RGVMPO coordination and participation in the RTAP will help provide a clearinghouse for transit capacity and safety grant coordination and will ensure ongoing maintenance and evaluation of these metrics.

TRANSPORATION ASSET MANAGEMENT (TAM) PERFORMANCE MEASURES

Following the FAST Act, a 2015 FTA study found that about 40 percent of buses and 23 percent of rail transit assets were listed in marginal or poor condition, with a total backlog of around 90 billion dollars. Thus, the FTA took action to prevent further deterioration of public transit networks. In July 2016, TAM plans were codified as a legal requirement for transit agencies receiving FTA funding that provide open public transportation. Given limited funding, this framework establishes procedures and guidance for all public transportation networks to move towards a state of good repair.

The majority of transit assets owned or managed by the qualifying FTA-funded (Federal Transit Administration) public transportation providers in the RGVMAB are in good condition.

The transit providers in the RGVMAB are dedicated to continuously providing transportation solutions for accessibility to employment, education, medical care, grocery stores, and other services. With limited funding and a growing backlog of needs, it is critical to maximize existing resources, maintain a State of Good Repair (SGR), and provide the tools necessary for Public Transportation providers to provide safe, reliable, and cost-effective services.

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Though asset management is a data focused endeavor, developing a plan is a collaborative process, requiring coordination and data sharing from many different agencies with different operating systems and reporting processes. Table 9-12 through Table 9-14 represent the TAM targets of the three 5307 transit agencies in the RGVMAB.

Table 9-12: B-Metro TAM Targets

Measure	Asset Class	2021	2022
Revenue			
% of revenue vehicles within a particular asset class that have met or exceeded their useful life benchmark	Bus	0%	11%
	Cutaway	0%	7%
Equipment			
% of vehicles within a particular asset class that have met or exceeded their useful life benchmark	Non-revenue/service automobile	0%	0%
Facilities			
Condition - % of vehicles with condition rating below 3.0 on FTA Transit Economic Requirements Model (TERM) Scale	Administration	0%	5%
	Maintenance	0%	2%
	Parking Structures	0%	2%
	Passenger Facilities	5%	0%

Table 9-13: Metro McAllen TAM Targets

Measure	Asset Class	2021	2022	2023	2024
Revenue					
% of revenue vehicles within a particular asset class that have met or exceeded their useful life benchmark	Bus	0%	20%	12%	8%
	Cutaway	0%	0%	0%	0%
	Sport Utility Vehicle	0%	0%	0%	0%
Equipment					
% of vehicles within a particular asset class that have met or exceeded their useful life benchmark	Non-revenue/service automobile	0%	0%	0%	0%
	Trucks and other Rubber Tire Vehicles	0%	0%	0%	0%
Facilities					
Condition - % of vehicles with condition rating below 3.0 on FTA Transit Economic Requirements Model (TERM) Scale	Administration	0%	0%	0%	0%
	Maintenance	0%	0%	0%	0%
	Parking Structures	0%	0%	0%	0%
	Passenger Facilities	0%	0%	0%	0%

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Table 9-14: Valley Metro TAM Targets

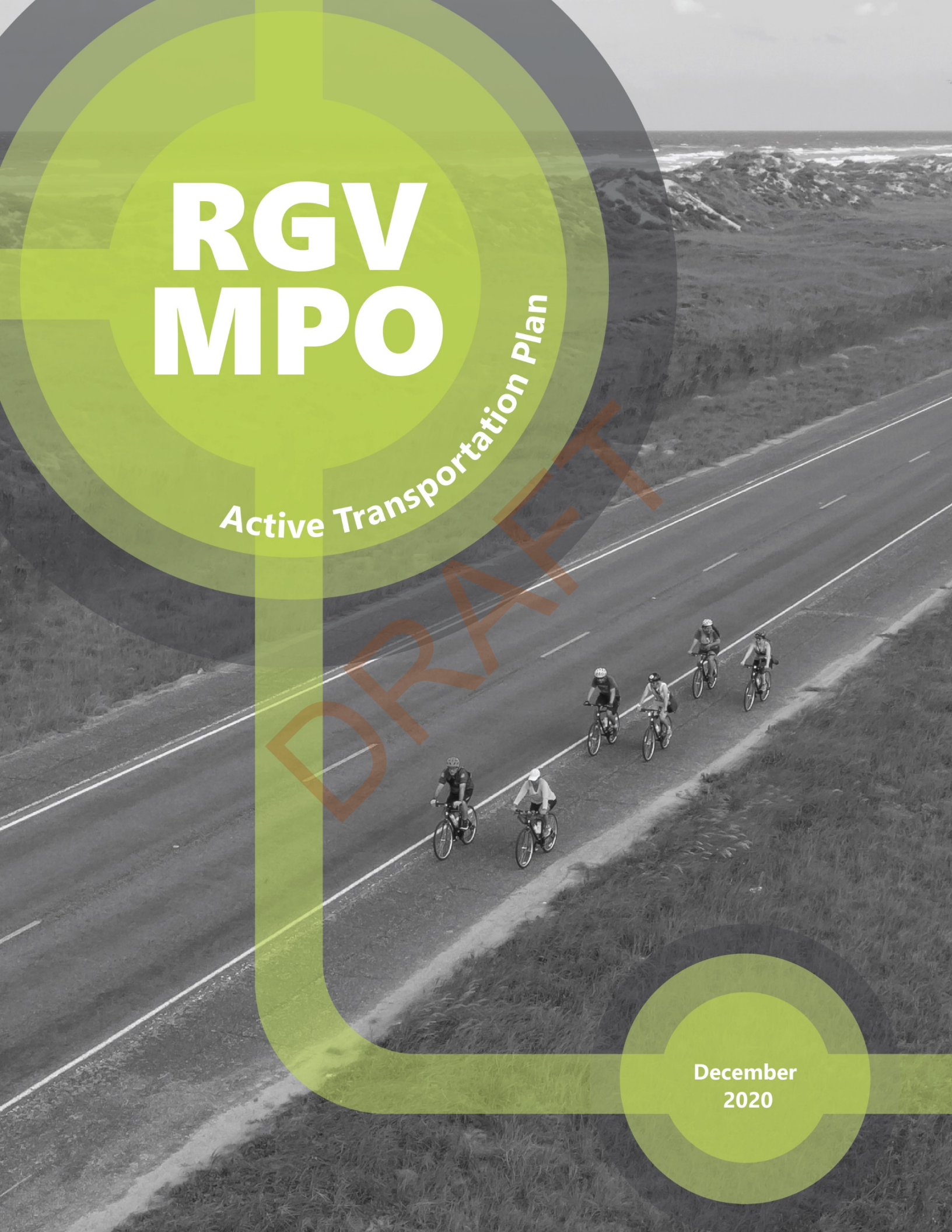
Measure	Asset Class	2021	2022	2023
Revenue				
% of revenue vehicles within a particular asset class that have met or exceeded their useful life benchmark	Bus	1%	1%	1%
	Cutaway	14%	14%	14%
	Van	36%	36%	36%
Equipment				
% of vehicles within a particular asset class that have met or exceeded their useful life benchmark	Non-revenue/service automobile	1%	1%	1%
Facilities				
Condition - % of vehicles with condition rating below 3.0 on FTA Transit Economic Requirements Model (TERM) Scale	Administration	1%	1%	1%
	Maintenance	1%	1%	1%
	Parking Structures	1%	1%	1%

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ASSESSMENT OF PROGRESS

As the goal of TAM targets is preservation of the conditions of public transportation vehicles and facilities and moving to a State of Good Repair priority, maintenance and capital projects for transit have a positive effect in moving TAM performance targets. Ultimately, Transit is an integral part of the multimodal network for the region and dependability is a key factor. Target achievement is based upon the actual conditions derived from the region's public transit providers, as reported in Transit Asset Management Plans, as of July 2020. For all three reporting agencies, targets are manageable for all four transit asset performance areas, though with expected reductions in funding, in some instances future targets reflect a managed decline in SGR.


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RGV
MPO
in collaboration with
ATG
ALLIANCE
TRANSPORTATION GROUP



RGV MPO

Active Transportation Plan

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December
2020

This document was prepared in cooperation with:

The Rio Grande Valley Metropolitan Planning Organization

and

The Texas Department of Transportation

The document was reviewed and approved by:

The Rio Grande Valley Metropolitan Planning Organization – Transportation Policy Board

On 12/10/2020

Rio Grande Valley Planning Organization (RGVMPO)

Notice of Non-Discrimination

Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d-1) and 49 CRF part 21; The Older Americans Act, as amended (42 U.S.C. 6101), prohibiting discrimination on the bases of age in programs or activities receiving Federal financial assistance; and Section 324 of title 23 U.S.C. regarding the prohibition of discrimination based on gender;

The RGVMPO is committed throughout the development of its plans and programs to ensure that no person on the grounds of age, gender, race color or national origin is excluded from participation in, denied the benefits of, or subjected to discrimination under any program receiving federal financial assistance. No plans, programs or policies developed or implemented by the RGVMPO will have a disproportionately high adverse human health or environmental effect on minority and low-income populations. The RGVMPO plans continue to work on improving the accessibility of employment to the identified protected populations. Further, many of the current MPO public meetings are held in minority and low-income communities in the region and are located near accessible public transit facilities. Funding is allocated as part of the Unified Planning Work Program for a Title VI Plan to maintain an analytical approach that produces procedures that meet Title VI requirements by ensuring that federally-funded transportation projects adequately consider effects on low-income and minority segments of the population.

In order to be processed, signed original complaint forms must be mailed or hand delivered to:

Rio Grande Valley Metropolitan Planning Organization ATTN: Title VI Coordinator 510 South Pleasantview Drive Weslaco, Texas 78596

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Disadvantaged Business Enterprises (DBE) in planning projects: 49 U.S.C. 5332, prohibiting discrimination on the basis of race, color, creed, national origin, sex or age in employment business opportunity; and Section 1101 (b) of the SAFETEA-LU (Pub. L. 109-59) and 49 CFR part 26 regarding the involvement of disadvantaged business enterprises in USDOT funded projects; 23 CFR part 230, regarding the implementation of an equal employment opportunity program on Federal and Federal-aid highway construction contracts;

The RGVMPO follows the TXDOT DBE Plan. Funding is allocated as part of the Unified Planning Work Program to maintain an analytical approach that produces procedures that meet Environmental Justice requirements by ensuring that federally-funded transportation projects adequately consider effects on low-income and minority segments of the population.

Americans with Disabilities Act of 1990: The provision of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) and 49 CFR parts 27, 37, and 38; and Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794) and 49 CFR part 27 regarding discrimination against individuals with disabilities.

It is the policy of the RGVMPO to ensure that all agency programs and services are accessible to people with disabilities and are in compliance with the applicable regulations as a condition of receiving Federal financial assistance from the Department of Transportation. The RGVMPO will make reasonable accommodations to a qualified individual with a disability who attends on-site meetings and meeting facilities meet this requirement. Every effort is made to ensure that meeting facilities off-site are ADA accessible. A notice is published in advance of all MPO public meetings that reasonable accommodations will be provided for meeting locations on and off-site with a phone number and contact persons listed to provide assistance if needed. In addition, the RGVMPO staff is actively involved in various ADA-related initiatives which are being carried out as part of the Unified Planning Work Program including Elderly and Disabled Planning, the Job Access/Reverse Commute Program, and the review of ADA compliance documents developed by the region's transit and paratransit agencies, all of which focus on ensuring that transportation program and services across the region are accessible to those citizens with disabilities.

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Restrictions on influencing certain federal activities: CFR 29, Part 20;

It is the policy of the RGVMPO that no state or federal funds received by the agencies shall be paid to any person for the purpose of influencing the award of a federal contract, grant, or loan or the entering into of a cooperative agreement. NO state or federal funds received by the agencies shall be used directly or indirectly to influence any member of Congress, any member of the State Legislature, or any local elected official to favor or oppose the adoption of any prosed legislation pending before any federal, state, or local legislative body.

Credit/Disclaimer Statement

"The preparation of this report has been financed in part through grant[s] from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation, under the State Planning and Research Program, Section 505 [or Metropolitan Planning Program, Section 104(f)] of Title 23, U.S. Code. The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation."

Questions or other interest regarding the plan may be directed to:

Andrew Canon
Executive Director
acanon@rgvmpo.org

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1 INTRODUCTION

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In This Chapter:

- Plan Purpose
- Vision Statement & Key Principles
- What is Active Transportation?
- How Can Active Tourism Bolster the Economy?
- Who are we Planning For?

ACTIVELY PROMOTING CONNECTIONS

In coordination with the 2045 Rio Grande Valley Metropolitan Planning Organization (RGVMPO) Metropolitan Transportation Plan (MTP) update, the RGVMPO Active Transportation Plan (ATP) facilitates the creation of a regional approach to active transportation in the Rio Grande Valley while recognizing the unique community identities throughout the region. The purpose of this plan is to provide RGVMPO staff and local planning partners with a guide and source of information to continue to grow a supportive culture of walking and biking, and to expand the regional network of active transportation facilities.

VISION FOR THE FUTURE

The RGVMPO's regionally coordinated system for walking and bicycling is designed to provide world class facilities for active transportation and to integrate active tourism to support economic opportunity in local communities. The Rio Grande Valley's safe, comfortable, inclusive, and equitable system of active transportation facilities accommodates users of all ages and abilities, and supports increased public heath, excellent connectivity to transit and key destinations, simple and clear wayfinding for visitors and tourists, and a unique sense of place that celebrates the rich culture of the Rio Grande Valley.

Figure 1-1: Getting Active in the Rio Grande Valley





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Key Principles

Although each community is distinct in their own ways, the Rio Grande Valley is unified by three key principles and their collective vision for a regional transportation network. This coalition prioritizes improving **connectivity**, **accessibility,** and **community health** while planning for a comprehensive active transportation system. Supporting each of the key principals are goals that enhance walking and biking for people in the Rio Grande Valley. Key principles and supporting goals can be found below in **Figure 1-2**. Active transportation emphasizes using non-motorized modes of transportation such as walking or biking. These activities have the added benefit of also contributing to the active tourism sector, which encourages Rio Grande Valley visitors to participate in walking, running, and biking networks.

Figure 1-2: Key Principles and Supporting Goals

Connectivity: *Increasing mobility across active transportation modes, while creating an integrated regional transportation network*

Connect Transit with Active Transportation	Establish a Regional Hike/Bike Network	Connect Pedestrian Network
Connecting the first and last mile of public transit trips to create a realistic and comprehensive network	Link existing pedestrian routes, increase connectivity, and increase user comfort via a system of safe facilities	Filling sidewalk gaps and improving the quality of the pedestrian network

Accessibility: *Establishing a comprehensive system of transportation options and allowing users of all ages and abilities to access resources across the region*

Improve Connections to Key Destinations	Ensure Equity	Support Education and Encouragement
Improving connections to key destinations promotes more frequent participation in active transportation	Enhancing travel choices for underserved people while increasing access to basic needs, services, and employment	Encouraging user participation through education and empowering residents to engage with the community

Community Health: *Promoting active transportation modes that improve public health and support local economies*

Build Active Tourism Network	Improve Mental and Physical Health	Improve System Safety
Supporting job creation and local spending through active tourism	Integrating activity to lower the effects of obesity, heart disease, mental health issues and other chronic conditions	Reducing speeds and minimizing conflicts with motorized vehicles to increase safety for all users

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WHAT IS ACTIVE TRANSPORTATION?

The Rio Grande Valley grapples with the challenges of high rates of chronic health concerns, pollution, and economic hardship compared to other Texas and US regions due in part to the over reliance on automobiles and disparities in socioeconomic status. Although no one action can combat these stressors simultaneously, an approach to mitigating such issues can be through encouraging active transportation, which builds healthy communities and promotes physical activity—while supporting the economy and environment. Although, most Texans rely on automobiles to get to work, run their errands and travel around town, more and more residents have been discovering active modes of transportation as communities invest in sidewalks, bike lanes, and Hike & Bike trails.

Figure 1-3: Bicycle Art in the Rio Grande Valley



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Active transportation is a sustainable transportation option and includes walking or bicycling for our daily commutes. While walking and bicycling are typically considered when discussing active transportation, it can also include any form of non-motorized, human-generated mode of transportation such as skateboarding, kayaking, and rollerblading. Taking advantage of active forms of transportation can improve community health and wellness, while reducing travel costs and expanding transportation networks to residents who do not own a vehicle.

Why Improve Active Transportation?

Investing in active transportation creates opportunities for residents to incorporate physical activity in their lifestyles. Not only does it improve the health of our communities, it also has significant environmental and economic impacts. In addition, in some communities where car ownership may be a financial burden for low income households, walking and bicycling may be primary modes of transportation.

Pathway to a Healthier Lifestyle

The Rio Grande Valley has some of the highest rates of obesity, Type 2 diabetes, and high blood pressure in the US. Almost 80% of the population in the Rio Grande Valley is considered overweight and the overall rate of diabetes in the region is 20% higher than the state[1]. Encouraging active

[1] (It's Time Texas, 2017)

lifestyles and providing communities with the active transportation infrastructure is an effective method to tackling these health concerns.

Figure 1-4: Cycling in the Rio Grande Valley



Transportation is often cited as a barrier to adequate healthcare. Investing in active transportation infrastructure grants residents the resources they need to access healthcare and prevent major illnesses through physical activity. It has been shown that residents who live in neighborhoods with sidewalks are 50% more likely to meet physical activity guidelines and those who live in dense neighborhoods are 33% more likely to meet them by walking for transportation[2].

The American Public Health Association has identified these health opportunities that can be attained through a comprehensive transportation network[3]:

- Women who walk or bike 30 minutes a day have a lower risk of breast cancer
- A 30-minute round-trip bicycle commute is associated with better mental health in men
- Incorporating active transportation in your commute is associated with an 11% reduction in cardiovascular risk
- Teenagers who use active transportation to get to school watch less TV and are less likely to smoke than their peers who are driven
- Public transportation users take 30% more steps and spend roughly 8 more minutes walking each day than drivers

Studies have shown physical activity can help reduce physical and mental illness; specifically, obesity, depression, heart disease, blood pressure and stress. Rio Grande Valley's proximity to the Mexican border and the fluid nature of border crossing in the region presents unique stressors in this community. Social policies and immigration status can be a source of stress and in some cases a barrier to adequate healthcare. Investing in active transportation increases mobility and connections to basic services to maintain a high-quality of life. These connections provide residents with the agency to access healthy food options, health resources, and mental health services.

[2] (Buehler, Winters, & Götschi, 2016)
[3] (American Public Health Association, 2010)

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Navigating Environmental Benefits

As climate change continues to impact our communities, we must adapt and protect the natural resources that remain. The Rio Grande Valley has a rich and diverse natural ecosystem, which is threatened by environmental issues, such as air pollution, flash flooding, and poor water quality. This region struggles with the reoccurrence of hurricanes and flooding year after year due to the tropical climate and proximity to the ocean. Reducing one's carbon footprint and opting to utilize non-motorized forms of transportation can mitigate a number of these concerns.

Figure 1-5: Natural Beauty of the Rio Grande Valley



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Our transportation choice directly impacts the air we breathe, the land we live on, and the natural world around us. Many destructive environmental impacts can be linked to car-centric communities. And like many places in the US, the Rio Grande Valley was built around highways and interstates.

Key direct and indirect environmental benefits include:



Building a transportation system that better supports active modes such as walking, biking, and transit as alternatives to driving alone can help lessen our dependence on motorized trips, therefore lessoning our carbon footprint connected to our transportation choice. A robust active transportation system can have a greater impact than just promoting an individual's choice in choosing active trips, it also promotes sustainable community design. For instance, active transportation infrastructure can reduce the need for parking facilities, which may allow for better preservation of natural habitats. The Lower Rio Grande Valley is home to a unique combination of temperate and tropical plants and

animals due to its geographic location. Located within in the LRGV are at least 24 plant species that are officially considered endangered by federal and state agencies[4]. Active transportation can facilitate the preservation these habitats through conscious consideration of how our transportation systems are laid out and the modes we engage with.

Route to Economic Growth

With almost 4.7 million workers or almost half of the state's private workforce, small businesses are at the core of Texas's economy[5]. In addition, the Rio Grande Valley's biodiversity provides the ideal landscape for wildlife and nature enthusiasts, a prime target demographic of active tourism. The potential for active tourism to bolster the local economy is unprecedented and a viable source of revenue for the region

HOW CAN ACTIVE TOURISM BOLSTER THE ECONOMY?

Long-distance trails and bike lanes in both urban and rural settings can act as tourist attractions in addition to supporting daily commuters. These multifunctional trails and paths boost the economy by supporting small businesses and promoting active tourism through effective place making. This method of tourism includes walking, biking, and hiking services and allows travelers to immerse themselves into authentic local experiences.

Encouraging outdoor recreation through active tourism can bring in revenue for local RGV communities. The United States Bureau of Economic Activity (BEA) found that outdoor recreation contributed **2.2 percent** (**$427.2 billion**) of national gross domestic product (GDP) in 2017. Of that, guided tours/outfitted travel, accounted for **$12.9 billion**. This was one of the fastest growing activities (**11%**) in 2017. Similarly, retail trade was the **second largest sector**, accounting for **$95.7 billion** of value added—with Texas contributing nearly **$8.5 billion**.

The Outdoor Industry Association found that bicycling participants spent **$83 billion** on 'trip-related' sales (bicycle tourism) and generated **848,000 jobs** nationally in 2017. Likewise, the BEA estimated outdoor recreation sales in 2018 to be **$734 billion**—surpassing industries such as agriculture, petroleum and coal, and computer and electronic products (Adventure Cycling Association , 2017).

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The economic benefits of active transportation directly affect its users by reducing transportation costs and health costs, while simultaneously producing jobs. By increasing mobility choice, lower income residents can access the resources they need without having to own a car or pay for public transportation. Trips made using active transportation create a spillover effect, which supports the local economy—local services and shops are frequented during those trip and money saved on transportation costs allows the user more spending power.

Moreover, bicycling and pedestrian projects have shown to be more labor intensive than road projects, which are more material intensive. This means that active transportation projects create more jobs per dollar than a road project through the employment of construction workers (Flusche,

[4] (USGS, 2016)
[5] Based on 2016 employment numbers (U.S. Small Business Administration, 2019).

2012). Using and building active transportation infrastructure can create and maintain employment. Effective placemaking and a stronger sense of community can be implemented through active transportation, making desirable, thriving, and healthy places to live.

Figure 1-6: Touring the Landscape of the Rio Grande Valley



Multiple studies have shown that the built environment and placemaking can directly impact property value and sales revenue by increasing retail visibility. A case study from Fort Worth, Texas, found an over 100% increase in retail sales after bike lanes and improved bike parking were added to the commercial corridor (The League of American Bicyclists, 2018). In fact, most errands in the US are within walking or biking distance. Twenty-seven percent of errands are within easy walking distance (<1 mile), while sixty-one percent are within easy biking distance (<5 miles)[6]. While property values are higher and more stable in neighborhoods where residents utilize active modes of transportation, this plan takes into consideration both the economic benefit and risk of gentrification when considering the impacts of implementing equitable infrastructure within RGV communities.

WHO ARE WE PLANNING FOR?

The Rio Grande Valley is a diverse and culturally rich region of Texas, as is demonstrated by the people who live here and their transportation needs. Using both community feedback taken from the public engagement effort and using common concerns voiced by active transportation users, regardless of location, these user profiles have been developed to showcase the wide array of typical user experiences that need to be considered when developing an active transportation plan in RGV. This ATP is built to help people, and the profiles below are just examples of people you may find in the Rio Grande Valley who have concerns and needs regarding the active transportation network.

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[6] (Buehler, Winters, & Götschi, 2016)

User Profiles



MICHAEL often uses a charter bus service to get to his destination. While the charter system works, he feels it could be more efficient.



FATEMA is a mother of two and often walks her children to the school bus. She has noticed the need for a safer crossing at the large intersection near her home.



CHRIS has lived in the community for many years. He walks to his local grocery store and knows the bus route well. Juan wishes there were more benches at his bus stops.



GLORIA is a recent retiree who enjoys walking around her neighborhood in the evening but wishes there was more shade near the sidewalks.



JUAN is a new resident who does not have access to a car. He'd like to explore the region more but has trouble understanding the regional bike system.



MARIA is a young professional who loves to ride her bike to work but feels that there are not enough designated areas for bikers on her commute to work.



MICHELLE is a college student and uses the campus bus to get around. She wishes there were a regional route to take back home for winter break.



SHAWN is an eighth grader who lives two blocks from school, but his parents drive him because there are no sidewalks in his neighborhood.

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Transportation needs vary from person to person; however, key trends were identified from our community feedback. RGV residents are primarily concerned about connectivity, accessibility, and safety. Residents feel there are not enough sidewalks in their communities and that the existing roads are not safe enough to bike on. Residents also expressed the desire for a seamless and well-connected active transportation system from which all basic needs could be accessed. The active transportation plan aims to address these needs through this collaborative effort between the municipalities of the Rio Grande Valley, which considers how to develop sustainable, healthy connections. This is centered around a larger health initiative in the region that aims to inspire residents to incorporate physical activity into their daily lives; celebrate the natural beauty and showcase the diverse communities of the Rio Grande Valley.

Figure 1-7: All Ages and Abilities Facility



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2 PUBLIC ENGAGEMENT

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In This Chapter:

- Public Outreach Methods
- Visioning Process
- Stakeholder Meetings
- Draft Plan Review

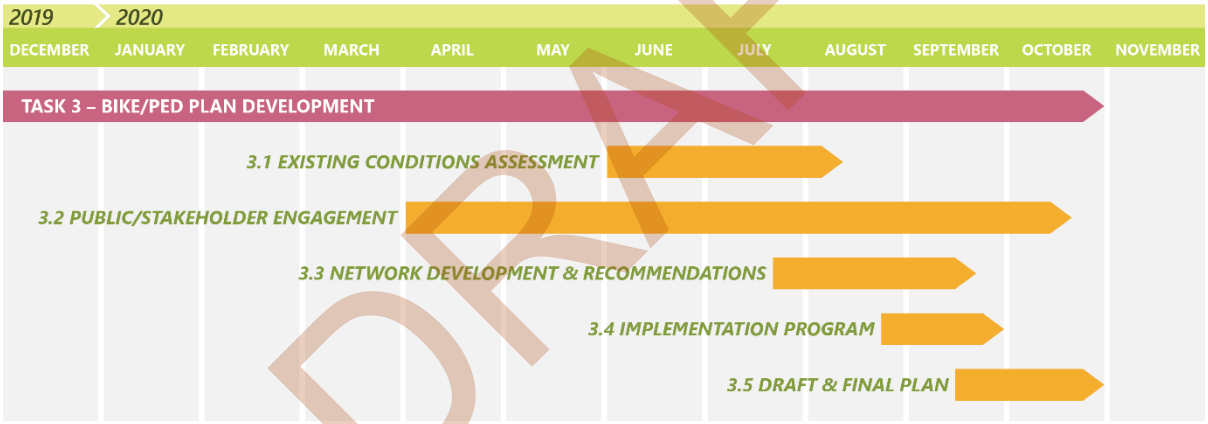
PUBLIC OUTREACH

Public engagement is essential to any well-developed ATP. Feedback from the public gives decision makers a better perspective on the daily experiences of people who walk and bike, providing a more holistic understanding of the community's active transportation needs and goals. To maximize public input, public participation strategies were implemented early in the development of the RGVMPO ATP and in coordination with the RGVMPO 2045 MTP update. A variety of engagement strategies were used, including:

- **Online visioning tools**
- **Surveys**
- **Stakeholder meetings**
- **Virtual open house**

The following sections outline the different methods used to engage the Rio Grande Valley community, many of which were conducted in tandem with the MTP public engagement process.

Figure 2-1: ATP Timeline



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VISIONING

The RGVMPO and project team conducted multiple public and stakeholder outreach efforts to better understand the community's transportation challenges, needs, and opportunities. The participants' responses provided insight into their vision for the future of the active transportation system and their goals for the RGVMAB through 2045. This section describes the visioning process used for the RGVMPO ATP, including online visioning tools and public surveys.

BPAC Visioning Tool

The main objective of the online visioning process for the RGVMPO ATP was to solicit input from the Bicycle and Pedestrian Advisory Committee (BPAC), and the community they represent, regarding their priorities for the future of active transportation in the RGVMAB. The BPAC is a subcommittee to the RGVMPO Technical Advisory Committee (TAC) and is comprised of 22 members representing municipalities, local businesses, and private citizens who are engaged with active transportation issues in their communities spread across the Rio Grande Valley. Representatives from TxDOT, RGVMPO,

Texas State Parks and Wildlife, and Valley Metro are also members of the BPAC. The BPAC members were an especially valuable voice in the development of the ATP, due to their breadth of knowledge and understanding of local needs, as the challenges presented by the COVID-19 pandemic made reaching all corners of the RGVMAB more difficult. Members of the BPAC committee are listed in **Table 2-1** below.

Table 2-1: RGVMPO BPAC Members

Entity	Member
Bicycle / Ped Health Advocate	Rose Gowen (Chairperson)
Bicycle / Pedestrian Citizen At-Large	Michael McNew (Vice Chairman)
City of Brownsville	Cody Baczewski (Designee)
City of Brownsville	Antonio Zubieta (Alternate)
City of Edinburg	Larry Ayala (Designee)
City of Harlingen	Andy Vigstol (Designee)
City of Harlingen	Javier Mendez (Alternate)
City of McAllen	Marlen Garza (Designee)
City of McAllen	Martina Mejia (Alternate)
City of Pharr	Cynthia Garza (Designee)
City of Pharr	Maria Rangel (Alternate)
Texas Parks/Wildlife Department – Estero Llano Grande State Park	Javier De Leon (Designee)
TxDOT	Joseph E. Leal (Designee)
TxDOT	Evan Roberts (Alternate)
TxDOT	Craig Wuensche (Alternate)
Valley Metro – B-Cycle	Juan Macias (Designee)
Valley Metro	Frank Jaramillo (Designee)
Bicycle World RGV	Ana Adame (Designee)
Citizen At-Large	Eudenia "Eudy" Carrillo (Designee)
U.S. Fish and Wildlife - Santa Ana National Wildlife Refuge	Christine Donald (Designee)
Museum South Texas History	Rene A. Ballesteros (Designee)
Bicycle / Pedestrian Citizen At-Large	Richard Cavin (Designee)
Bicycle / Pedestrian Citizen At-Large	Michael Padgett(Designee)

Due to unforeseen circumstances caused by the COVID-19 pandemic, the entirety of the visioning process was conducted online. The ATP online visioning tool was a custom-built website created specifically for BPAC containing two modules: a survey and an interactive map. The tool was introduced to BPAC members in a meeting that demonstrated how to use the tool effectively. The interactive map provided the BPAC committee members an opportunity to draw on the map in order to indicate locations where they felt concerns, barriers, or opportunities for walking and biking existed in their communities. In addition, each BPAC member was asked the survey questions found below in

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Table 2-2. The visioning tool was open from April 15th to May 31st and the modules yielded 5 survey responses and 21 comments on the interactive map.

Table 2-2: BPAC Survey Questions

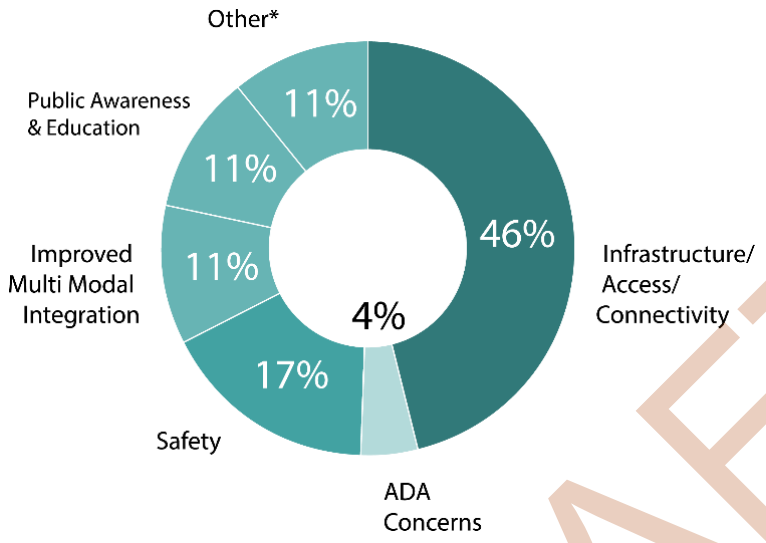
BPAC Survey Questions
Do you have any particular transportation problems/challenges with which either you or your constituency are currently dealing? Expect to deal with in the future?
Do you have any safety concerns relative to the transportation system?
Are there any changes relative to your agency's/organization's plans for the future that will impact the transportation system?
How do you see the future growth in the region impacting your agency/organization?
How do you normally communicate your needs relative to changes in the transportation system? Do you ever work with the MPO?
What changes in the transportation system are needed in order to address future needs?
How do the airports, border crossings, ports, and spaceport affect the transportation system?
Are you aware of any issues related to bicycle and pedestrian travel in the region?
Are there any issues relative to bicyclists and pedestrian access to universities, schools, hospitals, shopping areas, downtown areas, historic or cultural areas, parks and recreational areas?
Are you aware of any efforts to address these issues?
Are you aware of concerns over ADA accessibility in the region?
Where are the major connectivity issues for bicyclists and pedestrians (e.g. sidewalks not connecting to bus stops, bicycle lanes that stop abruptly, etc.)? These specific locations can also be left in the interactive map.
What are the major safety issues in the region related to bicycle and pedestrian travel?
How do you envision the future transportation network for people who walk and bike in your region?

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BPAC Visioning Responses

The survey and interactive mapping tool were presented during a BPAC meeting via Microsoft Teams. The visioning process solicited insightful feedback from participants, and patterns often emerged in the responses. The results for each part of the visioning process are described below.

Figure 2-2: ATP Survey Results Themes



BPAC SURVEY

The BPAC survey included 14 questions regarding transportation in the RGVMAB, with a focus on active transportation. Feedback is described below, starting with the most common theme in the survey responses.

Infrastructure, Access, Connectivity

Out of all responses, nearly half were about infrastructure, access, and connectivity within the active transportation network. One committee member said, *"There is lacking or deficient infrastructure to give residents the opportunity to walk or connect existing efforts (hike and bike trails, sidewalks, etc.) across our region. Policies don't encourage active lifestyles or pedestrian-friendly environment."* The fragmented nature of the current active transportation network was mentioned several times, specifically noting sidewalks and bike lanes that end abruptly. Members expressed that the desired regional connectivity would require collaboration across municipalities and significant financial investment in infrastructure.

Safety

Lack of designated travel spaces for bicyclists and lack of sidewalk infrastructure were the most often-repeated safety concerns. One respondent said, *"My largest safety concern is the lack of designated space at intersections where the bike lanes and/or trails meet vehicular traffic. More bike lanes need to be protected and/or separated from moving vehicular traffic."* In addition, several people noted that drivers in the RGVMAB are not accustomed to bicyclists and pedestrians, so increased public awareness will be vital in creating safer active transportation routes.

Multi-Modal Integration

Respondents noted that there could be better coordination between the regional transit and active transportation networks. While many transit providers serve the Rio Grande Valley, improved connection between bus stops and active transportation networks will be crucial to fill service gaps and provide first and last mile options for transit riders. Additionally, one committee member noted that growth in the RGVMAB will likely lead to more demand for multimodal transportation and opportunities to implement the necessary infrastructure.

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Public Awareness

Driver education was the most consistent theme regarding public awareness. Committee members also expressed desire for public service announcements regarding bike and pedestrian laws, infrastructure, and etiquette. Additionally, better wayfinding materials, such as signs or maps of connecting corridors, are needed to inform residents about the existence of trails. Without adequate signage, *"it is difficult to safely navigate new cities/other parts of the region,"* one committee member said.

Americans with Disabilities Act (ADA) Concerns

BPAC members expressed a great need for more ADA-compliant infrastructure. One person noted, *"Many people who use mobility devices are [forced] to use the vehicular lanes to get to and from their destinations because they too frequently encounter cracked/broken sidewalks, gaps of sidewalks in a block and/or no ADA-compliant ramps."* Additionally, one member said that residents from smaller communities have less ADA-compliant infrastructure; while larger municipalities may need to make ADA-compliant improvements to existing sidewalks, smaller communities may lack sidewalk infrastructure altogether.

BPAC INTERACTIVE MAP

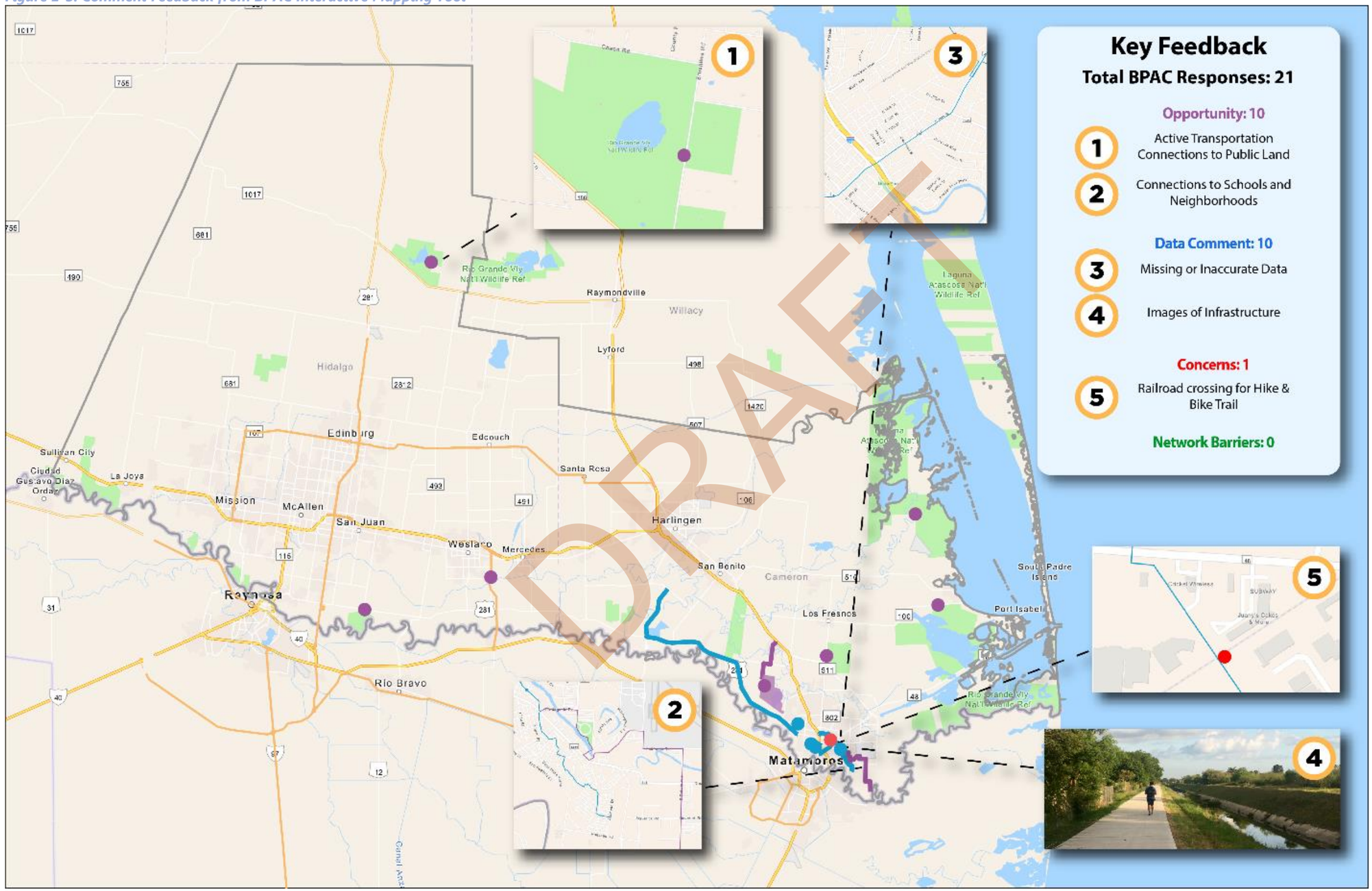
BPAC members were encouraged to utilize the interactive mapping tool to leave comments at specific locations of concern or opportunity. Of all the comments, 10 were related to potential active transportation opportunities, such as a connection to public land, schools, and neighborhoods. One comment raised a concern about the railroad crossing in a Brownsville hike and bike trail. The other 10 comments included images of infrastructure or provided information about where the existing active transportation infrastructure data set may be incomplete. The responses are summarized below in **Figure 2-3**.

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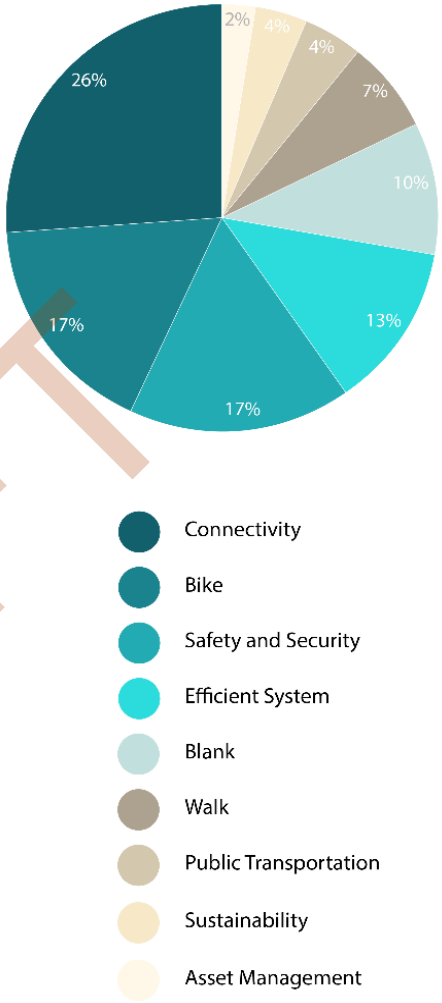
Figure 2-3: Comment Feedback from BPAC Interactive Mapping Tool



MTP Visioning Tool

As part of the public outreach efforts for the RGVMPO 2045 MTP, a second online tool was built to solicit public feedback. Similar to the ATP tool built for BPAC members, the MTP site included a public survey and interactive mapping tool, which received 83 survey responses and 200 comments on the map. More information on the demographic information of respondents can be found in Chapter 2 of the RGVMPO 2045 MTP. Much of the feedback from the MTP visioning tool aligns with comments received during the BPAC visioning process, as discussed in the paragraphs below.

Figure 2-4: Comments Received from MTP Interactive Mapping Tool



Safety

In the RGVMPO Visioning Survey module, respondents ranked safety as their number one priority, and safety was the third most consistent theme among responses on the interactive mapping tool. Most frequently, participants voiced a need for safer bike and pedestrian routes. One comment said,

"Bikers often share the roads with distracted drivers and are putting themselves at risk. Creating safe biking and walking trails would give people the options of choosing these means of conveyance over a car."

Other responses regarding safety included requests for more consistent lighting on expressways, installation of speedbumps on neighborhood streets, and additional sidewalks or sidewalk repairs to improve pedestrian safety.

Connectivity

System connectivity was the third-highest priority on the MTP visioning survey and the most common category for responses received on the interactive mapping tool. Bike and pedestrian connectivity was consistently mentioned. In addition to a general need for more bicycle and pedestrian trails, several respondents noted connections to parks and outdoor activities are conspicuously lacking. One commenter said, *"National Butterfly Center just a short 1-mile bike ride from Bentsen State Park, but no protected bike lane on Military Road E to encourage families to visit this park by bike."* Other hike and bike trail connection sites that were mentioned include Laguna Atascosa, Palo Alto Battlefield NHP, the Chachalaca Bike Trail, Hidalgo Pumphouse, and Valley Nature Center.

STAKEHOLDER MEETINGS

Throughout the development of the ATP, regular meetings were held with BPAC members to allow for a continuous stream of communication about the planning process. Additionally, a meeting with

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BPAC and community stakeholders was conducted for the MTP update, prompting additional feedback about the active transportation network. Both BPAC and MTP stakeholder meetings are described in detail below.

BPAC Meetings

A total of eight meetings were held with BPAC members throughout the development of the ATP. There were six scheduled BPAC meetings in addition to one visioning session and one MTP active transportation stakeholder meeting. **Table 2-3** shows the list of meetings, all of which were conducted via Microsoft Teams or another online platform due to the COVID-19 pandemic.

Table 2-3: BPAC Meetings

Date	Meeting	Meeting Topic
April 15, 2020	BPAC Meeting #1	Overview of the components for the ATP, and a demonstration of interactive map tool and survey.
May 6, 2020	BPAC Meeting #2	Update on comments for the interactive map tool and survey, and reminder to submit comments.
June 3, 2020	BPAC Meeting #3	Presentation and discussion of feedback on interactive map and survey.
July 2, 2020	MTP Stakeholder Meeting	Discussion about challenges in the overall transportation system and active transportation network.
July 16, 2020	ATP Visioning Workshop	Overview of feedback to-date, including the survey, map, stakeholder comments. I dentification of key routes and destination and key principles to guide the plan.
August 5, 2020	BPAC Meeting #4	Update on the Existing Conditions & Needs Assessment memo. Discussion of Vision Statement for plan.
September 2, 2020	BPAC Meeting #5	Update on project schedule. Discussion of TASA scoring process. Request for plan photos and vision statement comments.
October 7, 2020	BPAC Meeting #6	Introduction to draft plan chapters and instructions on leaving feedback. Open questions.

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VISIONING WORKSHOP

The visioning workshop conducted on July 16, 2020, engaged BPAC for two purposes. The first was to identify key destinations and routes in the region where the active transportation network could be expanded, and the second was to identify and establish key principals to guide the plan. The visioning workshop began with an overview of the BPAC survey feedback, interactive map comments, and the MTP stakeholder comments to-date. The group then discussed key destinations and important routes, listing them on the map as shown in **Figure 2-5**. A summary of comments received during the meeting is also shown in Error! Reference source not found.**.** In addition, the BPAC members confirmed key principles informed by previous regional plans and by BPAC comments. These key principles, as listed in chapter 1, were carried forward to shape and direct this plan.

Figure 2-5: Key Routes and Destinations Identified in Visioning Workshop

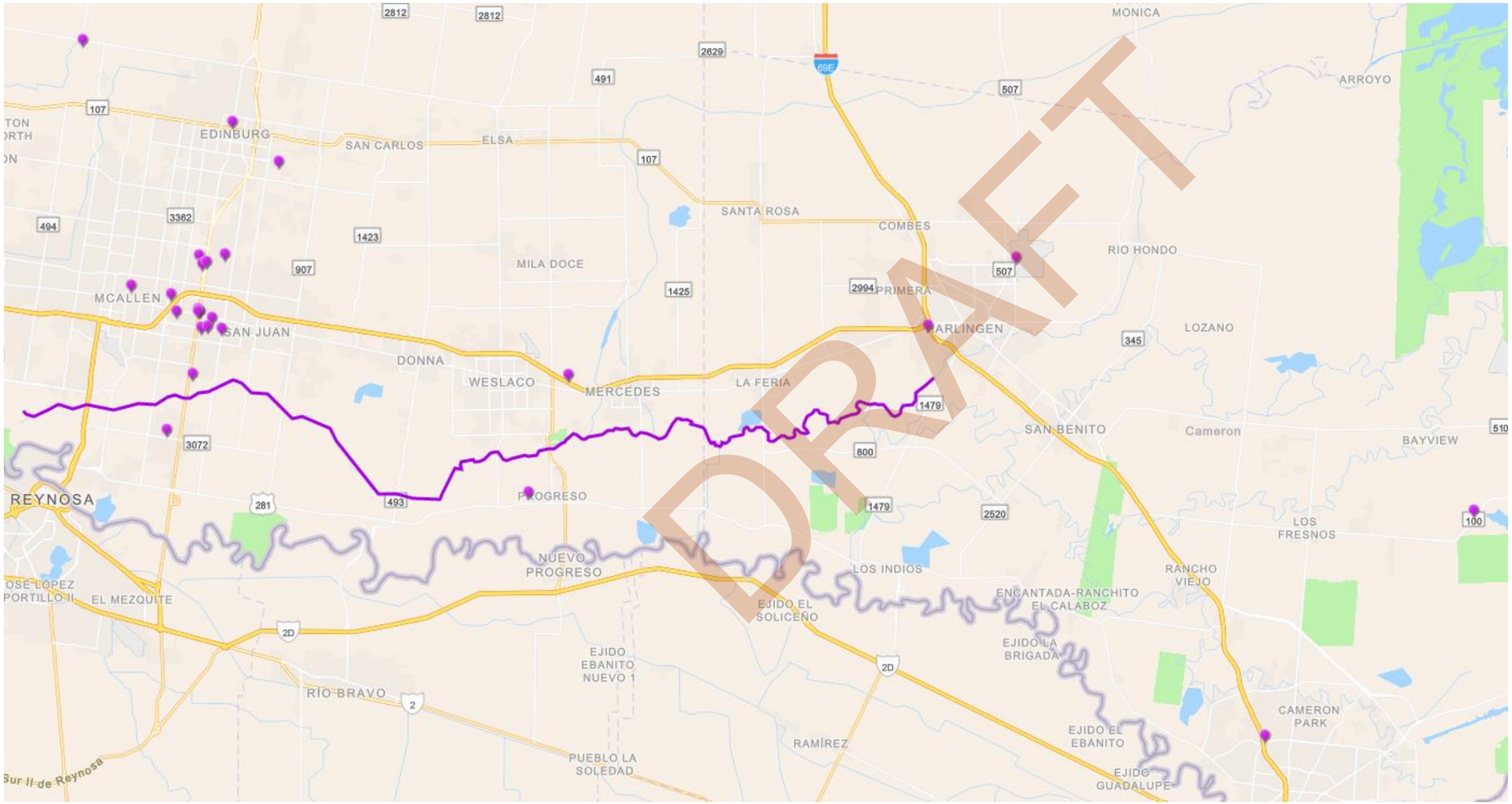


Table 2-4: Areas of Interest and Comments from BPAC Visioning Workshop

Region	Areas of Interest / Comments
McAllen	*A lot of people drive their bikes there to ride to Tres Lagos; could get there using shoulders if you wanted*
	Expressway and South McAllen are typically more low-income areas; we need to be sure to include them when considering AT networks
	Monte Cristo has potential for a good active transportation network, but currently feels risky to ride a bike
	Edinburg side streets are better for biking when the street parking on the more popular streets fills up; even in places where the data identifies shoulders, the reality of those areas being good for riding might not be great
	A popular route that runs EW in Edinburg is 107, but the traffic is high and speed is high. Not much space for someone to ride there, so you must go 10th St. or 12th St. above or below the courthouse to get around that congestion
Brownsville	*FM 802 and IH-69E intersection is complex and causes a lot of problems*
	TxDOT is doing median project along Boca Chica and intersection at freeway and Boca Chica is unsafe, so hopefully the median project will correct that if they do it right, but it hasn't been done yet
	Bajia Grande Trail isn't on the map
	The pedestrian bridge that they just did at IH-69E and the railroad should be on the map; trying to connect that bridge to a trail but they need to coordinate with the railroad
Harlingen	*East/West connections are lacking*
	Something that could connect La Jolla to Brownsville or even S Padre could be great
South Padre	*Hwy 100 to the island*
Not Specific to Area	*Issues with bicyclists trying to ride on chip seal*
	Make sure that the key principles don't make it look like some of the principles are more important than other ones because some people might not agree that, for instance, that education is more important that safety, though it's okay to prioritize certain geographic areas over others

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Figure 2-6: Screenshot of BPAC Online Meeting



MTP Stakeholder Meeting

Efforts have been made within communities in the RGVMAB to encourage biking and walking and to bring awareness to the health benefits of being active. Multiple stakeholder groups have seen an increase in utilization of active transportation, in part due to the COVID-19 pandemic. However, there is a need for better active transportation infrastructure and connectivity to key destinations. Feedback regarding active transportation from the MTP stakeholder meetings is outlined below.

SAFETY

Most of the concerns raised by stakeholders regarding safety were in regard to a lack of bicycle and pedestrian infrastructure and increasingly congested roadways. The recurring theme during all stakeholder interviews for the MTP was that inadequate biking and pedestrian infrastructure has led to dangerous situations that may have otherwise been avoided. These have been exacerbated by an overall increase in bicycle traffic during the COVID-19 pandemic.

Some expressed interest in projects such as grade separation and pedestrian signal timing for people crossing at major intersections. Driver education is a large concern and seen as a key factor in increasing transportation safety within the RGVMAB. The responsibility for safety is typically put on pedestrians and bicyclists, and an education campaign for automobile users may help alleviate this burden and reduce safety incidents. However, both drivers and novice riders – especially new bike share users – should be educated to increase safety and understanding of other modes.

CONNECTIVITY

Stakeholders expressed a desire for a regional trail network, funding for maintenance of trails, and education about alternative bike paths off the main road. Stakeholders noted that expanded transit services that are integrated with the active transportation network would encourage the use of both modes. Coordination between all transportation systems could also help create a robust active tourism economy by providing more transit and active transportation options for tourists.

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ENVIRONMENTAL

Access to green space through means of active transportation networks was an issue raised by environmental stakeholders. They noted that parks and nature centers may be *"close in proximity, but not in access,"* meaning that busy roads often act as barriers to the natural environment for cyclists and pedestrians and that public transit may not adequately service these destinations. Better infrastructure and connectivity is needed to help eco-tourism in the RGVMAB grow.

ADA CONCERNS

ADA acommodations were also a concern across all stakeholder groups; many stakeholders expressed the need for sidewalk improvements, such as truncated domes on curb ramps and better access to public transit to prevent social isolation for disabled residents. Ultimately, stakeholders expressed that it is important to consider how citizens of all ages and economic backgrounds will benefit from future investments throughout the region.

Overall, stakeholders observed that there is a current mindset that roads should be widened and dedicated to the car rather than sharing roadways with cyclists, pedestrians, and transit. In order to commit to a safe multimodal transportation system, this perspective will need to be addressed moving forward.

DRAFT PLAN REVIEW

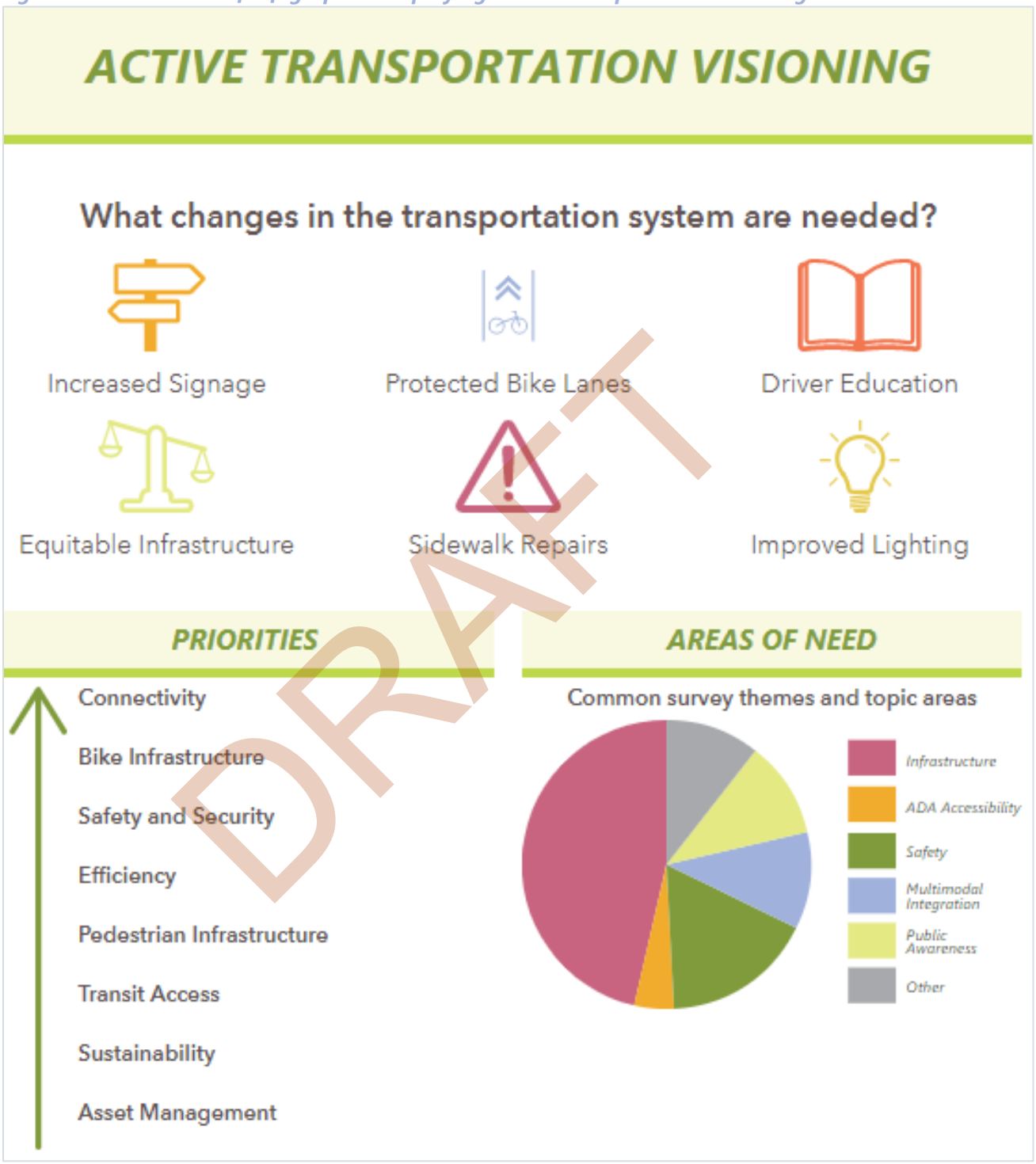
Similar to the visioning process, all reviewing activities were conducted virtually due to limitations caused by the COVID-19 pandemic. The RGVMPO ATP was available for review by the BPAC and RGVMPO staff during two comment periods: October 5th- 9th and October 19th – 23rd . Chapters 3, 4 and Appendix A Design Guidelines were made available during the first review period. The second review period included Chapters 1 and 2 along with the Plan Review and Existing Conditions and Needs Assessment Appendices. Comments made by both RGVMPO staff and BPAC members helped prepare and refine the plan for the 30-day public comment period.

Virtual Open House

A virtual open house was held on November 4, 2020 to December 4, 2020 with the purpose of presenting the analysis work completed in the development of the plan as well as the 30-day public comment period for the RGVMPO ATP along with the 2045 MTP document, in accordance with federal public participation guidelines.

Similar to the visioning process, all open house activities were conducted virtually due to COVID-19 pandemic limitations. A custom-built website was created to display the open house information and solicit public feedback. The RGVMPO publicized the virtual open houses via social media posts and information on their website, ensuring the public was notified of the comment periods, and a mobile-friendly version of the open house site was available for people without access to desktop computers. The site displayed the visioning results of the ATP, as shown in **Figure 2-7.**

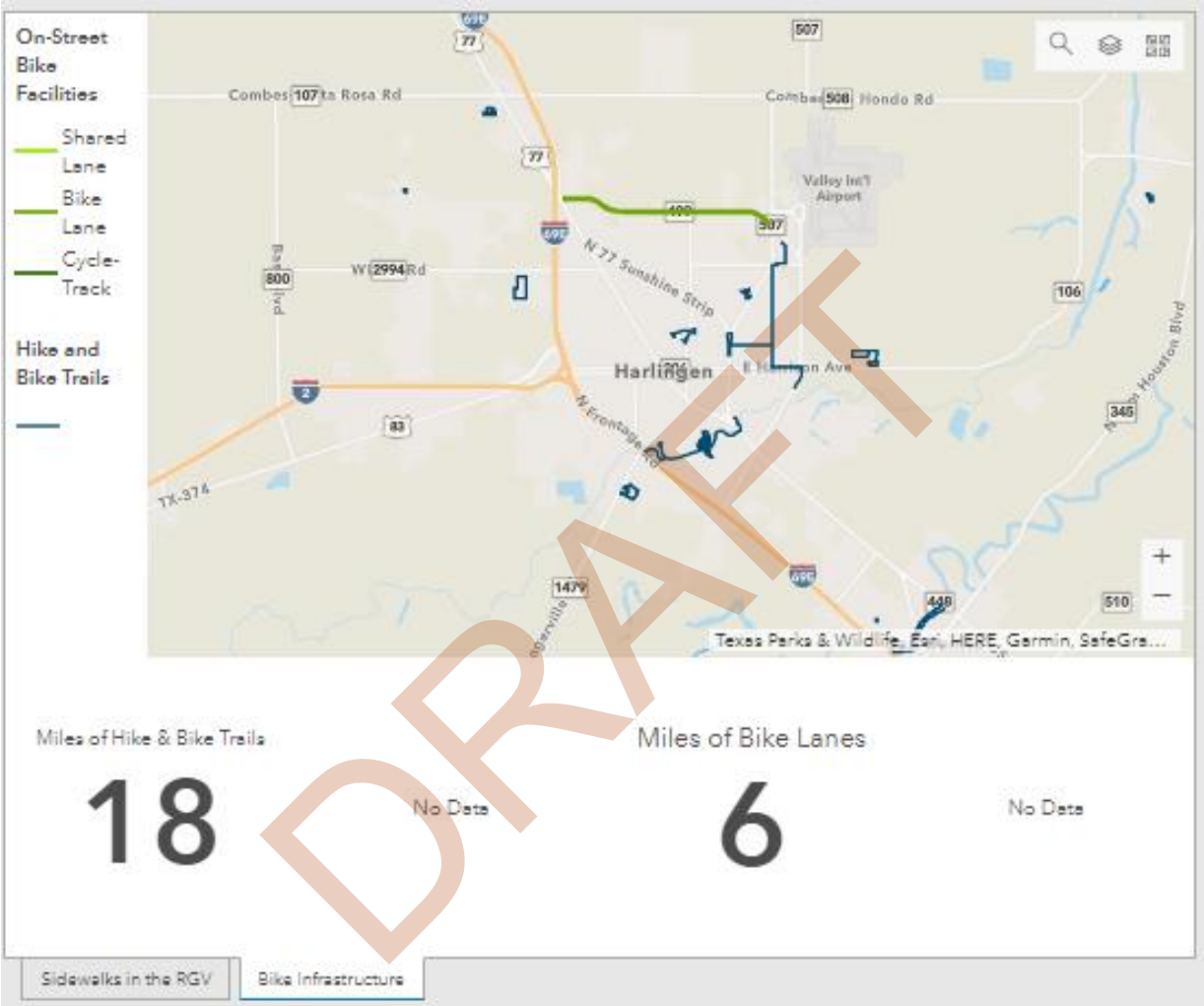
Figure 2-7: Screenshot of Infographics Displaying Active Transportation Visioning Results



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Users could also view the existing conditions analysis of the current active transportation networks in the RGVMAB. **Figure 2-8** shows the interactive map displaying bike and sidewalk infrastructure in the RGVMAB.

Figure 2-8: Existing Sidewalks and Bike Infrastructure in RGVMAB



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Public Comment

A number of comments were received during this 30-day comment period. A full summary of public comments and responses from the RGVMPO can be found in the appendix of the final RGVMPO 2045 MTP.

The RGVMPO Transportation Policy Board, having reviewed the draft RGVMPO ATP and incorporated public comments given during the comment periods, adopted the RGVMPO ATP as the ATP for the RGVMAB on December 10, 2020.



3 NETWORK DEVELOPMENT & RECOMMENDATIONS

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In This Chapter:

- Walking and Biking Action Plan
- Local Network Connections
- Regional Network Connections

WALKING AND BIKING ACTION PLAN

Policies and programs that support people who currently or desire to walk and bike throughout the Valley are critical components to building a multimodal transportation system that achieves RGVMPO goals regarding safety, economic growth, and equity. Policies and programs are critical because they indicate the prioritization of walking and biking. In a world where funding and resources are limited, strong policies and programs provide a backbone to direct limited resources towards active transportation infrastructure. While many municipalities within the RGVMAB have worked to implement such policies and programs, further opportunities and desires to improve consistency throughout the region exist. When municipalities can move forward to implement policy to support walking and biking in a cohesive manner, it will support political and public backing for walking and biking projects. Even more, a unified approach across the RGVMAB to policy and program implementation would allow communities to build relationships, share resources, coordinate on funding, and merge trainings and data.

The RGVMPO Walking and Biking Action Plan is a comprehensive approach to building a safe and accessible regional active transportation network. The plan identifies five critical success areas that contain supporting initiatives. Each initiative is categorized within an implementation range of Short-, Medium-, and Long-Term. Although implementation length varies for each initiative depending on resources of the lead entity, community support, and funding, the following are general ranges for prioritization of each initiative.

Short-Term: 1 to 2 Years

Short-Term initiatives may be prioritized in 1 to 2 years, and are either relatively straightforward to implement or must be implemented to continue supporting Medium- and Long-Term initiatives.

Medium-Term: 2 to 5 Years

Medium-Term initiatives may be successfully implemented in 2 to 5 years and will take a higher level of coordination between agencies or within the community. Some initiatives may be contingent on Short-Term initiatives.

Long-Term: 5 + Years

Long-Term initiatives take a high level of effort and coordination to achieve. With steady and continuous progress, successful implementation may be expected in 5 or more years.

The listed entity or entities are tasked with leading the initiative and coordination among agencies will be integral to the success of the respective initiatives due to the needed alignment of goals, actions, and resources. Each initiative is categorized into one of five success areas shown in **Figure 3-1** that contribute to successful implementation of this plan's key principles and goals. Measures of success are then identified to guide the RGVMPO with metrics to measure and evaluate the status and successful implementation of each initiative.

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Figure 3-1: Success Areas for Walking and Biking Action Plan



Planning & Design

Design Standards

Bicycle and pedestrian facility design standards are developed, researched, and proven recommendations that provide clear direction for choosing the most appropriate facility type, locations where the facility is best suited, and how to implement the design. Adopting these standards help build an accessible, well-connected, and safe active transportation network throughout the Rio Grande Valley. Federally recognized design standards include NACTO's *Urban Street Design Guide* and *Urban Bikeway Design Guide*. Local Design Guidelines have also been developed with this plan found in Appendix A.

Facility Inventory

Planning efforts depend upon the availability of a comprehensive inventory of bicycle and pedestrian facilities. It is recommended that municipalities and the RGVMPO work together to maintain an accurate inventory of geocoded facilities. The regional geospatial database should include at least the following attributes/features:

- **Pedestrian network facilities:** sidewalk location, sidewalk condition, width of sidewalk, spacing from curb, physical barriers present, side(s) of roadway
- **On-street bicycle network facilities:** facility location, facility type, protection element (if protected bike lane), width of facility, markings present, signage present, pavement condition
- **Off-street network facilities:** facility location, width of facility, surface material, markings present, signage present, surface condition, location of amenities (e.g. restrooms), repair stations or water fountains
- **Street crossings:** facility location, signalization, signage present, crossing distance, presence of curb extensions/refuge islands, ADA compliance, surface condition

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Bicycle and Pedestrian Counts

Reliable bicycle and pedestrian count data greatly benefit the planning process. Creating an on-going count dataset can better provide insights and data-driven support for future projects. TxDOT and the Texas Transportation Institute (TTI) have worked to develop the Texas Bicycle and Pedestrian Count Exchange (BP|CX) Program, as a central location to exchange, manage, review, and import and export count data. TxDOT also developed webinars and workshops to inform communities of the platform along with best practices of bicycle and pedestrian counting. TxDOT maintains a count equipment loan program for local agencies, that can be accessed by contacting the Bicycle and Pedestrian Program at TxDOT. The Valley Baptist Legacy Foundations (VBLF) has also awarded the Lower Rio Grande Valley Development Council (LRGVDC) funding for 18 counters to be installed throughout the region to measure the use of trails.

Regional Data Portal

A regional data portal allows municipalities to easily upload, maintain, access, and download key pedestrian and bicycle data from across the region. Such a central data resource can better support regional network connectivity by providing easy-to-access data critical for multimodal planning efforts. The portal should include geocoded data such as a regional facility inventory, bicycle and pedestrian counts, pilot project locations, bicycle-friendly destinations, and other information relevant to planning efforts. It should also include information and tracking on project phase and funding sources. The RGVMPO currently hosts the interactive U.M.A.P, which may be used as a starting point to develop additional details.

End of Trip Facilities

End of trip facilities may include secure benches, water fountains, bicycle parking, locker rooms, and bicycle maintenance stations. RGVMPO has an active bicycle friendly business initiative that recognizes business for their commitment to providing support and services to people biking. An individual's decision to walk or bike to a destination can be hindered due to the lack of supporting end of trip facilities. Similarly, the presence of such facilities can further encourage the decision to walk or bike. These facilities can be provided by local governments at public locations, or by private businesses to encourage employees to make active transportation trips.

Pilot Projects

Pilot projects help bring 2D transportation project renderings to life, garnering a real life understanding of how bike and pedestrian projects can impact the community. These demonstration projects may involve a temporary re-arrangement of the street cross-section elements through temporary markings for a set amount of time. Multiple variations of travel lanes, parking, bike routes, and sidewalks which promote multimodal transportation can be demonstrated. In addition to the physical project, on-site public participation can be concurrently incorporated. Recourses and examples for pilot projects or other "quick build" projects are common, but a few of the more widely used resources include the publication by People for Bikes titled, *Quick Builds for Better Streets: A New Project Delivery Model for U.S. Cities*, and the tool kits and recipes made available by Team Better Block at teambetterblock.com. Additionally, a strategy to support local communities with pilot or temporary facilities is the ownership of common reusable bikeway elements like protective planters or bollards and bikeway signage, by one entity. The RGVMPO may consider purchasing such materials

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that can then be loaned or rented by local planning partners. Investment in such materials could ease financial burden on municipalities and allow flexibility in the implementation process to ensure the best facilities for each street are built.

Table 3-1: Planning & Design Initiatives

Initiative	Action	Entity	Term	Measures of Success
Design Standards	Adopt Regional Design Standards for active transportation facilities.	MPO, Local	Short	• Adopted design standards are incorporated into municipal roadway design manuals or other similar documents.
Facility Inventory	Develop regional standards for a facility inventory. Develop strategy for cyclical review and updates.	MPO, Local	Short	• Complete facility Inventory. • Annual data collection and reporting effort taking place. • Established data benchmarks according to community goals.
Bicycle and Pedestrian Counts	Establish a regional bicycle, pedestrian, and trail count program. Participate in the TxDOT BP|CX at regional level.	MPO, Local	Short	• Annual count reporting. • Number of automated counters.
Regional Data Portal	Establish a regional data portal. Garner initial regional data.	MPO, State, Local	Medium	• Establishment of regional data portal. • Portal used for future plans or project development.
End of Trip Facilities	Develop end of trip facilities policy and/or programming.	Local, Transit Agencies, Local Business, Schools	Medium	• End of trip facilities installed at public locations. • Ordinances passed requiring end of trip facilities.
Pilot Projects	Obtain collection of resources and supplies for implementing pilot projects.	MPO, Local	Long	• Number of projects implemented. • Number of attendees or facility users • Public input supporting project.

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Policies & Programs

Complete Streets

The Complete Streets movement promotes the concept that roadways are for all users - pedestrians, transit users, cyclists, and vehicular drivers alike. As such, roadway design should facilitate safe and comfortable access for all users. A Complete Streets policy may take the form of ordinance revisions, new street design guidelines or manuals, and capital improvement program criteria to meet the policy goals.

Safe Routes to School

Safe Routes to School (SRTS) is a federal program created to fund and support communities in their efforts to make walking and biking to and from school safer for children. The program supports safe infrastructure development that connects schools to neighborhoods and transit, as well as non-infrastructure projects, like Bike to School Day, that promote walking and biking for community health and reduce traffic congestion. SRTS programs are implemented at both the regional and local level, often in school districts in many areas around the county, as the key tenant of this program is coordination among multiple government entities and school families.

Supportive Land Use Policy

Land use and transportation policies are closely linked and can either support or discourage using active modes of transportation. Land Use policies that specifically include bicycle and pedestrian network considerations are critical in supporting a safe and connected network. Smart Growth is an approach to urban development that supports a mix of land uses and supports walkable and bikeable communities. The Smart Growth Network published their 2006 guide *This is Smart Growth* which is based on 10 basic principles to guide urban development. Preservation of right-of-way and the provision of on-site connectivity for new development should be present in land use policies. Connectivity provisions should at a minimum address:

- Dedicated pedestrian pathways from the street to buildings and key land uses.
- Pedestrian pathways between building and uses.
- Shared use connections to trails, public uses, adjacent properties, etc.

Advisory Committees

A regional bicycle and pedestrian advisory committee can help to ensure the planning process and implementation of plans meet the needs of the community, such as the current RGVMPO Bicycle and Pedestrian Advisory Committee (BPAC). Members of the committee are ideally active transportation champions who are committed to making their community friendly for biking and walking and ideally represent the demographic makeup of the region. Another prominent regional committee is the Caracara Trails Advisory Committee (CTAC) who oversee the implementation of the proposed routes produced by the Active Plan. Municipalities can also have their own BPAC committees who drive policy and implementation to support walking and biking in their communities. Coordination and communication between local and regional communities is key for success of the regional trails system.

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Table 3-2: Policy and Program Initiatives

Initiative	Action	Entity	Term	Measures of Success
Complete Streets Policies	Adopt Complete Streets policies. Incorporation of Complete Streets policies into local planning documents. Implementation of Complete Streets policies.	Local, MPO, State	Medium	• Complete Streets Policy adopted. • All modes accommodated with safe facilities during resurfacing or expansion projects.
Safe Routes to School	Develop regional Safe Routes to School program.	MPO, State, School Districts	Long	• Measured increase in biking and walking activity in school children. • Number of lane miles of added all ages and abilities facilities within ¼ mile of schools.
Supportive Land Use Policy	Review land use policies and amend where needed. Incorporation of bicycle and pedestrian connectivity needs in future policy.	Local, State	Long	• Updates to land use policy that support mixed use development along regional trails. • Connectivity requirements implemented in land use policy.
Advisory Committees	Continued support of the RGVMPO Bicycle and Pedestrian Advisory Committee, and collaboration with the CTAT. Create municipal advisory committees.	Local, MPO	Short	• Number of municipal committees created.

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Education & Encouragement

Bike Share

Bike share programs allow users to rent bicycles for short-term or monthly use from a network of closely spaced stations. Successful bike share programs exist in densely populated areas, near trail networks, tourist destinations, and major institutions. The program's success should be measured by equitable pricing structures and station locations, along with number of annual trips and memberships. Successful bike share programs may be an important tool to support the key principles of this plan in accessibility and community health. The City of McAllen has been operating a BCycle program since 2015. Plans to move the bike share system to a regional level are still in action through the LRGDV and its funding partners.

Open Streets

Open Street initiatives are temporary closures of public streets to motor vehicle traffic and designed in coordination with the municipality to provide the public access to streets for walking, biking, and recreation. These initiatives may include street festival activities as well as activities to promote walking and biking, and to teach attendees about the economic, health, and social benefits of active transportation. Open Streets began in Colombia as an inexpensive way to promote health using public space. Known as Ciclovias in South America, the events spread across North America where they are known as Open Streets events. Resources for starting Open Streets events are plentiful, with two primary examples being the NACTO *Open Streets Guide,* and the *Open Streets Toolkit* found at opentstreetsproject.org. Brownsville and Harlingen have both initiative successful Open streets events called "CycloBia" and "Viva Streets" respectively. Both communities may be local points of contact for information or advice for other communities looking to initiate an Open Streets event.

Walk & Bike Month

National Bike Month in the month of May, as designated by a leading bicycle advocacy group in the United States, the League of American Bicyclists, provides a fun and encouraging platform for communities and local businesses to support residents and employees to commute via bicycle during Bike to Work Month, and even during specific Bike to Work Week, or Day events. Bike to Work Month has evolved to include and encourage commuting by foot and/or by public transit. Bike, bus, and walk to work challenges encourage residents to take part in active transportation through fun events and challenges, and often include incentives for top contestants.

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Media Awareness Campaigns

Media awareness campaigns present an opportunity to further reach the community through online, print, radio, and television materials. The campaigns can bring more driver awareness to safe driving behaviors when sharing the roadway as well as reminding bicyclists and pedestrians their rights and responsibilities as they travel. In addition, media campaigns can also celebrate the opening or groundbreaking of new facilities, and usher them into the community.

Figure 3-2: Helpful Signage



LCI Instructor Training & Skills Programs

League Certified Instructor (LCI) training is for individuals interested in teaching people how to bike safely and confidently. After successfully completing their instructor training, LCIs can lead programs for both adults and children. These programs are a great way to educate the public about bicycle skills, safety, and use of bicycles for transportation, as are the similar Bike Rodeos that occur in McAllen and other areas throughout the region. LCIs can partner with local school districts, employers, or government agencies to offer reoccurring trainings.

Employer Incentive Programs

The location where individuals are employed often directly impacts their travel behavior. Employer incentive programs are a tool for public and private employers interested in encouraging their employees to walk or bike to work. Incentives can be physical (e.g., loaner day trip bikes, end of trip facilities) and/or monetary (e.g., transit vouchers, monthly stipend, waived parking fee). End of trip facilities may include, but are not limited to showers, changing rooms, or secure bike parking. Developing strong relationships with Economic Development Councils or Chambers of Commerce is a strong first step to prolonged success working with employers to incentivize active modes.

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Table 3-3: Education & Encouragement Initiatives

Initiative	Action	Entity	Term	Measures of Success
Bike Share	Develop regional bike share plan. Continued financial and political support of local BCycle program.	MPO, Local	Short	• Number of bike share programs established. • Number of annual trips.
Open Streets Events	Coordinate and implement a series of Open Streets Events.	Local, Advocacy Orgs	Medium	• Event attendance. • Number of communities hosting events. • Number of events annually.
Walk & Bike Month	Promote the official Bike/Bus/Walk to Work Day/Week/Month.	MPO, Local, Advocacy Orgs	Short	• Number of events. • Participating entities and individuals. • Cumulative miles ridden/walked.
Media Awareness Campaigns	Develop and implement a regional and/or local bicycle and pedestrian safety education and encouragement campaign strategy.	MPO, Local, Law enforcement, Non-profits, Advocacy Orgs	Medium	• Distribution of print materials. • Public service announcements.
LCI Instructor Training & Skills Programs	Organize annual LCI training program. Organize Smart Cycle classes led by LCIs for children and adults.	MPO, Local	Long	• LCIs completed training. LCI-led classes. • Number of attendees.
Employer Incentive Programs	Develop network of employer incentive programs. Develop relationship with Economic Development Councils or Chambers of Commerce.	MPO, Local	Medium	• Number of incentive programs. • Rates of participation • Number of reduced VMT.

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Safety

Law Enforcement Trainings

Law enforcement officers can be champions of cycling and pedestrian safety when equipped with the appropriate training. Law enforcement training should include knowledge of bicycle and pedestrian facilities in their jurisdiction, current bicycle and pedestrian laws at the local and state levels, common collision types and locations, and community education program opportunities, like the LCI programs mentioned above. In addition, officers should review and understand protocols for properly completing collision forms when pedestrians and bicyclists are involved. Such protocols ensure the necessary details of the crash are properly recorded for later crash analyses.

Ordinance Enforcement

Community ordinances requiring safe motor vehicle passing and operation around bicyclists, transit vehicles, pedestrians, and subsequent enforcement of such ordinances are critical to supporting a safe transportation network. Laws, enforcement procedures, and penalties should be stringent enough to influence motorist behavior. Key ordinances and citation structures that should be evaluated include safe passage ordinances, crosswalk encroachments, and right-of-way violations to ensure shoulders remain safe for people cycling.

Vision Zero

Vision Zero is a holistic strategy to end all traffic-related fatalities and serious injuries while increasing mobility for all. Instead of accepting traffic-related fatalities as the result of unavoidable accidents, Vision Zero holds that such fatalities are preventable with key strategies. It also recognizes and accommodates human error in the design of transportation facilities. These strategies include but are not limited to establishing a Vision Zero action plan, safer street design, targeted law enforcement, evidence-based public policy, and thoughtful public engagement.

Table 3-4: Safety Initiatives

Initiative	Action	Entity	Term	Measures of Success
Law Enforcement Trainings	Work with local law enforcement to schedule reoccurring trainings.	Local, MPO	Short	• More accurate and informative citations.
Ordinance Enforcement	Work with local law enforcement to schedule reoccurring trainings.	Local	Medium	• Reduction in crashes involving people walking or biking.
Vision Zero	Pass Vision Zero Policy at the regional and municipal level. Develop and Implement a regional Vision Zero Action Plan.	MPO, Local, Law enforcement, Non-profits, Advocacy Orgs	Medium	• Vision Zero Policy adopted. • Distribution of print materials. • Public service announcements.

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Active Tourism

Figure 3-3: Lower Rio Grande Valley 2016 Active Plan Proposed Routes



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The Rio Grande Valley landscape is abundant with historic sites, natural areas, and wildlife refuges that create visitor demand. This tourism, known as Active Tourism, is an economic asset to the region that not only supports small businesses through direct revenue from visitor spending but also elevates the region's brand with a positive image that attracts permanent residents and businesses.

Active Tourism can be viewed as visitors looking for an opportunity for a closeup and personal interaction with the historical and natural attractions by walking, bicycling, or paddling to and through these destinations. To ensure that visitors experience the region in a positive way, visitors need support in the form of pedestrian and bicycle facilities in tourist areas. In 2016, the University of Texas School of Public Health and the Valley Baptist Legacy Foundation supported the development of the Lower Rio Grande Valley Active Transportation and Tourism Plan (Active Plan) to establish a regional Hike and Bike network, paddling trail network, U.S. bicycle route, and to integrate these networks into local and regional transportation and economic policy. This active transportation plan acknowledges and expands on the work done in the Active Plan to ensure there are supportive policies and programs in place throughout the RGVMAB.

Active Tourism programs, policies, and initiatives help ensure that visitors who choose to experience the wonders of the Rio Grande Valley have the kind of enjoyable visit that helps grow the tourism industry and enhance the brand of the Rio Grande Valley as a premier visitor destination.

Active Tourism

Walking & Biking Maps

Printed and interactive online maps that detail regional walking and biking routes and a component of an active tourist's experience. Maps can also be online or within mobile apps, such as the Go Explore RGV app used in the Rio Grande Valley. High quality maps contain information such as location of Bicycle Friendly Businesses, facilities categorized and labeled by comfort, and location of shelters, restrooms, and water access.

Wayfinding

Regional and local wayfinding directed for pedestrians and bicyclists gives areas a sense of place while also providing helpful travel information. Wayfinding signs are well-suited to point out the direction of local destinations like bike share stations and connections to other trails, and how far away they are located.

Figure 3-4: Active Tourism in the Rio Grande Valley



Bicycle Friendly Designations

The League of American Bicyclists' Bicycle Friendly America (BFA) program establishes a series of criteria for local governments, businesses, and universities to establish themselves as places supporting bicycle transportation. Through efforts to achieve the BFA designation, participating entities commit to implementing infrastructure, policies, and programs that create a bicycle friendly environment. Becoming a member of the BFA program cements an organization's commitment to making walking and biking a priority in their community, and presents them with a path for continues improvement based on the BFA program.

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Table 3-5: Active Tourism Initiatives

Initiative	Action	Entity	Term	Measures of Success
Walking & Biking Maps	Design, print, and distribute regional walking and biking maps.	MPO	Short	• Maps printed or published online or on app. • Number of locations maps are distributed.
Wayfinding	Establish regional trail wayfinding program.	Local, MPO	Medium	• Number of signs placed.
Bicycle Friendly Designation	Develop network of bicycle friendly designated cities, public institutions, and local businesses.	MPO, Local, Local businesses, Local institutions	Medium	• Local government & businesses achieving BFA designation. • Number of designated businesses

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LOCAL NETWORK CONNECTIONS

Regional connectivity begins with small-scale, concentrated efforts to connect residents with existing facilities. This section describes the preliminary recommendations for advancement of the active transportation network based upon the current and proposed bicycle and pedestrian facilities in the RGVMAB. The bike and pedestrian facility recommendations include 30 segments spanning more than 36 miles. This is not a comprehensive list of recommendations to statisfy all connectivity needs but rather areas of improvement highlighted by community input and demand. These proposed routes are intended to provide the RGVMPO and local municipalites a corridor that provides key connectivity to key destiantions and to exisiting walking and biking infrastructue. The RGVMPO or local agencies can use their local knowledge and the recources provided in **Chapter 4** and **Appendix A** to determine the most appropriate faciltiy for each segment.

Key destinations are basic services or highly frequented establishments. This includes:

- Schools
- Grocery Stores
- Social Services
- Medical Centers
- Religious Establishments

Specifically, these recommendations were made based on needs discovered from a needs assessment completed in **Appendix C** based on seven criteria for assessing supply and demand of active transportation facilities. **Figure 3-5** shows the criteria, population and employment, disability status, access to a vehicle, poverty, number of crashes, key desinations, and the number of intersections used to determine where the greatest need is for additional active transportation infrastructure. Combined with comments from the public and proximity to key destinations, this effort is able to identify a preliminary list of connections that will improve safety and connectivity to key destinations for active transportation users in the RGVMAB.

Figure 3-5: Factors Included in Needs Analysis

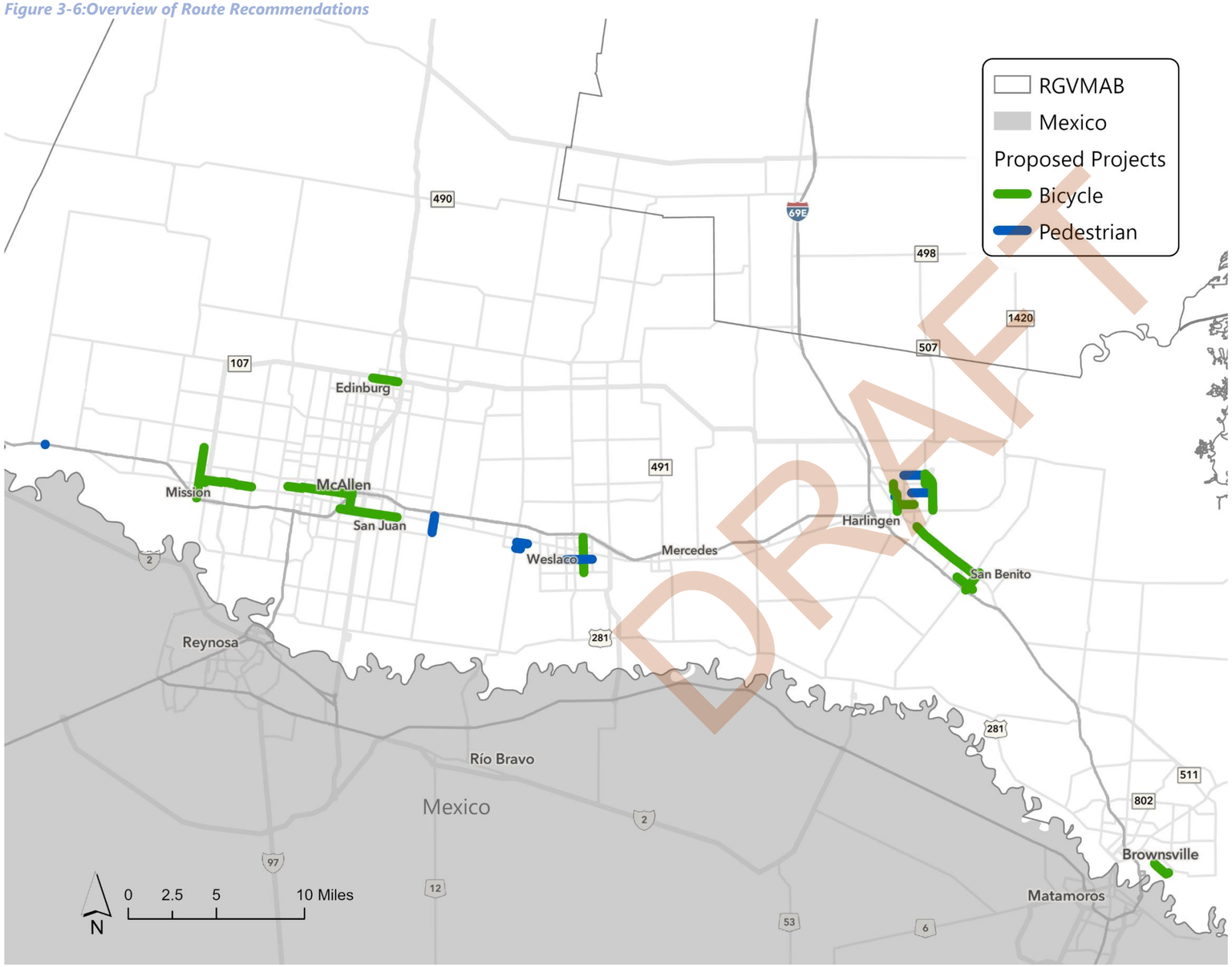


Each proposed route shown in **Figure 3-6** has been categorized as either pedestrian and bicycle recommendations. This section will be followed by an in-depth route profile highlighting the reasons that each recommendation was selected and the current street configuration.

Table 3-6 displays a list of each project segement identified by the project ID number, along with length, street name, and beginning and end of segement.

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Figure 3-6:Overview of Route Recommendations



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Table 3-6: Local Route Recommendations

Facility Type	Street Name	Begin	End	Length in Miles	Context	City	Project _ ID
Ped	Palm Shores	(North) Palm Shores	(South) Palm Shores	0.0	Highway crossing for communities to access schools and businesses.	La Joya	1
Bike	Elm Dr, School Ln	(West) Elm Dr	(East) School Ln	1.8	Creating a bike lane in a high demand area near a school.	Mission/Sharyland	2
Bike	N Holland Ave	(North) N Holland Ave	(South) N Holland Ave	2.9	Creating a bike land in a high demand area and connecting multiple schools.	Mission	3
Bike	W Business 83, W 10th St	(West) W Business 83	(East) W 10th St	0.4	Connection two parallel ATP projects (N Holland Ave and N Perkins)	Mission	4
Bike	W Kelly Ave, E Kelly Ave, W 7th St	(West) W Kelly Ave	(East) W 7th St	3.3	Providing a connection from the northwest region of a high demand area to the southeast region.	Pharr	5
Bike	N Sugar Rd, S Sugar Rd	(North) N Sugar Rd	(South) S Sugar Road	1.5	Providing a north-south corridor of a large high demand area, providing a highway crossing, and connecting two cities (San Juan and Lopezville)	Lopezville/San Juan	6
Bike	W Hackberry Ave, E Hackberry Ave, W Polk Ave	(West) Hackberry Ave	(East) W Polk Ave	2.8	A West-East bike route that connects high demand areas in two cities (McAllen and Pharr).	McAllen	7
Bike	Gumwood Ave	(West) Gumwood Ave	(East) Gumwood Ave	0.9	A West-East bike route leading to the connection of an off-street bike facility on N Bicentennial Blvd	McAllen	8
Bike	N Bridge Ave, S Bridge Ave	(North) N Bridge Ave	(South) S Bridge Ave	2.0	Connecting high and low demand areas across Westlaco.	Westlaco	9
Ped	W 8th St, E 8th St	(West) W 8th St	(East) E 8th St	1.5	Connecting West Weslaco to key medical destinations on the east part of town and crosses a high demand area	Westlaco	10
Ped	Fordvce St	(West) Fordvce St	(East) Fordvce St	0.6	Connecting two high demand area and a grocery store	Donna	11
Ped	W Austin Ave	(West) W Austin Ave	(East) W Austin Ave	0.1	Providing a connection from a school to a major corridor	Harlingen	12
Ped	E Austin Ave	(West) E Austin	(East) E Austin	0.0	Provides a safe crossing to a sidewalk for a major arterial (N 1st St) near a school	Harlingen	13
Ped	E Vinson Ave	(West) E Vinson Ave	(East) E Vinson Ave	1.0	Providing a sidewalk for safe passage to a school	Harlingen	14
Ped	E Vinson Ave	(West) E Vinson Ave	(East) E Vinson Ave	0.0	Provides a safe crossing to reach a school on the same street	Harlingen	15
Bike	N Dick Dowling St, S Dick Dowling St	(North) N Dick Dowling St	(South) S Dick Dowling St	1.3	Connecting high demand areas with two schools and two grocery stores along the corridor	San Benito	16
Bike	Zaragosa St, W Landrum St, E Landrum St	(West) Zaragosta St	(East) E Landrum St	1.1	Connecting two high demand areas, four schools and two grocery stores	San Benito	17
Bike	W Business 77, E Business 77	(West) W Business 77	(East) E Business 77	4.4	Connecting two cities and their key destinations and high demand areas	Harlingen/San Benito	18
Bike	New Combes Hwy, N 1st St, S 1st St	(North) New Combes Hwy	(South) S 1st St	1.6	Connecting multiple government facilities, a school, and a grocery store across a high demand area along a common major corridor	Harlingen	19
Bike	E Jefferson Ave	(West) E Jefferson Ave	(East) E Jefferson Ave	1.0	Part of a larger route connecting a library in a high demand area to a school	Harlingen	20
Ped	Lissner Ave	(West) Lissner Ave	(East) Lissner Ave	0.3	Providing a pedestrian route to a local grocery store in a high demand area	Donna	21
Bike	W Cano St, E Cano St	(West) W Cano St	(East) E Cano St	1.4	Connecting a high demand area to an off street bike route and a school	Edinburg	22
Ped	N 9th St, S 9th St	(North) N 9th St	(South) S 9th St	0.7	Filling gaps in the sidewalk network across a high demand area	Alamo	23

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Bike	E 30th St, Calle Milpa Verde	(North) E 30th St	(South) Calle Milpa Verde	0.9	Connecting a high demand area to a grocery store	Brownsville	24
Bike	Esperanza Rd	(West) Esperanza Rd	(East) Esperanza Rd	0.2	Connecting a high demand area to a school	Brownsville	25
Bike	N Perkins Ave	(North) N Perkins Ave	(South) N Perkins Ave	0.1	Connecting two parallel bike routes in a high demand area	Mission	26
Bike	W 12th St, E 12th St	(West) W 12th St	(East) E 12th St	1.1	Connecting multiple routes in a high demand area	Mission	27
Ped	E Grimes St	(West) N 13th St	(East) N Loop 499	1.2	Provides sidewalks to access community center and Harlingen High School	Harlingen	28
Bike	N 25th St	(North) N Loop 499	(South) Rio Hondo Rd	0.6	Connection from N Loop 499 to Hike/Bike Path at Rio Hondo Rd	Harlingen	29
Bike	N Ed Carey Dr	(North) N 25th St	(South) E Harrison Ave	2.2	Connecting Hike/Bike path at E Harrison and extended designated bike lane to connect to existing N Loop 499 section	Harlingen	30

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Route 1: La Joya Pedestrian Crossing

The analysis of the existing pedestrian network suggests that a pedestrian crossing at the intersection of Business 83 and Palm Shores in the City of La Joya would increase the safety for pedestrians crossing the major highway, as well as added connectivity to key destinations in the area, shown in **Figure 3-8.** Much of the area south of Business 83 is residential, whereas the northern area includes multiple schools, La Joya Municipal Park, and several restaurants and businesses. The added crossing would allow residents on the south side of the highway to walk to the surrounding businesses and schools more easily. The intersection is owned by TxDOT. Specific recommendations regarding crossing characteristics would need to be approved by the agency. While cross walks and signage are considered the most cost-effective addition to the intersection, Highway 83 is a high traffic road and may require additional facilities such as a refugee island or a signalized crossing to ensure safety of pedestrians.

Figure 3-7: Route 1 (Pedestrian Crossing @ Business 83)

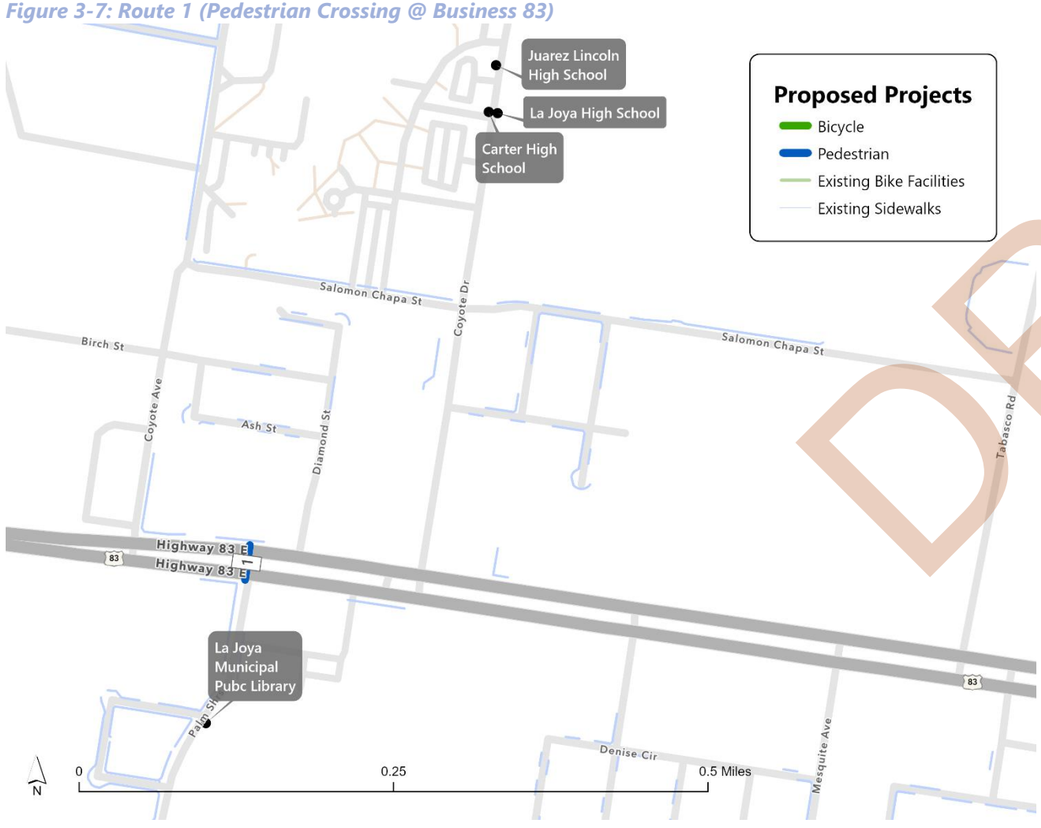


Figure 3-8: Birdseye View of Business 83 Intersection



Figure 3-9: Palm Shores & Business 83



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Route 2: Weslaco Bike and Pedestrian Routes

Both bicycle and pedestrian network improvements are recommended in the City of Weslaco. The proposed project should consider two segments, as shown in **Figure 3-10**. This project is 3.5 miles and has identified the need to include a 2-mile bike route along N Bridge Avenue as shown in **Figure 3-11** and 1.5 miles of a pedestrian route to W 8th Street as shown in **Figure 3-12** and **Figure 3-13.** These additions to the network will improve connections to Knapp Medical Center, several schools, H-E-B, and a local Wal-Mart along the route. The demand for active transportation infrastructure in Weslaco is high and the additional bike networks on S Bridge Avenue will provide connections between two of the highest demand areas in the area. Similarly, the route on W 8th Street also crosses through high-demand areas. The goal to have an integrated active transportation network is demonstrated by the overlapping of the two different types of infrastructure recommendations. The W 8th Street additions will provide safer spaces for pedestrian activity and connect West Weslaco to key medical centers on the east side of town.

Figure 3-10: Route 2 (Bridge Ave and 8th St)

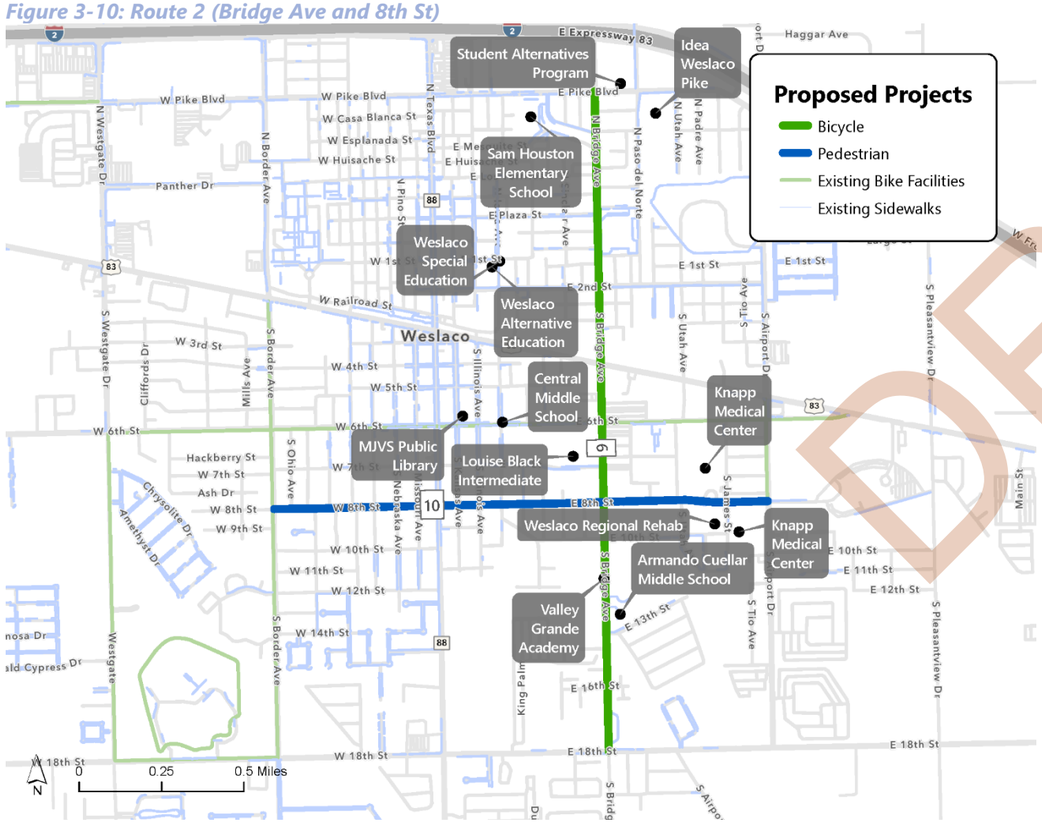


Figure 3-11: N Bridge Ave.



Figure 3-12: E 8th St.



Figure 3-13: W 8th St.



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Route 3: Harlingen Bike and Pedestrian Routes

Several needs were identified for residents who walk and bike in the City of Harlingen as shown in **Figure 3-14.** It is recommended that three segments that span over 2.4 miles be considered. These improvements would include the addition of bike routes on E Jefferson Avenue (1 mi) and N 1st Street (1.4 mi) referenced in **Figure 3-16** and **Figure 3-17,** while the need for sidewalk improvements have been noted along W Austin Street (0.12 mi) shown in **Figure 3-15**. The additions to the network will improve connections to several key destinations along the route. The sidewalk on W Austin Street will provide a needed connection from a Zavala Elementary School to a major corridor, New Combes Highway. The bike route along New Combes Highway – which turns into N 1st Street – provides alternative modes of transportation to those looking to access basic services such as the US Postal Office, the Salvation Army, and Harlingen Market. Lastly, the bike route on E Jefferson Avenue serves as part of a larger route, connecting a Harlingen Public Library in a high demand area to a Zavala Elementary and continues along E Jefferson to N 25th Street.

Figure 3-14: Route 3 (New Combes Hwy, E Austin Ave, and E Jefferson Ave)

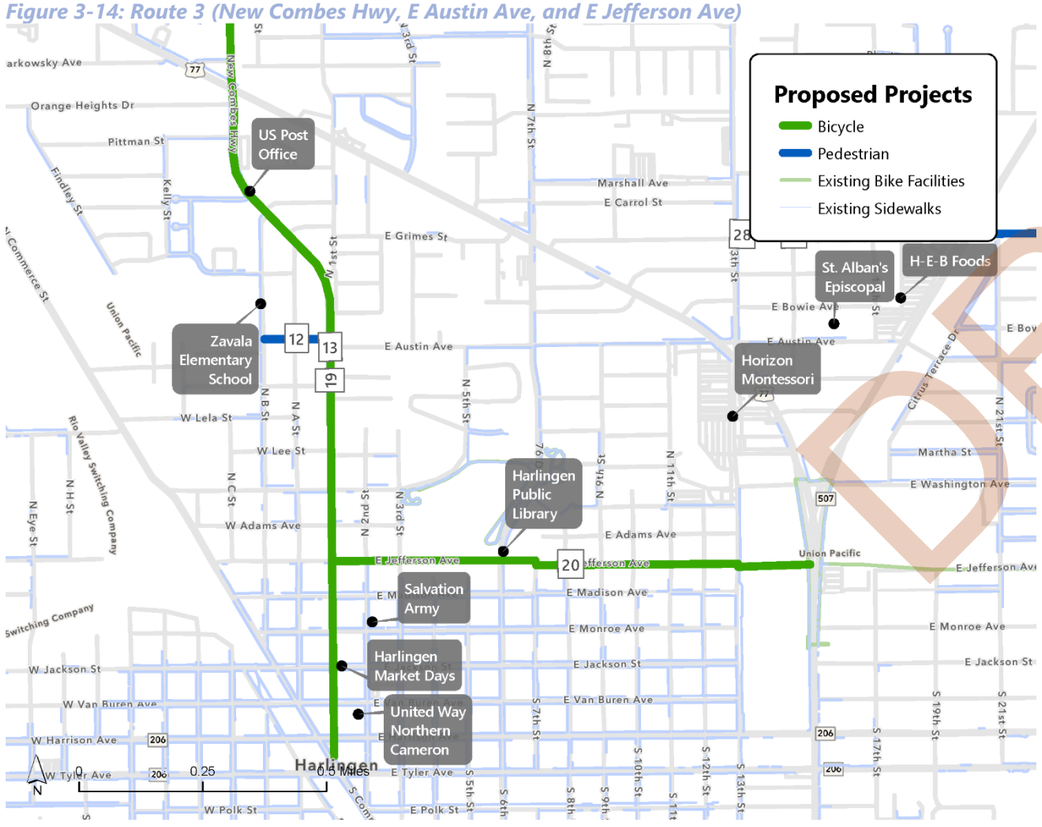


Figure 3-15: W Austin Ave.



Figure 3-16: S 1st St

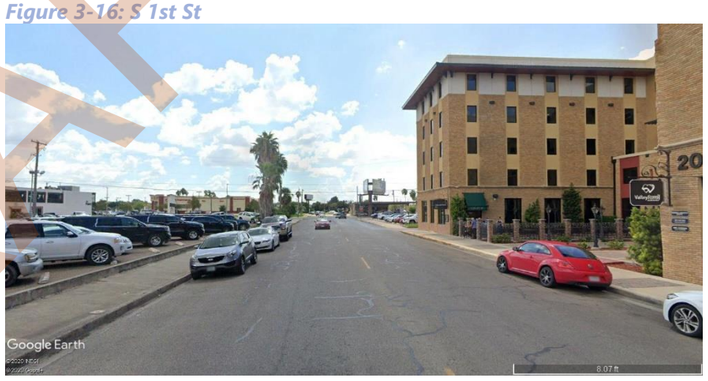


Figure 3-17: E Jefferson Ave



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Route 4: McAllen to San Juan Bike Network

Bike network improvements recommended in the City of McAllen include three segments, spanning 8.1 miles, as shown in **Figure 3-18**. The east-west additions will connect high-demand areas in McAllen and Pharr, primarily running through residential and bike-friendly routes. A majority of the improvements are focused on Hackberry Avenue (3.6 mi) and W Kelly Avenue (3.2 mi), while N Sugar Road (1.3 mi) serves as a critical north-south connection and highway crossing connecting the cities of San Juan, McAllen, Pharr and Lopezville (**Figure 3-19 -** Error! Reference source not found.). Existing bike facilities north of the proposed addition on N Sugar Road leads to Lopezville, while W Kelly Avenue passes through the City of Pharr and connects to San Juan. Key destinations along this route include numerous elementary schools, McAllen Memorial High School, and Ruben's Grocery. Due to the residential nature of both Hackberry Avenue and W Kelly Avenue, a bike lane may be appropriate depending on the level of traffic. However, a protected bike lane should be considered along N Sugar Road to ensure user safety and confidence.

Figure 3-18: Route 4 (McAllen to San Juan Bike Route)

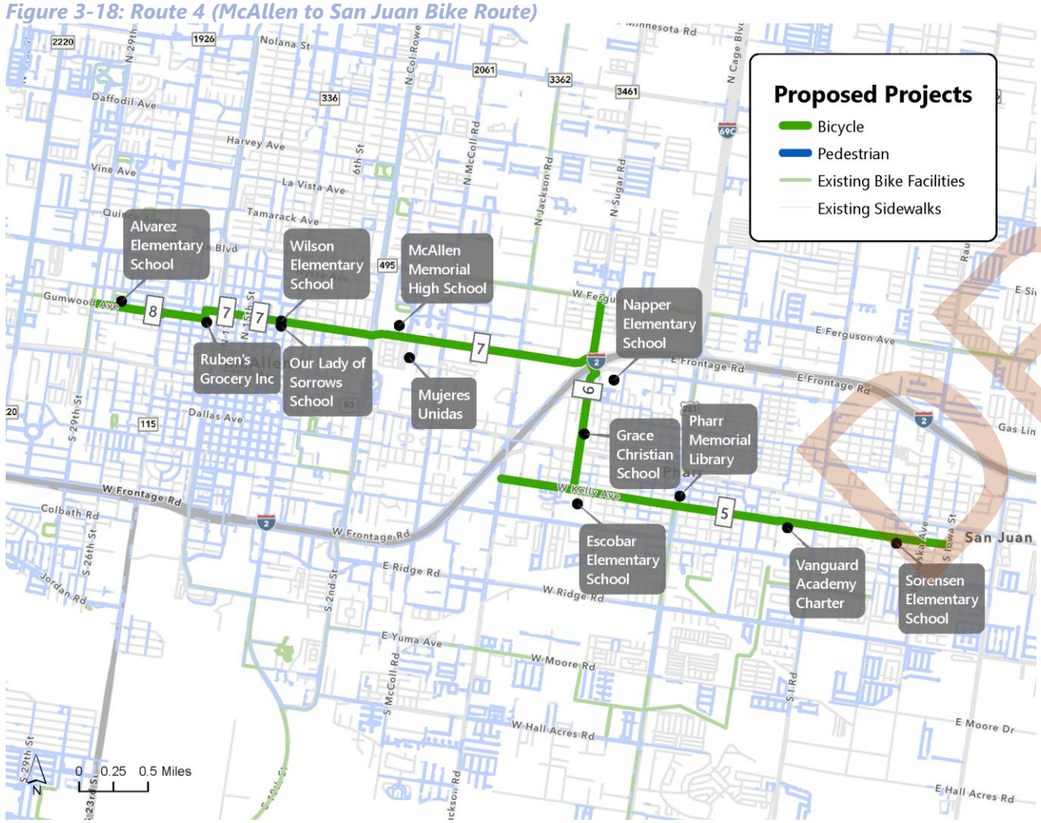


Figure 3-19: West 7th Street

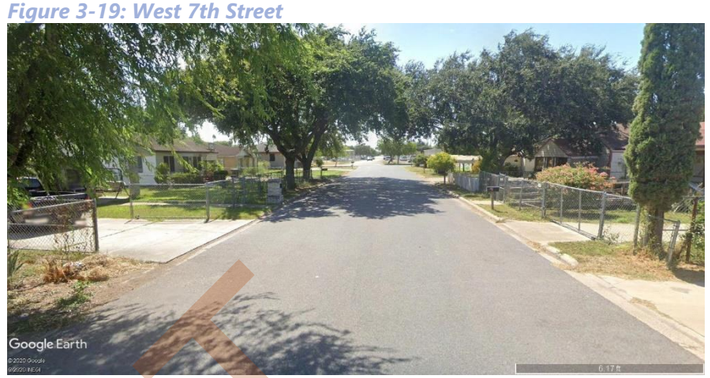


Figure 3-20: N Sugar Rd



Figure 3-21: W Hackberry Ave



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Route 5: Alamo Pedestrian Route

Pedestrian network improvements recommended in the City of Alamo include three segments, as shown in **Figure 3-22.** This project will span 0.68 miles, focusing on 9th Street between Duranta and Citrus Avenue (0.06 mi), Birch Avenue and Business 83 (0.14 mi), and W Austin Avenue and PSJA Memorial High School (0.48 mi) as shown in **Figure 3-23** and **Figure 3-24**. These additions to the network will fill in gaps in the sidewalk network throughout a high-demand area and improve connections to the PSJA Special Education, Bowie Elementary, and Rio Home Care LLC. The proposed project is a key example on how this effort intends to build on existing conditions to provide safe routes for residents. Note that the sidewalk network is sparse in this part of Alamo, creating pedestrian corridors is integral to expanding connectivity in this area.

Figure 3-22: Route 23 (Alamo Pedestrian Route)

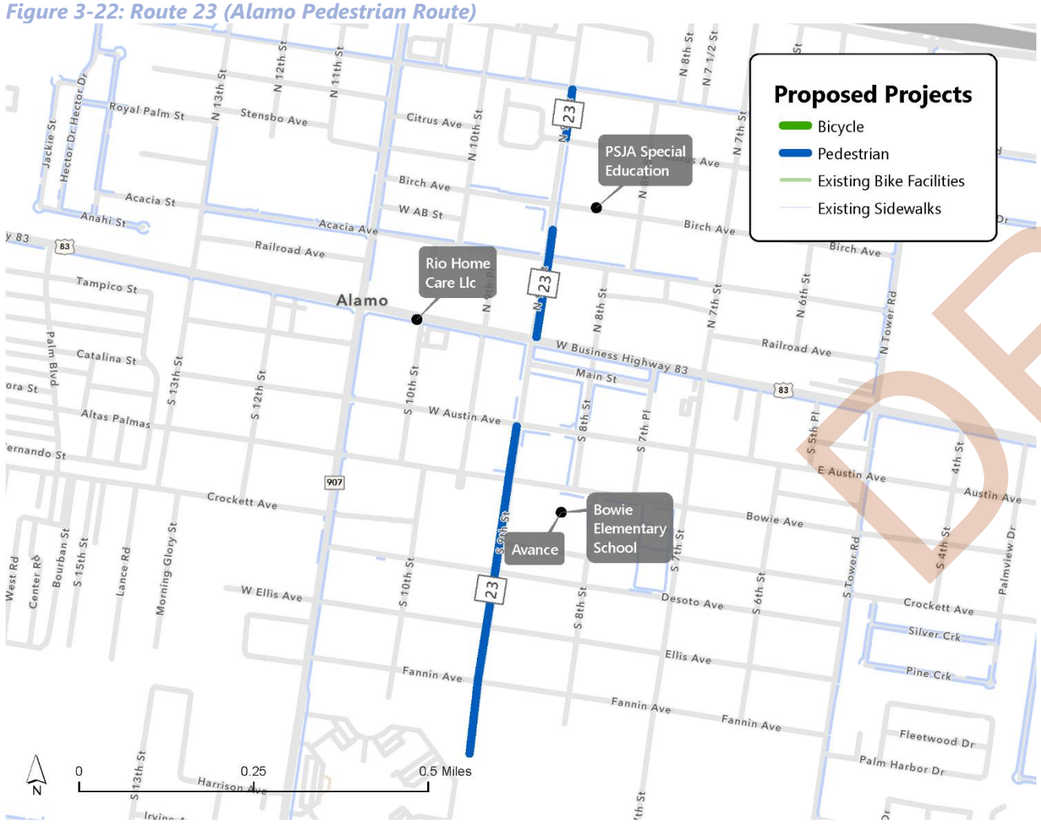


Figure 3-23: N 9th St



Figure 3-24: S 9th St



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Route 6: Donna Pedestrian Route

Pedestrian improvements reccommended in the City of Donna include two segments, as shown in **Figure 3-25**. This project will span 0.89 miles, focusing on Fordyce St (0.62 mi) and Lissner Ave (0.27 mi) as shown in **Figure 3-26** and **Figure 3-27,** to improve connections to local elementary schools and grocery stores along the route. Fordyce Street intersects multiple high-demand areas and provides pedestrian connections to Guzman Elementary School, Stainke Elementary School, and Lighthouse Seafood Market in the vicinity. Similarly, Lissner Avenue provides the community a direct pedestrian connection to Sol Food Market. Here we see how the gap analysis and communtiy input can help us identifify missing connections to basic services.

Figure 3-25: Route 6 (Donna Pedestrian Route)

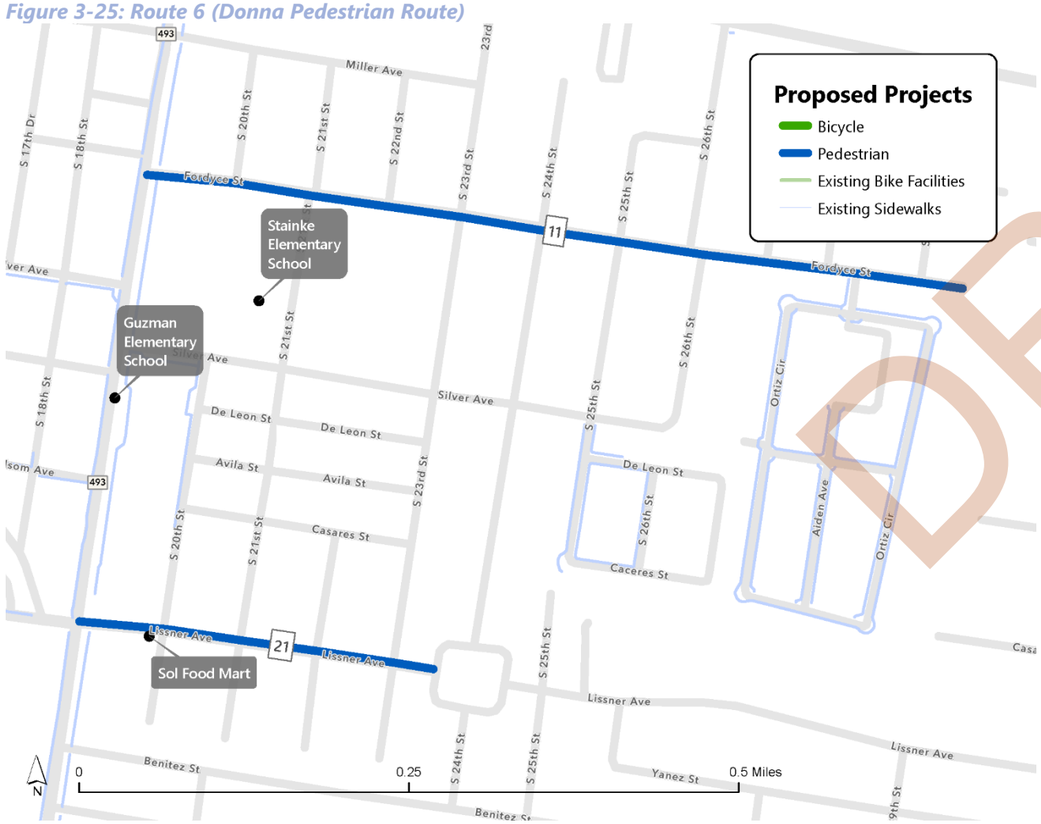
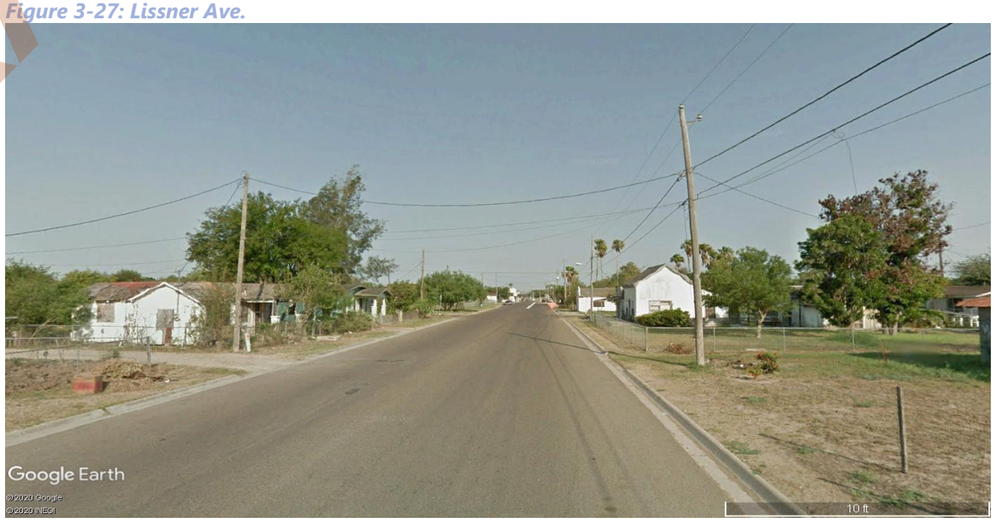


Figure 3-26: Fordyce St.



Figure 3-27: Lissner Ave.



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Route 7: North Harlingen Pedestrian Route

One pedestrian improvement is recommended in the City of Harlingen, as shown in **Figure 3-14.** This project will span 0.96 miles, focusing entirely on East Vinson Avenue to improve the pedestrian network and develop safe crossings to Keys Academy along the route. The location in (**Figure 3-28-Figure 3-30**), specifically the intersection of N 7th Street and E Vinson Ave, was highlighted as an opportunity to provide a safe crossing to allow children to access Keys Academy from the residential area to the east. This project has the potential to expand even further to connect residents to other destinations such as Jane W. Long Elementary School, Harlingen School of Health Professions, Early College High School, and existing active transportation facilities along Loop 499 and N 29th Street.

Figure 3-#: Route 14 (E Vinson Avenue Pedestrian Route)

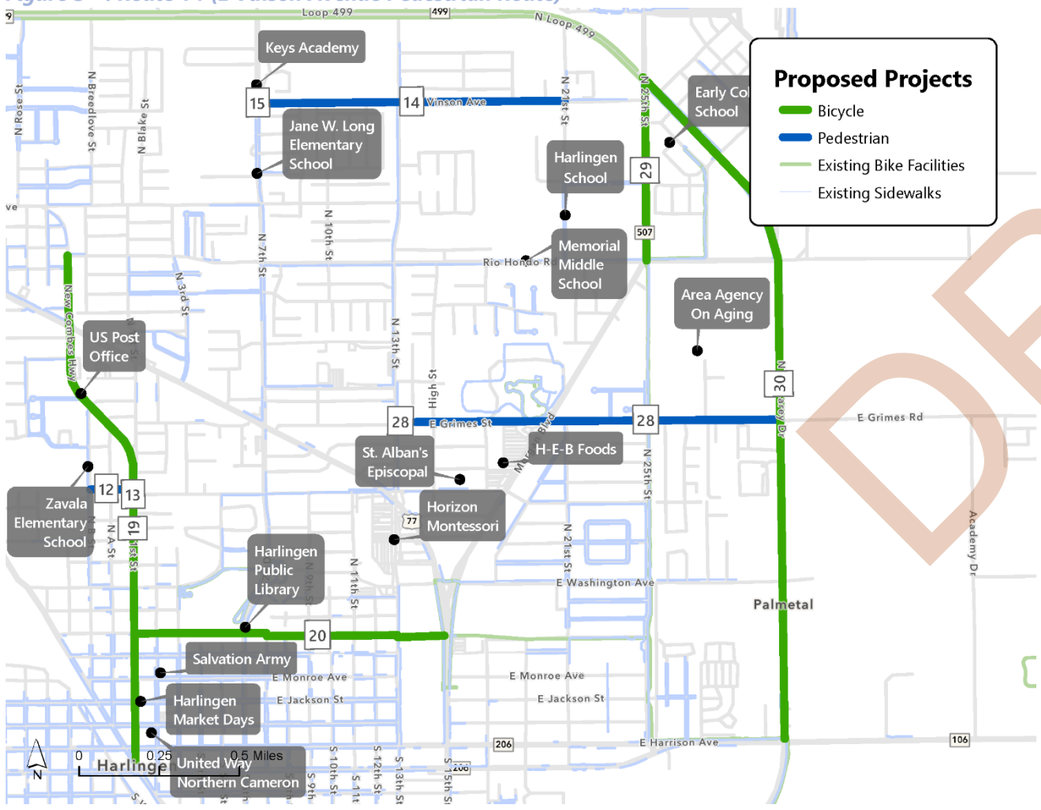


Figure 3-28: N 7th St and E Vinson Ave



Figure 3-29: N 7th St and E Vinson Ave



Figure 3-30: E Vinson Ave



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Route 8: San Benito Bike Network

Bike improvements recommended in the City of San Benito include three segments, as shown **Figure 3-25.** This project will span 6.80 miles, focusing on Dick Dowling St (1.26 mi), Landrum St (1.13 mi), and Business 77 (4.41 mi) (**Figure 3-31 - Figure 3-33**) to improve connections to grocery stores, local schools, and government services along the route. This project provides a key connection from San Benito to Harlingen along Business 77. San Benito and Harlingen both contain high-demand areas. Connecting these two areas provides lower density communities in these two cites an alternative mode of transportation. Specifically, this segment intersects with Dick Dowling Street, to connect high-demand areas in northern San Benito to areas south of the city. Similarly, Landrum Street provides an east-west connection across the city, while maximizing intersections with key destinations, such as H-E-B Foods, Rosie's Grocery Store, and two elementary schools.

Figure 1 24: Route 8 (San Benito Bike Routes)

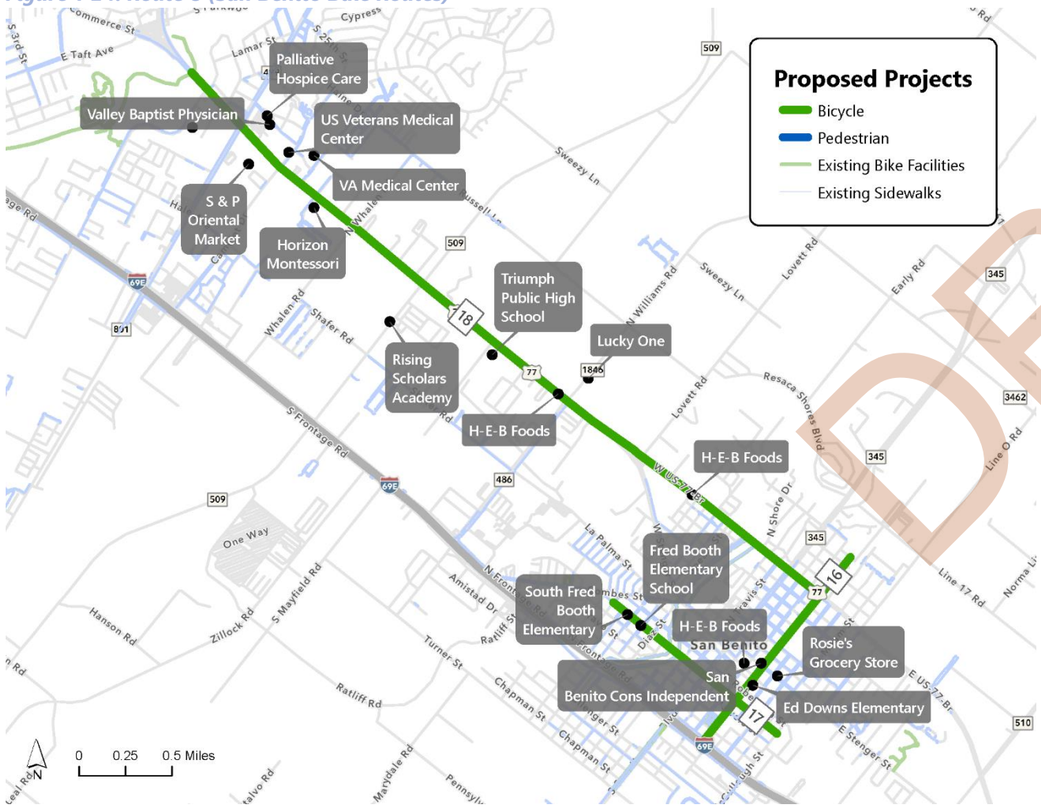


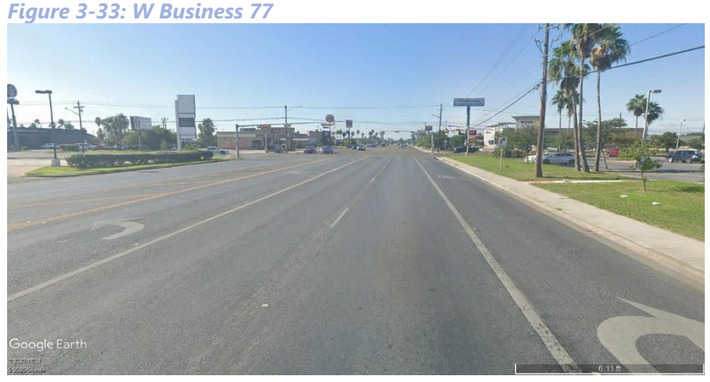
Figure 3-31: E Landrum St



Figure 3-32: Zaraaosa St



Figure 3-33: W Business 77



Route 9: Brownsville Bike Network

Bicycle improvements recommended in the City of Brownsville include two segments, as shown in **Figure 3-34**. This project will span 1.06 miles, focusing on Calle Milpa Verde (0.90 mi) and Esperanza Rd (0.16 mi), shown in **Figure 3-35** and **Figure 3-36**. Due to existing on-street parking, reasonable project types may include developing a sharrow or a protected two-way cycle track. The project improves connections between existing on-street bike facilities, Hernandez Food Store, and a Garza Elementary School along the route. The major goal of this project is to connect the existing shared lane on E 30th Street and the bike route on La Posada Drive. An added benefit is providing an alternative mode of transportation in a residential area that can easily support additional bike infrastructure and providing a safe route for residents to Hernandez Food Store and Garza Elementary School.

Figure 3-34: Route 9 (Brownsville Bike Network)



Figure 3-35: Calle Milpa Verde



Figure 3-36: Esperanza Rd



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Route 10: Edinburg Bike Network

Bike improvements recommended in the City of Edinburg include one segment, as shown in **Figure 3-37**. This project will span 1.44 miles across Cano Street to improve connections to existing active transportation facilities and service high demand areas along the route. **(Figure 3-38 - Figure 3-39)** This route was specifically chosen to connect multiple parallel on- and off-street bicycle routes south of Highway 107. Through these connections a number of key destinations can be accessed such as St. Joseph's Catholic School, La Michoacana Meat Market, a Special Education Attorney, and Fernandez Grocery are more accessible. Cano Street is a built as a high volume road and would benefit from a protected bike line to ensure user confidence and safety.

Figure 3-37: Route 10 (Edinburg Bike Network)

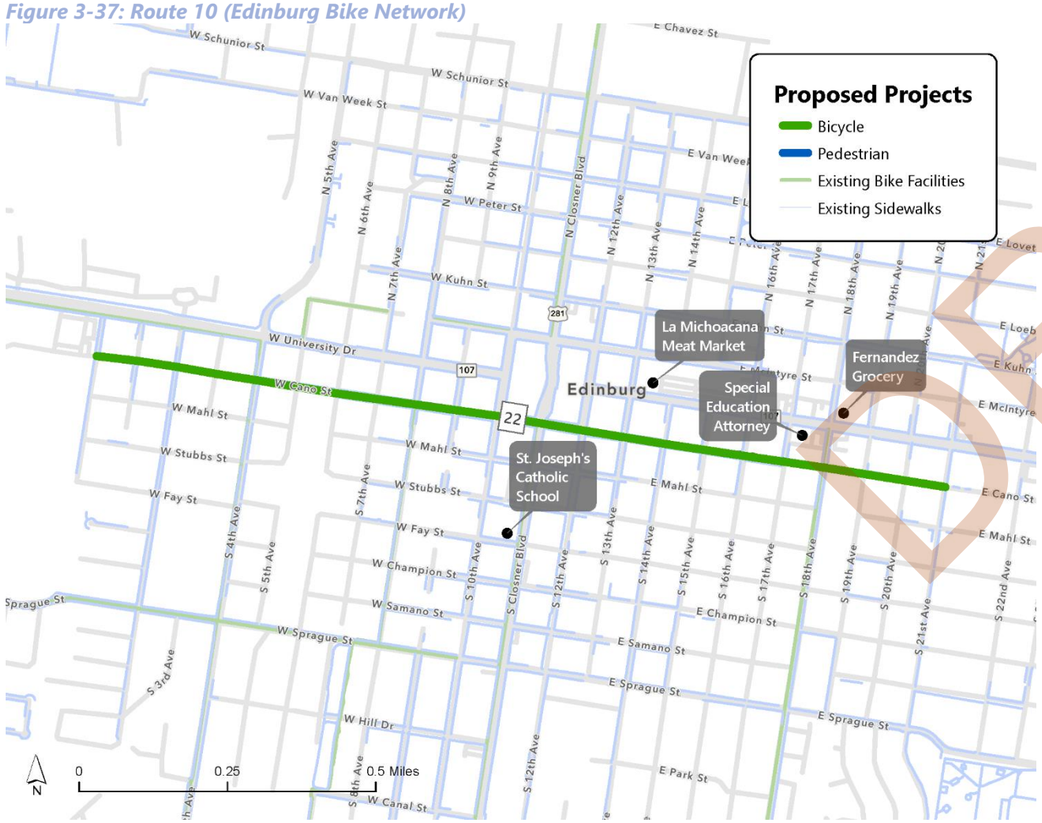


Figure 3-38: E Cano St



Figure 3-39: W Cano St



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Route 11: Mission Bike Network

Bike improvements recommended in the City of Mission include five segments, as shown in **Figure 3-40** . This project will span 6.33 miles, focusing on Elm Drive (1.77 mi), N Holland Avenue (2.90 mi), W Business 83 (0.38 mi), N Perkins Avenue (0.14 mi), and 12th St (1.14 mi) (**Figure 3-41 - Figure 3-43**) to improve connections to a number of local high schools and elementary schools, Wal-Mart, and Mission Regional Medical along the route. These proposed segments create a north-south corridor and an east-west corridor that connect to existing on-street bike routes on W Griffin Pkwy and N Shary Rd. This project spans across the majority of the city's high demand areas, while simultaneously creating opportunities to venture to a neighboring community (Sharyland) and other key destinations.

Figure 3-40: Route 11 (Mission Bike Network)

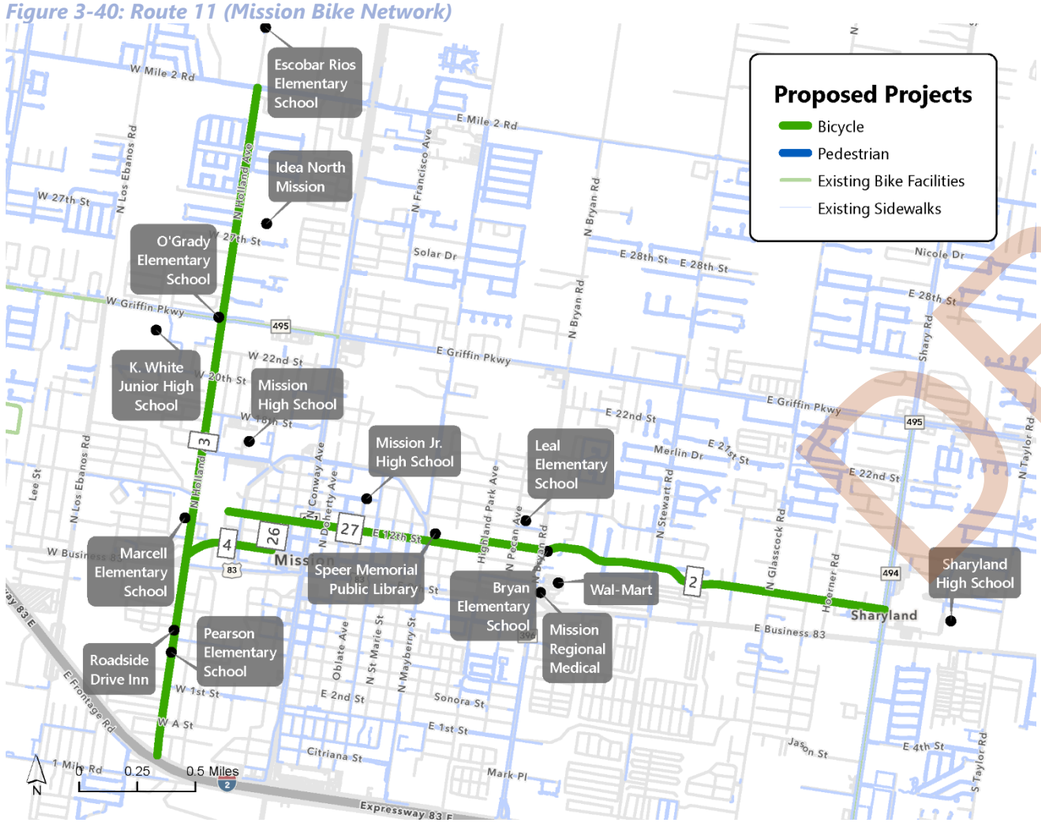


Figure 3-41: Elm Dr.



Figure 3-42: S Holland Ave



Figure 3-43: W Business 83



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REGIONAL NETWORK CONNECTIONS

Route Development

A regional bicycle network across the Rio Grande Valley can build an important connection between local communities and the region's many destinations. A collection of safe and accessible bicycle routes spanning the region can inspire both residents and tourists alike to experience the Rio Grande Valley's unique character from natural habitats to historic and cultural sites. The development of a conceptual regional bicycle network for the Rio Grande Valley was inspired by the United States Bicycle Route network, a series of designated on-road routes spanning across the US to connect cyclists to natural and cultural destinations. This regional on-road bicycle network enhances already well-ridden cycling routes, compliments the region's off-road bicycle facilities and supports efforts for growing the active tourism economy.

The conceptual regional bicycle network was steered by key priorities to ensure the defined routes are reflective of community desires and needs. This high-level approach balances connectivity, feasibility, and safety to create a baseline for developing a well-connected network that encourages biking throughout the region. The following priorities highly influenced the proposed routes:

- **Connection to Communities:** The network connects urban and rural, coastal and border communities by designated bike routes throughout the region.
- **Connection to Regional Destinations:** Routes were developed to connect communities to the region's cultural and natural features.
- **Safety:** The network enhances on-road routes with infrastructure that increases cycling visibility and legibility for all users of the road.
- **Low Cost Infrastructure:** The on-road routes incorporate roads with wide shoulders, lower traffic volumes and easy-to-implement infrastructure enhancements.

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The conceptual regional bicycle route establishes a basic network of on-road bicycle facilities to encourage healthy, active travel throughout the Rio Grande Valley. The on-road network works as a compliment to the region's commitment to building a regional network of off-road facilities. Given the region's expansive size, rich cultural amenities throughout the region, and pristine natural areas ranging from the coast to the border and beyond, an on-road network makes it possible to connect all of these key destinations. By enhancing routes already popular among local cyclists with easy-to-implement infrastructure, the region can further encourage cycling enthusiasts and legitimize local cyclists' rights to the road. Such enhancements can create a safer and more comfortable experience for local cyclists while also inspiring more bicycle tourists to experience the region.

Connection to Communities

The proposed regional routes connect major urban areas and rural communities throughout the Rio Grande Valley. **Figure 3-44** shows the routes spanning across the RGVMAB reaching Brownsville to the southeast to Mission on the western side, up to Edinburg to the north, and crossing many of the main community centers throughout. Incorporating both urban and rural community centers into the regional route promotes equity in access and the ability to take part in healthy, active travel.

Connection to Regional Destinations

A key feature of the regional bicycle network is creating better bicycle access to the region's public land destinations such as public parks, wildlife areas and trail heads. Based off community input, access to these destinations was prioritized when developing the regional route. Bicycle access to parks, trails and other regional destinations encourages bicycle tourism as these destinations are highly attractive to outdoor enthusiasts. The proposed regional bike routes provide access to the following public parks:

- Laguna Atascosa National Wildlife Preserve
- Santa Ana National Wildlife Refuge
- Lower Rio Grande Valley National Wildlife Refuge
- Las Palomas Wildlife Management Area
- World Birding Center – Bentsen Rio Grande Valley SP
- Port Isabel Lighthouse Historic Structure
- Palo Alto Battlefield National Historic Park
- Delta Lake Park

Low Investment Infrastructure

The proposed regional route covers a lot of ground to reach across the Rio Grande Valley. The on-road network establishes feasible bicycle connectivity throughout the region by incorporating roads that need low-investment enhancements to create safer and more comfortable routes for cycling enthusiasts. This network allows the region to broadly connect communities to destinations and fills in connectivity gaps where off-road facilities have not yet been established.

Much of the routes run along roads with wide shoulders (at least 4-feet wide). With the addition of enhanced treatments such a bike lane markings, signage and special intersection treatments, these roadways can provide much needed regional connectivity while better supporting cycling comfort and safety.

Safety

While on-road bicycle facilities create an opportunity to better connect the region via active travel, the nature of these facilities require special attention to safety. The network design balanced the need for connectivity with the presence of space for cyclists and traffic volumes and recommends critical enhancements to increase cyclist visibility and legibility for all road users. In addition, the network incorporated already popular routes among cyclists in the region.

The regional routes were aligned along roadways with wide shoulders as they provide space for biking outside of a travel lane. If a roadway with a shoulder was not present where connectivity was needed, vehicular speed, traffic volume and route popularity were considered to determine the safest route. Established routes for cycling enthusiasts in the region were determined by analyzing local Strava data. Strava is an app that many cycling enthusiasts use to record rides. Their anonymous user-generated data created a heat map for cycling activity that provided insight on what roads are used most often. While Strava app users are often the most experienced riders, these riders use routes that balance comfort, connectivity, and enjoyable scenery.

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These designated regional routes should be established in-tandem with recommended facility enhancements to ensure safety and comfort.

Recommendations

Experience in other areas shows that safe, accessible, and comfortable network connections at the regional level can help to tie a region together and help promote regional identity. Regional routes also provide the transportation system resources to truly make commuting by bicycle or other active transportation modes feasible and attractive. Regional routes also provide a backbone for a growing Active Tourism initiative, while more off-street trails are developed and implemented. If properly signed and branded with attractive, identifiable themes, these routes can also induce businesses and activity centers that serve active transportation users to invest in locations along the route.

For this conceptual network, to become a successfully implemented regional network, the following actions are recommended as shown in **Table 3-7.**

Table 3-7: Regional Recommendations

Action	Entity	Term
Designate Route with Signage	County, TxDOT	Short
Prioritize Maintenance	County, TxDOT	Long
Eliminate or Reconfigure Rumple Strips	County, TxDOT	Medium
Connect Local Facilities	Local, County, TxDOT	Long

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Designate Route

Route designation plays a significant role in building an awareness for all road users including cyclists and people operating motor vehicles as signage helps signal there are cyclists present. A key feature in developing this regional network includes establishing cyclist-minded wayfinding and signage alerting motorists that cyclists are present. Given that these designated routes are on-road, special attention to signage is critical to establishing safer and more comfortable bike facilities.

Share the Road signs should be used throughout the network to alert motorists to the presence of cyclists. Equally as important, the regional network should be seamlessly connected with bicycle-friendly wayfinding. Directional signage greatly assists people biking to feel comfortable and easily navigate the network. Branding the regional bike network and incorporating those design elements in the wayfinding signage provides an opportunity to create a strong sense of place and cultural importance while also providing help insights for cyclists navigating the network.

Pavement Markings

In addition to route designation, pavement markings legitimize the right for bicyclist to use the roadway, along with motor vehicles. Markings may come in the form of standard bike lane marking symbols, or in some cases buffered bike lane markings. Pavement markings should be extended to the entire network, and made more frequent where higher traffic volumes, or more route navigation occurs, and in coordination with TxDOT and local standards.

Intersection Treatments

On-road bike facilities need to take special precautions at intersections as these are the locations where road user conflicts are most likely. A common crash scenario occurs when highways users use the right shoulder as a turn lane. This increases the risk for people biking they may not be seen. Pavement markings, signage or other vertical protected elements may be uses at such intersections to provide bicyclists greater protection. Attention should be given to both urban and rural intersections that may present conflict, and solutions should be tailored for each unique location.

Prioritize Maintenance

Debris and hazards can accumulate on shoulders causing tire punctures, sudden maneuvers or even crashes for people biking. Prioritizing shoulder maintenance on designated routes will help create safe comfortable travel for all modes using the roadway. State and county officials can coordinate to determine scheduling and logistics.

Rumble Strips

Rumble Strips used to alert people driving motor vehicles that they are leaving the travel lane, can also cause significant disruption or danger for people biking. If placed in a poor position, they can even render a roadway useless to people biking. Rumble strips located on regional routes should be eliminated or altered to create tolerable riding experience. If rumble strips are desired, they can follow guidance from *FHWA technical advisory 5040.39* to create a safer riding experience.

Connect Local Facilities

Existing facilities in communities can be expanded so they create a seamless transition between local and regional networks. This can be with on or off-street facilities. Bike trips will likely begin and end in a urban community, so the transition from a local network to regional routes is critical. Gaps between existing facilities and designated regional routes can be prioritized and filled with appropriate facilities to ensure a smooth transition.

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Figure 3-44: Conceptual Regional Network



1. USBR 55 Combes-San Benito
2. USBR 55 San Benito-Los Indios
3. USBR 55 Los Indios-Brownsville
4. USBR 55 Brownsville-Port Isabel
5. USBR 55 Port Isabel-SPI
6. USBR 55 Port Isabel-Laguna Atascosa NWR
7. USBR 55 Laguna Atascosa NWR-Rio Hondo
8. USBR 55 Rio Hondo-Combes
9. USBR 55 Combes-Willacy Co.
10. USBR 55 Combes-Elsa
11. La Paloma-Bayview
12. Laguna Vista-San Pedro
13. Brownsville-Los Fresnos
14. Rio Hondo-San Benito
15. Harlingen South
16. Progreso-Los Indios
17. Weslaco-Progreso
18. Weslaco-Elsa
19. Elsa-Delta Lake Park
20. Edinburg-Elsa
21. McAllen-Edinburg
22. 83 Bypass
23. McAllen-Weslaco
24. Hidalgo-Progreso
25. Southern Nature Connector
26. Mission-Sullivan City
27. Mission-Alton
28. Monte Cristo Connector
29. Edinburg-Willacy Co.
30. McCook Connector
31. Mission-McAllen
32. McAllen-Hildalgo
33. Weslaco-Harlingen

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4 IMPLEMENTATION

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In This Chapter:

- Facility Selection Process
- Funding Opportunities
- Transportation Alternatives Set-Aside (TASA) Project Call
- Project Lists

INTRODUCTION

The Implementation chapter provides RGVMPO and their planning partners a path forward for identifying, funding and prioritizing projects that build a connected and accessible active transportation network; a network that supports people who walk and bike to accomplish their daily needs and/or for recreation. Additionally, a collection of Design Guidelines based on national best practices supports the facility selection process and can be found in **Appendix A.**

FACILITY SELECTION

The selection of an active transportation facility type requires a balance of factors. Among these factors are community priorities, local land use context, existing conditions, equity, engineering and design judgment, and project constraints, such as cost or right of way. The process of facility selection is iterative; as more data about the roadway and surrounding context is determined, the type of facility that designers, the community, and planners feel is best may change. It is important to consider all the tools listed in **Appendix A** to make the best selection for the given project.



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Based on FHWA guidance, the facility selection charts shown in **Figure 4-1** and **Figure 4-2** below are general recommendations for both an urban and rural context and give a starting place for determining the appropriate facility type for each scenario. Because each scenario is unique, Specific conditions should determine the ultimate facility selection, in conjunction with professional planning, engineering expertise and input from the community. For additional information and characteristics on specific facility types, visit **Appendix A** to view Design Guidelines for bicycle and pedestrian infrastructure. The Design Guidelines in **Appendix A** reference national best practices from the National Association of Transportation Officials (NACTO), American Association State Highway and Transportation officials (AASHTO), and FHWA.

Figure 4-1: Bicycle Facility Selection Chart

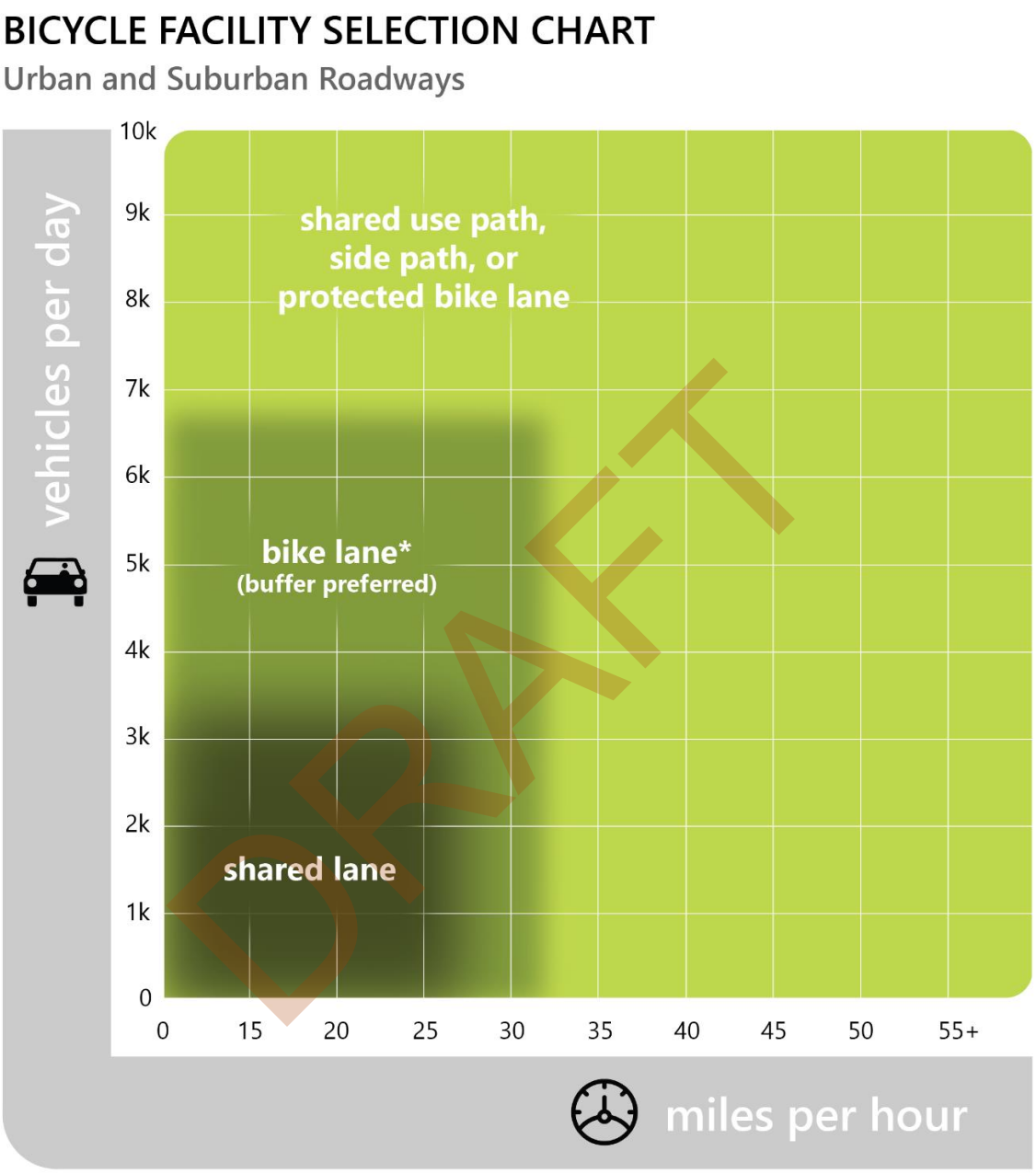
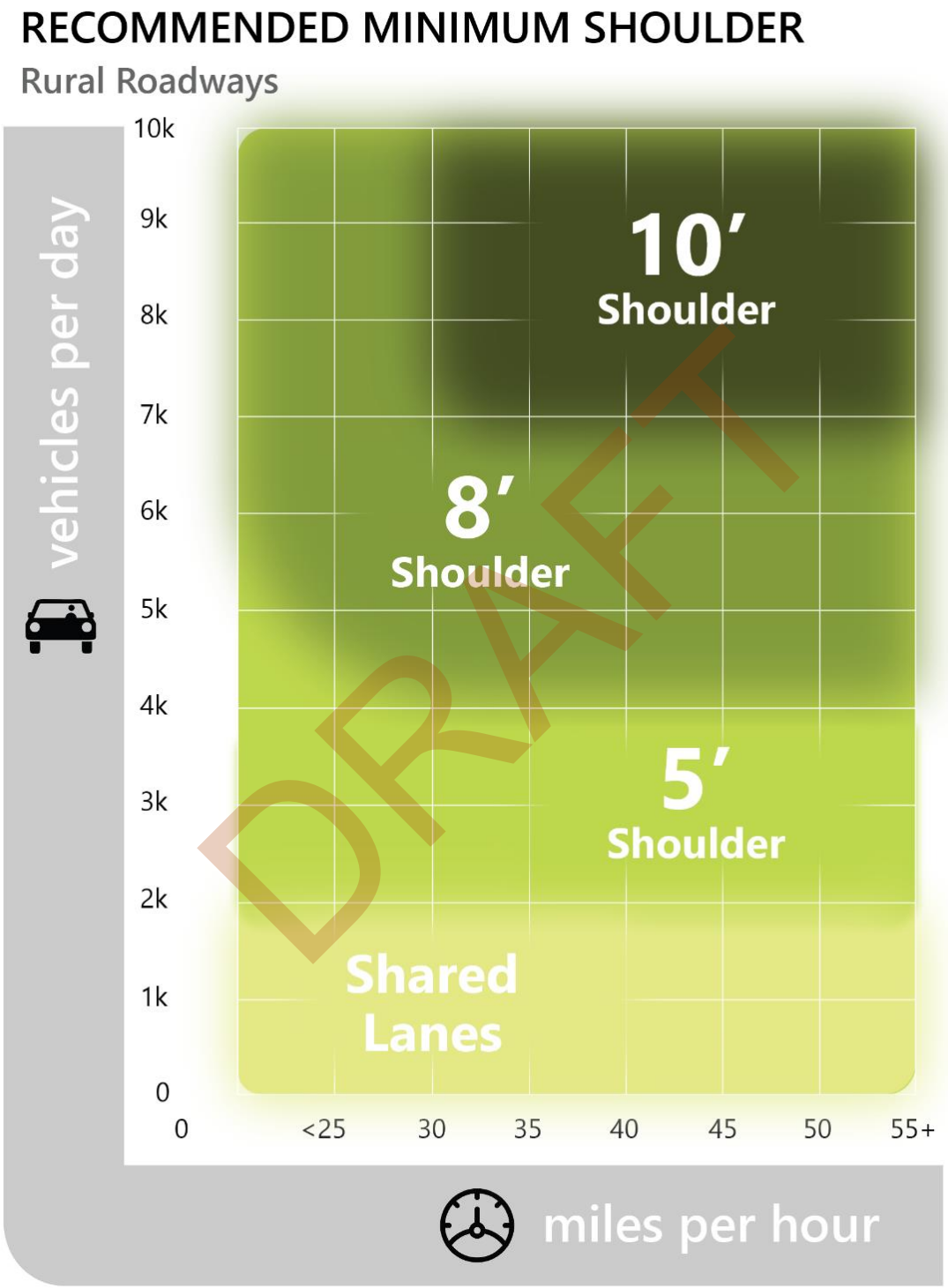


Figure 4-2: Recommended Minimum Roadway Shoulder



Planning Cost Estimates for Active Transportation

The planning phase cost estimate of an active transportation project is an essential piece of the project planning and prioritization phase . Weighing costs and balancing priorities are always challenging, so the more accurate costs can be initially, the easier the process becomes as projects advance.

To assist RGVMPO staff and local planning partners, planning-level cost estimates are listed individually at a per mile rate. Cost estimates can vary greatly from project to project depending on the conditions of the road, alterations needed to implement the project, and the right of way space available. **Table 4-1** provides several project costs based on TxDOT published low bid items from August 2020. Combining a number of these project items provides a planning-level cost estimate and can help determine project feasibility and prioritization given existing conditions. Multiple example projects are presented below as a guide for estimating cost-effective project development. These cost estimates do not include any contingency or construction mobilization and assume that the facilities are being added to existing roadway.

Table 4-1: Planning Cost Estimates

Project Item	Assumptions (Bikeway on both sides of street)	$/Mile
Continental Crosswalk (6 ft wide)	For roadways with width of 48 ft	$156
Standard Crosswalk (6 ft wide)	For roadways with width of 48 ft	$260
Bicycle lane pavement marking arrow	Marking set every 1,200 ft	$924
Signs for Mid-Block Application	Two signs per crossing	$1,000
Bicycle lane pavement marking symbol	Marking set every 1,200 ft	$1,936
Installing a sign	Sign placed on both sides every 1/4 mile	$4,000
4" white solid pavement marking with diagonal striping	Markings set on both sides	$6,811
Two-way bike lane	2 inch stipe OR 6 inch yellow pavement marking	$10,560
Precast Concrete Button	Set on both sides, 3 inch height, 10 ft spacing	$21,120
Flexible Plastic Post	Set every 20 ft on both sides	$26,400
Pedestrian Hybrid Beacon	One per crossing	$80,000
2.5' Armadillo Barrier	Parallel to bicycle travel lane at 6' spacing, both sides of street	$103,118
Conic Median	Set on both sides, 2 ft width	$117,333
Self-Watering Planters	Excluded plant and soil costs	$368,280
Concrete Traffic Barrier	Set on both sides	$369,600
Shared Use Path 12' wide concrete pavement Reflective centerline striping 1 sign per quarter mile on each side	No regrading, utility conflicts, curb ramps, tree removal, drainage work	$436,960

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Example Project Estimation

A protected bike lane added to the existing roadway would essentially require roadway striping, markings, and signage equating to approximately $13,700 per mile. Right of way preparation, landscaping, excavation, and similar costs have intentionally been omitted from this cost estimate because of their variability. **Table 4-2** outlines each line item necessary for this type of project and provides the per mile cost of adding a physical barrier. Common and effective barriers to choose from include flexible plastic posts, self-watering planters, precast concrete barriers, armadillos, and concrete medians.

Table 4-2: Protected Bicycle Lane

Example 1: Protected Bicycle Lane w/ Barrier		
Project Item	**Assumptions (Both sides of street)**	**$/Mile**
4" white solid pavement marking w/ diagonal striping (Buffered Lane)	Markings set on both sides	$6,811
Bicycle lane pavement marking arrow	Marking set every 1,200 ft	$924
Bicycle lane pavement marking symbol	Marking set every 1,200 ft	$1,936
Installing a sign	Sign placed on both sides every 1/4 mile	$4,000
Total Road Marking Cost per Mile		**$13,671**
	ADD A BARRIER	
Flexible Plastic Post	Set every 20 ft on both sides	$26,400
Self-Watering Planters	Excluded plant and soil costs	$368,280
Precast Concrete Button	Set on both sides, 3-inch height, 10 ft spacing	$21,120
Armadillo	Parallel to bicycle travel lane at 6' spacing, both sides of street	$103,118
Concrete Traffic Barrier	Large construction style, set on both sides	$369,600
Concrete Median	Set on both sides, 2 ft width	$117,333
Total per Mile	**$13,671+ Your Choice of Physical Barrier**	

Similarly, **Table 4-3** highlights the customization of these cost estimates and the variance between different projects. This example estimates the cost of a two-way bicycle lane with the same assumptions as the previous one-way example, which allows for cost comparison. Adding individual line items for planning-level cost estimates is recommended to help create cost-effective, successful projects.

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Table 4-3: Protected Two-Way Bicycle Lane

Example 2: Two-Way Bicycle Lane		
Project Item	**Assumptions (Bi-directional, one side of street)**	**$/Mile**
4" white solid pavement marking w/ diagonal striping (Buffered Lane)	Marking set on one side	$3,406
Two-way bike lane	2-inch stipe & 6-inch yellow center line	$5,280
Bicycle lane pavement marking arrow	Marking set every 1,200 ft	$462
Bicycle lane pavement marking symbol	Marking set every 1,200 ft	$968
Installing a sign	Sign placed every 1/4 mile	$2,000
Total Road Marking Cost per Mile		**$12,116**
ADD A BARRIER		
Flexible Plastic Post	Set every 20 ft	$13,200
Self-Watering Planters	Excluded plant and soil costs	$184,140
Precast Concrete Button	3-inch height, 10 ft spacing	$10,560
Armadillo	Installed parallel to bicycle travel lane at 6' spacing	$51,559
Concrete Traffic Barrier	Large construction style, Set on both sides	$184,800
Concrete Median	2 ft width	$58,667
Total per Mile	**$12,116 + Your Choice of Physical Barrier**	

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Crosswalks are another prime example of how location and design play an integral role in cost estimation. Depending on the design, a crosswalk can range from $156 to $260 for a 48 ft wide road The location of a crossing can also impact its cost. Mid-block crossings can be more costly depending on the signage and beacons used to allow for a safe crossing. . **Table 4-4** and **Table 4-5** display planning level cost estimates for standard and mid-block crosswalks.

Table 4-4: Crosswalk Estimates

Example 4: Crosswalk		
Project Item	**Assumptions**	**Cost**
Standard Crosswalk (6 ft wide)	For roadways with width of 48 ft	$260
- OR -		
Continental Crosswalk (6 ft wide)	For roadways with width of 48 ft	$156

Table 4-5: Mid-Block Crossing (Standard Crosswalk) Estimates

Example 5: Mid-Block Crossing (Standard Crosswalk)		
Project Item	**Assumptions**	**Cost**
Signs for Mid-Block Application	Two signs per crossing	$1,000
Pedestrian Hybrid Beacon	One per crossing	$80,000
Total		**$80,100**
CHOOSE A CROSSWALK		
Standard Crosswalk (6 ft wide)	For roadways with width of 48 ft	$260
Continental Crosswalk (6 ft wide)	For roadways with width of 48 ft	$156
Total	**$80,100 + Your Choice of Crosswalk**	

FUNDING OPPORTUNITIES

Summary of Federal Funding

The federal government provides multiple funding opportunities for implementation of bicycle and pedestrian improvements. The federal programs that provide the funding to build these improvements regularly requires a local match. The funding through the Federal Highway Administration (FHWA), Department of Transportation (DOT), and the Federal Transit Authority (FTA) is sent to TxDOT each year. TxDOT then works with local MPOs to prioritize different local transportation projects and administers the funding accordingly. FHWA funds are divided among individual apportioned programs—such as the National Highway Performance Program (NHPP), Surface Transportation Block Grant Program (STBG), and the Highway Safety Improvement Program (HSIP). Then the funding is distributed to local agencies. This section highlights the most relevant federal funding sources for bicycle and pedestrian infrastructure improvements and summarizes program guidelines, key eligibility requirements, and types of eligible projects.

Federal Funding

The primary federal transportation funding program for bicycling projects comes from a set-aside of the Surface Transportation Block Grant (STBG) Program funding for transportation alternatives (TA). These set-aside funds are eligible for a variety of smaller-scale transportation projects such as pedestrian and bicycle facilities, recreational trails, and safe routes to school projects. For most projects under the TA set-aside, the Federal share is generally 80 percent Federal and 20 percent State or local match. The TA set-aside and other federal funding sources that are pertinent to the RGVMPO are summarized in the following sections.

The Better Utilizing Investments to Leverage Development Grants (BUILD)

Formerly known as TIGER grants, BUILD grants are competitive grants that can be used to fund road, rail, transit or port projects that achieve national objectives or have significant regional impact. BUILD grant projects can support multi-jurisdictional projects that are typically difficult through typical federal funds. Urban areas over a population of 200,000 are considered urban for the purposes of the BUILD grant applications.

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Federal Transit Administration (FTA)

The FTA provides funds for bicycle and pedestrian investment as they relate to transit investment. FTA funds may be used to fund appropriate bicycle and pedestrian infrastructure improvements such as bicycle lanes, bicycle parking, bus shelters/benches, sidewalks, and lighting among others. To qualify for FTA funds, projects must provide or improve access to existing or planned transit facilities such as stops and stations. Multiple FTA grant programs exist that can assist with funding bicycle and pedestrian infrastructure.

Fixing America's Surface Transportation (FAST Act)

The FAST Act, enacted in late 2015 and administered by the FHWA, provides secure surface transportation program funding for 2016 through 2020. The FAST Act is meant to improve mobility, enhance economic growth, and accelerate project delivery by providing funding for roadway improvements. The FAST Act requires MPOs to consider all users when designing and constructing transportation infrastructure projects and provides flexibility to use funds for bicycling and walking improvements. Individual programs under the FAST Act have varying requirements and eligible projects.

The FAST Act authorizes funding to each State in a lump sum for all apportioned programs. Programs related to bicycle and pedestrian infrastructure include the Surface Transportation Block Grant Program (STBG), Congestion Mitigation and Air Quality Improvement Program (CMAQ), Highway Safety Improvement Program (HSIP), and National Highway Performance Program (NHPP).

SURFACE TRANSPORTATION BLOCK GRANT PROGRAM (STBG)

As the most flexible federal funding program, the STBG Program—redesigned from the traditional Surface Transportation Program—provides funds that are eligible for use on nearly all projects that include bicycle and pedestrian improvements. Typically, STBG funds are not used on local or rural minor collectors; however, bicycle/pedestrian projects are exceptions to that standard. STBG funds are sub-allocated to the local level based on a municipality's relative share of the state's population and classification as one of the following: an urbanized area with population greater than 200,000, urbanized area with population greater than 5,000 but no more than 200,000, or areas with population less than 5,000. TxDOT prioritize projects and administer STBG funds.

CONGESTION MITIGATION AND AIR QUALITY IMPROVEMENT PROGRAM (CMAQ)

CMAQ funds are lump sum, state-apportioned funds available through the FHWA as a continuing program under the FAST Act. CMAQ funding availability is a proportion of the overall apportionment for each state. CMAQ funds are meant to assist in funding projects that improve air quality and relieve congestion. Eligible projects are likely to contribute to the attainment of air quality standards and reduce air pollution, and the projects must be included in an MPO's Transportation Improvement Program (TIP). CMAQ funds may be used on, but not limited to, the following transportation improvements: bicycle lanes, separated bicycle lanes, sidewalks, shared use paths, and signage. In Texas, CMAQ funds are included within TxDOT's Category 5 funding. The RGVMPO is currently in attainment as designated by the Environmental Protection Agency and is therefore not eligible form CMAQ funding.

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HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP)

Continued under the recently enacted FAST Act, the HSIP aims to assist public agencies in improving safety along public roadways. Specifically, HSIP funds are dedicated to projects that reduce conflicts between pedestrian/bicycles and automobiles, such as pedestrian hybrid-beacons and roadway improvements that provide separated facilities (e.g. medians or pedestrian islands). As part of the HSIP, a performance-based approach is used to determine funding projects. To be eligible for HSIP funds, projects must be consistent with State level strategic highway safety plans (SHSP) and must specifically address a hazardous location or safety concern. HSIP funds are administered within Texas by TxDOT.

NATIONAL HIGHWAY PERFORMANCE PROGRAM (NHPP)

NHPP funding availability is continued through the FAST Act and provides funding for the construction of new facilities on the National Highway System (NHS). NHPP funds can be utilized to fund bicycle lanes, bicycle parking, curb cuts and ramps, separated bicycle facilities, and shared use paths, among others. NHPP funds are administered by TxDOT in Texas.

TRANSPORTATION ALTERNATIVES SET-ASIDE PROGRAM (TA)

TA funding is a set-aside of the STBG Program. All bicycle and pedestrian projects previously eligible for TA funding under the Moving Ahead for Progress in the 21st Century Act (MAP-21) continue their eligibility in the revised TA from the FAST Act. Projects that are small-scale in nature typically qualify for TAP funding. TAP funding is a competitive process and now requires states and MPOs to provide annual reports on applications for funding and awarded funds.

RECREATIONAL TRAILS PROGRAM (RTP)

The RTP was reauthorized under the FAST Act and is now a set-aside of funds from the TAP. The RTP is administered in Texas by the Texas Parks and Wildlife Department. Eligible projects include maintenance and restoration of existing facilities, construction of new trails, acquisition of easements or property for trails, and the development and rehabilitation of trailside/trailhead facilities and trail linkages. Additional eligibility requirements specific to Texas can be found under the Texas Parks and Wildlife (TPWD) Recreational Trails Grants.

Community Development Block Grants (CDBG) Entitlement Program – Department of Housing and Urban Development (HUD)

The CDBG Entitlement Program, administered through the Department of Housing and Urban Development, provides funds to entitlement communities on a formula basis to develop viable urban communities. As such, funds available through the CDBG Entitlement Program would likely only be eligible for bicycle and pedestrian projects within city limits. These grants can be used to fund an array of community development projects, including public facilities and improvements that enhance the quality of life for residents of low- to moderate-income communities. Specifically, the construction or improvement of streets is an approved activity. Eligible projects could include sidewalk improvements, streetscape enhancements that promote economic development, and community-based active transportation facilities. The grantee must develop and follow a detailed citizen participation plan during the design and implementation of any funded project. Additional eligibility requirements can be found on the CDBG Entitlement Program website.

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Section 108 – Loan Guarantee Program – Department of Housing and Urban Development (HUD)

Nestled under the CDBG program, the Section 108 - Loan Guarantee Program allows local governments to transform a small portion of their allotted CDBG funds into federally guaranteed loans to pursue revitalization projects for neighborhoods. These loans can be utilized by either the public entity receiving the funds or loaned to a third party to construct community projects. Guidelines and eligible projects under the Section 108 – Loan Guarantee Program match those under the CDBG program.

Transportation Infrastructure Finance and Innovation Act (TIFIA)

The TIFIA program provides financial assistance in the form of secured loans, loan guarantees, and lines of credit to finance surface transportation projects. Specific TIFIA requirements and project cost thresholds can be found at the FAST Act website.

Rapid Response Grants – Advocacy Advance

Rapid Response Grants are administered through the Advocacy Advance organization and help state and local organizations to secure funding for active transportation projects. The funds do not directly assist with the implementation of bicycle and pedestrian projects, they can provide local advocacy organizations with additional funds to campaign for improved funding of the bicycle and pedestrian projects at the state and local level. It is important to note that Rapid Response Grants are only available when funding permits.

Private Grants – Robert Wood Johnson Foundation

The Robert Wood Johnson Foundation invests in grantees (e.g., public agencies, universities, and public charities) that are working to improve the health of all Americans. Current or past projects in the topic area "walking and biking" include greenway plans, trail projects, advocacy initiatives, and policy development.

Community Grants – People for Bikes

Community Grants, available through the People for Bikes organization, provide funding for projects that leverage federal funding and increase awareness for bicycling projects across the United States. Eligible projects include bike paths and trails.

State Funding

In addition to local funds, state funding sources can also be leveraged for implementing active transportation infrastructure. The following sources are state-level funding items in Texas.

Texas Department of Transportation (TxDOT)

TxDOT administers the State's apportionment of FAST Act funds provided by the FHWA. TxDOT sub-allocates these funds to the local level using twelve funding categories. Relevant bicycle and pedestrian funding categories include:

- Category 1: Preventative Maintenance and Rehabilitation
- Category 2: Metropolitan and Urban Corridor Projects
- Category 4: Statewide Connectivity Corridor Projects

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- Category 5: Congestion Mitigation and Air Quality Improvement
- Category 7: Metropolitan Mobility and Rehabilitation
- Category 8: Highway Safety Improvement Program
- Category 9: Transportation Enhancements
- Category 9: Transportation Alternatives Program
- Category 10: Texas Parks and Wildlife Department
- Category 10: Curb Ramp Program
- Category 10: Supplemental Transportation Projects (Federal and Non-Federal)
- Category 11: District Discretionary
- Category 12: Strategic Priority (Economic Development)

It is important to note, that TxDOT funding categories are filled with federal funds and in some cases additional state funding resources, but contain slightly different labels than federal categories. Apart from federal funding, TxDOT finances transportation infrastructure projects through a variety of revenue sources, including State Highway Funds, bond proceeds, Texas Mobility Fund, General Revenue Fund, and concession fees.

Texas Parks and Wildlife (TPWD) Recreational Trails Grants

The Texas Parks and Wildlife Division (TPWD) administers the Recreational Trails Program in the state of Texas through funds provided by the FHWA, which receives its funding from a federal gas tax paid on fuel for non-highway recreational vehicles. Grants cannot exceed 80% of the project cost and have a $200,000 limit.

Local Funding

Dedicated local funding is the most consistent and reliable funding source to implement bikeway projects. It signals a community's commitment to bicycle and pedestrian projects and strengthens applications for federal, state, and private funding. The following descriptions apply to individual municipal governments within the RGV MPO.

Property Taxes

Property taxes are, historically, the primary source for local revenue and contribute to a city's general fund. These funds may be used at the discretion of each municipality—subject to local policies, procedures, and availability—to assist in the funding of bicycle and pedestrian infrastructure improvements. Property tax increases can be enacted through a public voting process to assist in the funding of specific bicycle and pedestrian projects.

Sales Taxes

Local sales taxes are another source for local revenue. Like property taxes, these funds may be used at the discretion of each municipality to fund bicycle and pedestrian infrastructure improvements. Sales taxes are typically a uniform percentage of the selling price and vary between local jurisdictions within Texas. Local sales tax is in addition to statewide sales tax. While sales taxes are typically distributed into the general fund, municipalities may vote to increase sales taxes as an option to fund bicycle and pedestrian projects.

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Local Capital Improvement Programs

Capital Improvement Programs (CIPs) are utilized by local municipalities as a framework for financing future capital projects. Using a variety of local funding sources, including property taxes and sales taxes, municipalities can systematically determine which projects should be funded each year based on their anticipated revenues versus operating expenses. The process of developing a CIP allows municipalities to reasonably predict when funds will be available to construct capital improvement projects, as well as prioritize specific projects. The RGVMPO should coordinate with local jurisdictions to ensure that projects identified within the TIP are included within local CIPs to leverage additional funding opportunities.

User Fees

User fees are fees that are collected from those who utilize a facility. These fees are collected to pay for the cost of a facility, finance operations, and produce additional revenue. Typically, user fees are charged for the use of specific public utilities/services, such as public parks, water and sewer services, transit systems, and waste facilities. User fees are meant to directly charge those who use a facility, so as to not burden non-users with the additional charges to operate and maintain a service they do not use. User fees may be applicable for off-road facilities and recreational trails.

Bonds

Either general obligation or revenue bonds may be used to fund bicycle and pedestrian facilities. These bonds require approval from the voting public and must be paid back to investors throughout the duration of the bond. Revenues generated from property and sales taxes are generally used to pay off bonds.

Impact/Developer Fees

Development impact fees are an additional funding source that may be utilized at the local level to fund infrastructure improvements. Developer fees are generally collected and administered differently between jurisdictions. Developer fees require policy changes at the local level if no such fee currently exists. Developer fees are meant to ensure that developers pay their fair share of improvements along the transportation system where the development is impacting the system. The use of developer fees to fund bicycle and pedestrian improvements ensures that, as development occurs in an area, pedestrian and bicycle amenities/facilities are able to support the growth.

Special Assessments

A special assessment is a method of generating funds for public infrastructure improvements, of which the cost is directly collected from those who benefit from the project. For example, neighborhoods could coordinate to ensure that a portion of their property tax or an additional fee is used to help fund bicycle and pedestrian improvements along their streets. A specific example of a special assessment is a tax-increment financing district where properties are taxed at an additional rate above the base tax rate to fund specific improvements within a designated area. The difference between the additional rate and the base tax rate (i.e. the increment) is typically used to fund those improvements.

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Crowd Funding

Crowd funding is an innovative and increasingly attractive option to fund bicycle and pedestrian infrastructure improvements. Crowd funding allows individuals to donate money to collectively fund a specific project. While crowd funding can help fund projects, it can also serve as a tool to raise community awareness for bicycle and pedestrian needs and, in turn, potentially attract additional donors and community support for continued investment in bicycle and pedestrian facilities.

Partnerships

Partnerships with local and regional businesses can be integral to securing additional funding for bicycle and pedestrian projects, particularly when local funding is not readily available. Additionally, institutions such as hospitals or universities may be interested in sponsoring bicycle and pedestrian facility improvements near their campuses to promote public health benefits associated with active transportation. Public/private partnerships are becoming increasingly popular as the economic benefits of walkable, pedestrian-friendly environments are being realized at the local level. Active transportation improvements can also revitalize and enhance business corridors by providing better accessibility. Additional partnerships between neighboring communities can lead to increased funding potential for projects that cross municipal boundaries.

Special Purpose Districts

Tax Increment Reinvestment Zones (TIRZs)

TIRZs are zones created by city councils to attract new investment and redevelopment to blighted areas. TIRZs cap property tax revenues within the designated zone. Then a bond is issued to make near-term public infrastructure investments, and to capture property tax revenue increments that capitalize due to the investment. The bonds are repaid over the life of the TIRZ with the incremental tax revenues. Public improvements can include bicycle facilities and amenities. Coordinating and leveraging funding with TIRZs is a strategy that cities can use to build their bicycle network and maintain amenities.

Municipal Management Districts (MMDs)

MMDs are special districts created through the Texas legislature. The businesses within a geographic area can opt to self-impose an assessment fee by establishing an MMD. The fees will be used to help with beautification, maintenance, signage and branding, and general marketing of the businesses. These districts promote transportation and economic development, among other functions in the boundary. MMDs provide maintenance activities for transportation facilities and implement bicycle programs. Most MMDs issue bonds, not to the level of a TIRZ, and receive funding from ad-valorem taxes, assessments, impact fees, or other funds in order to provide improvements and services. MMDs can be an avenue for cities to grow bicycle infrastructure and ensure investments are maintained.

Parking Benefit Districts

Parking Benefit Districts can finance infrastructure improvements in employment or commercial centers. This can be accomplished by dedicating parking fees and ticket revenue to bicycle and pedestrian enhancements. Within a parking benefit district, public parking spaces (on and off-street) are charged hourly rates to aid turnover of spaces for customers. The parking spots also generate revenues for facade, sidewalk, landscaping, and bike facilities improvements. It is encouraged that off-

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street parking facilities be provided where people can pay a lower price to park-once-and-walk, with higher premiums for the on-street parking. This will help to incentivize turnover and lessen the idea of insufficient parking near popular commercial corridors. According to case studies in Austin, Texas and Washington, D.C., the Federal Highway Administration has found that parking benefit districts have reduced the need for surface parking and improve traffic congestion, all while funding local improvements within the district.

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Funding Matrix

The funding matrix in **Table 4-6** will provide funding applicants a resource to see what funding opportunities their projects qualify for. The matrix was compiled by using FHWA resources. This list is not exhaustive and is subject to updates and changes. Further funding should resources be updated, may also become available.

Table 4-6: Funding Matrix

Activity	BUILD	INFRA	TIFIA	FTA	ATI	CMAQ	HSIP	NHPP	STBG	TA	RTP	SRTS	PLAN	NHTSA 402	NHTSA 405
Access enhancements to public transportation (includes benches, bus pads)	X	~X	X	X	X	X		X	X	X					
ADA/504 Self Evaluation / Transition Plan									X	X	X		X		
Bicycle plans				X					X	X		X	X		
Bicycle helmets (project or training related)									X	XSRTS		X		X*	
Bicycle helmets (safety promotion)									X	XSRTS		X			
Bicycle lanes on road	X	~X	X	X	X	X	X	X	X	X		X			
Bicycle parking	~X	~X	~X	X	X	X		X	X	X	X	X			
Bike racks on transit	X	~X	X	X	X	X			X	X					
Bicycle repair station (air pump, simple tools)	~X	~X	~X	X	X	X			X	X					
Bicycle share (capital and equipment; not operations)	X	~X	X	X	X	X		X	X	X					
Bicycle storage or service centers (example: at transit hubs)	~X	~X	~X	X	X	X			X	X					
Bridges / overcrossings for pedestrians and/or bicyclists	X	~X	X	X	X	X*	X	X	X	X	X	X			
Bus shelters and benches	X	~X	X	X	X	X		X	X	X					
Coordinator positions (State or local)						X			X	XSRTS		X			
Crosswalks (new or retrofit)	X	~X	X	X	X	X*	X	X	X	X	X	X			
Curb cuts and ramps	X	~X	X	X	X	X*	X	X	X	X	X	X			
Counting equipment				X	X		X	X	X	X	X	X	X*		
Data collection and monitoring for pedestrians and/or bicyclists				X	X		X	X	X	X	X	X	X*		
Historic preservation (pedestrian and bicycle and transit facilities)	X	~X	X	X	X				X	X					
Landscaping, streetscaping related amenities (benches, water fountains); generally as part of a larger project	~X	~X	~X	X	X			X	X	X					
Lighting (pedestrian and bicyclist scale)	X	~X	X	X	X		X	X	X	X	X	X			
Maps (for pedestrians and/or bicyclists)				X	X	X			X	X		X	X*		
Pedestrian plans				X					X	X		X	X		
Recreational trails	~X	~X	~X						X	X	X				

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Activity	BUILD	INFRA	TIFIA	FTA	ATI	CMAQ	HSIP	NHPP	STBG	TA	RTP	SRTS	PLAN	NHTSA 402	NHTSA 405
Road Diets (pedestrian and bicycle portions)	X	~X	X				X	X	X	X					
Road Safety Assessment for pedestrians and bicyclists							X		X	X			X		
Safety education and awareness activities and programs to inform pedestrians, bicyclists, and motorists on ped/bike safety									XSRTS	XSRTS		X	X*	X*	X*
Safety education positions									XSRTS	XSRTS		X		X*	
Safety enforcement (including police patrols)									XSRTS	XSRTS		X		X*	X*
Safety program technical assessment (for peds/bicyclists)									XSRTS	XSRTS		X	X*	X	
Separated bicycle lanes	X	~X	X	X	X	X	X	X	X	X		X			
Shared use paths / transportation trails	X	~X	X	X	X	X*	X	X	X	X	X	X			
Sidewalks (new or retrofit)	X	~X	X	X	X	X	X	X	X	X	X	X			
Signs / signals / signal improvements	X	~X	X	X	X	X	X	X	X	X		X			
Signed pedestrian or bicycle routes	X	~X	X	X	X	X		X	X	X		X			
Spot improvement programs	X	~X	X	X			X	X	X	X	X	X			
Stormwater impacts related to pedestrian and bicycle projects	X	~X	X	X	X		X	X	X	X	X	X			
Traffic calming	X	~X	X	X			X	X	X	X		X			
Trail bridges	X	~X	X			X*	X	X	X	X	X	X			
Trail construction and maintenance equipment									XRTP	XRTP	X				
Trail/highway intersections	X	~X	X			X*	X	X	X	X	X	X			
Trailside and trailhead facilities	~X*	~X*	~X*						X*	X*	X*				
Training						X	X		X	X	X	X	X*	X*	
Training for law enforcement on ped/bicyclist safety laws									XSRTS	XSRTS		X			X*
Tunnels / undercrossings for pedestrians and/or bicyclists	X	~X	X	X	X	X*	X	X	X	X	X	X			

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X =Eligible

~X =Eligible but not competitive unless part of a larger project

X* =Eligible under SRTS Program

TASA PROJECT CALL

Process

Each year, the federal government sets aside an amount of each state's Surface Transportation Block Grant (STBG) apportionment for Transportation Alternatives Set-Aside (TASA) funding to be spent on projects related to Transportation Alternatives. TASA eligibility encompasses a variety of smaller-scale transportation projects such as pedestrian and bicycle facilities, recreational trails, Safe Routes to School projects, community improvements (such as historic preservation and vegetation management), and environmental mitigation related to storm water and habitat connectivity.

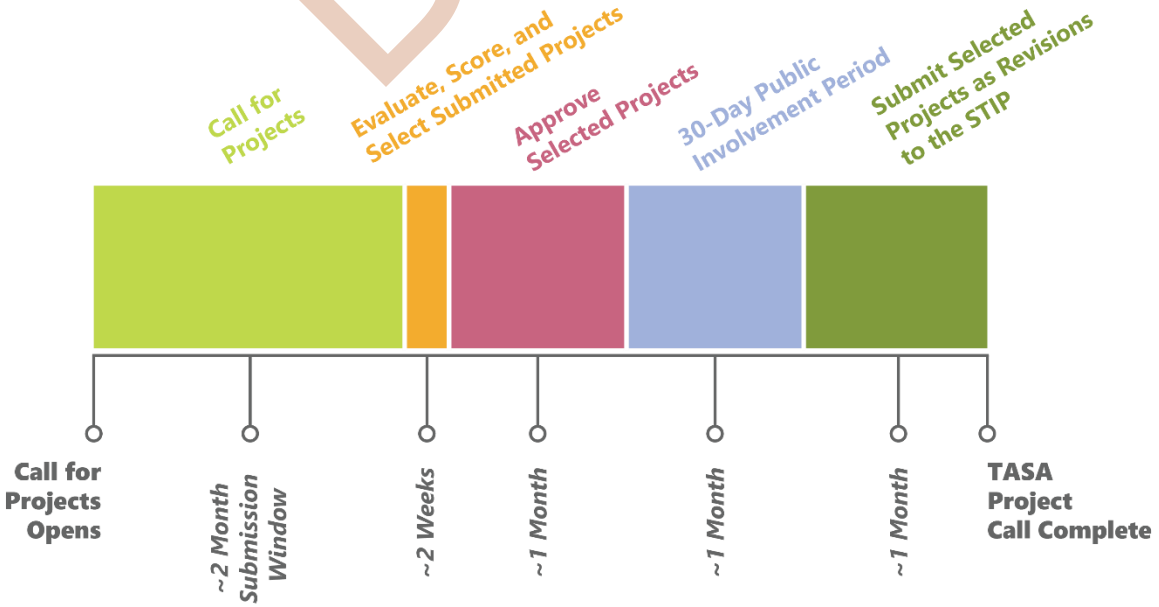
The RGVMPO conducts an annual Call for Projects to be considered for TASA funding. Sponsoring entities can submit their projects for funding consideration via an application form which will then be used by the MPO's Bicycle and Pedestrian Advisory Committee (BPAC) and Technical Advisory Committee (TAC) to evaluate and score submitted projects. The TAC and Transportation Policy Board (TPB) then formally approves projects selected through the evaluation and scoring process. Selected projects are put through a 30-day public involvement period to obtain community feedback.

Following the 30-day public involvement period, the TAC and TPB formally approve the selected projects as intended revisions to the Statewide Transportation Improvements Program (STIP). Finally, the MPO will submit the projects and other necessary revisions to the Texas Department of Transportation (TxDOT) as amendments for the STIP.

Timeline

Figure 4-3 illustrates the general timeline for the TASA project submission and selection process for the RGVMPO. As the TASA call for projects is anticipated to begin beyond the scope of this plan, finalized projects will be included in **Appendix D.**

Figure 4-3: TASA Project Call Timeline



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Scoring Criteria

RGVMPO uses a set of specific criteria to evaluate and score projects submitted for TASA funding in the RGVMAB to ensure an equitable and calculated approach for prioritizing projects. **Table 4-7** and **Table 4-8** shows the Scoring Criteria used by the BPAC and TAC when evaluating the submitted projects. The table contains evaluation criteria, the maximum points a project can receive for each criteria, the description and factors related to each criteria, and the evaluation method that instructs evaluators on how to assign points to the projects based on the criteria.

Table 4-7: RGVMPO TASA Program Scoring Criteria

Scoring Criteria			
Evaluation Criteria	**Max Points**	**Description/Factors**	**Evaluation Method**
Improving Safety (Please use whole numbers)	**29**	Provides safer and less intimidating facilities for pedestrians, bicyclists, or other non-drivers by improving safety in areas with high numbers of crashes. This involves improved crossing, signalization, traffic calming and other safety improvements.	PTS - Improves safety in area with high # of crashes within a block (300ft) 8 PTS - Improves mobility for elderly, disabled, and/or youth (disadvantaged population) 8 PTS - Improves visibility of non-drivers to vehicular traffic
Making Linkages and Connections (Please use whole numbers)	**24**	Improves connections between neighborhoods, cities, transit services, bicycle facilities, or schools. This can be achieved through gap closures, extension of regional facilities, linking multiple jurisdictions, and providing access to rail stations, bus stops, & bicycle facilities via trails and sidewalks.	6 PTS - Connects other cities/ neighborhoods 6 PTS - Connects to schools/public building 6 PTS - Extends existing system (bike/ped/transit) 6 PTS - Eliminates gaps in system (bike/ped/transit)
Incorporates Pedestrian and Bicycle Design Enhancements and Promotes Active Living (Please use whole numbers)	**15**	Provides pedestrian and bicycle areas with landscaping, sidewalk design, crossing treatments, street furniture, bike racks, or lighting which encourages pedestrian and cyclists to utilize area, thus providing health and environmental benefits	5 PTS - Provides design enhancements 5 PTS - Provides bicycle parking/ seating for pedestrians, rest areas 5 PTS - Provides trailheads, staging area and parking
Implementing Active Transportation or Mobility Plan (Please use whole numbers)	**10**	Improves ability to use walking and bicycling facilities for everyday activities including travel to work, school, and shopping as described	4 PTS - City Plan 3 PTS - Regional Plan 3 PTS - MPO Plan

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Scoring Criteria			
		in RGVMPO's Regional Bike Plan, Regional Pedestrian Plan, Regional Transit Plan, or other related community Master Plan adopted by a city or county's governing body	
Connecting to Employment, Households, and Activity Centers. Activity Centers include schools, gyms, birding centers, parks, Boys and Girls Club, etc. (Please use whole numbers)	***12***	Provides access to major entertainment destinations, parks & recreation, residencies, and general businesses for large numbers of residents and/or employees.	4 PTS - Improves access to commercial areas 4 PTS - Improves access to parks and recreational areas 4 PTS - Improves access to educational areas
Serving Disadvantaged (Environmental Justice) Areas (Please use whole numbers)	***10***	Provides access for underserved communities	10 PTS - Improves access to areas of commerce within or adjacent to 50% of households below poverty rate, as defined by Census
TOTAL:	**0 to 100 Points**		

Table 4-8: RGVMPO TASA Above and Beyond Criteria

Above and Beyond Criteria		
Evaluation Criteria	**Max Points**	**Evaluation Method**
Local Match is: (Please use whole numbers)	10	2 PTS = 21-30% 4 PTS = 31-40% 6 PTS = 41-50% 8 PTS = 51-60% 10 PTS = Above 61%
Project Readiness; PS&E, ROW (Please use whole numbers)	3	1 PT - If ROW acquisition is 90% complete or not required 2 PTS - PS&E is at least 90% Complete
Funding completes the project (Please use whole numbers)	5	5 PTS - Yes
Location of project has safe passing ordinance (Please use whole numbers)	2	2 PTS - Yes
TOTAL:	**120 Points**	

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PROJECT LIST

Roadway Project Opportunities

The FAST Act requires the RGVMPO to increase the safety for motorized and non-motorized users encompassing the entire transportation network. There is significant opportunity to expand the active transportation network when adding capacity or resurfacing a road. Restriping roadways can be done simultaneously with resurfacing projects, and bike lanes or side paths can be added when expanding roadway capacity if there is enough right-of-way present. Taking advantage of these projects can enhance the roadways and expand the transportation network to accommodate a broader range of users.

To assist local government and MPO staff identify opportunities to combine planned roadway improvements with the expansion of the active transportation network, RGVMPO 2045 MTP roadway projects that either add capacity or undergo resurfacing were selected and shown in **Figure 4-4** and **Figure 4-5** .

Purple segments indicated in each figure show roadway projects that are ¼ mile or less from current active transportation facilities. **Table 4-9** lists those projects which are located within ¼ mile from existing bike facilities and may help extend the current network. Implementing facility accommodations for non-motorized users in tandem with roadway facility improvements is a key strategy to make efficient and meaningful improvements for people who walk and bike.

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Figure 4-4: Active Transportation Opportunities in RGVMAB (West)

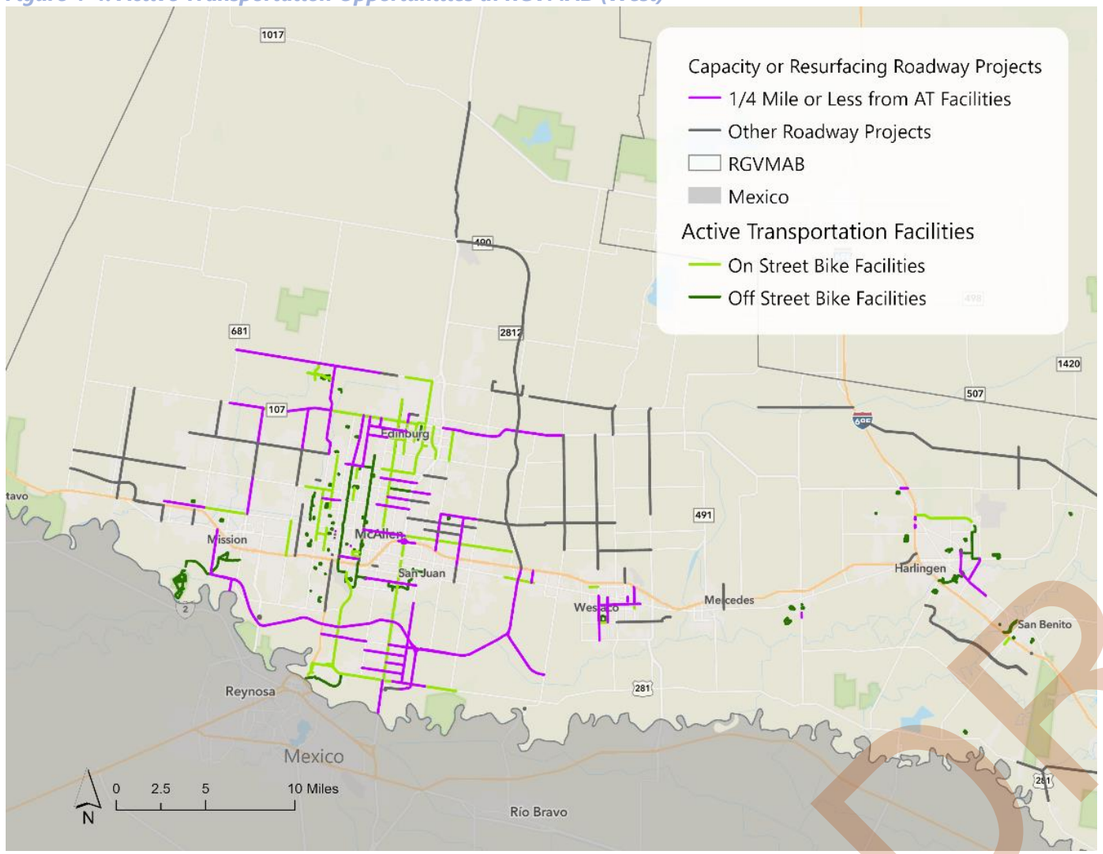
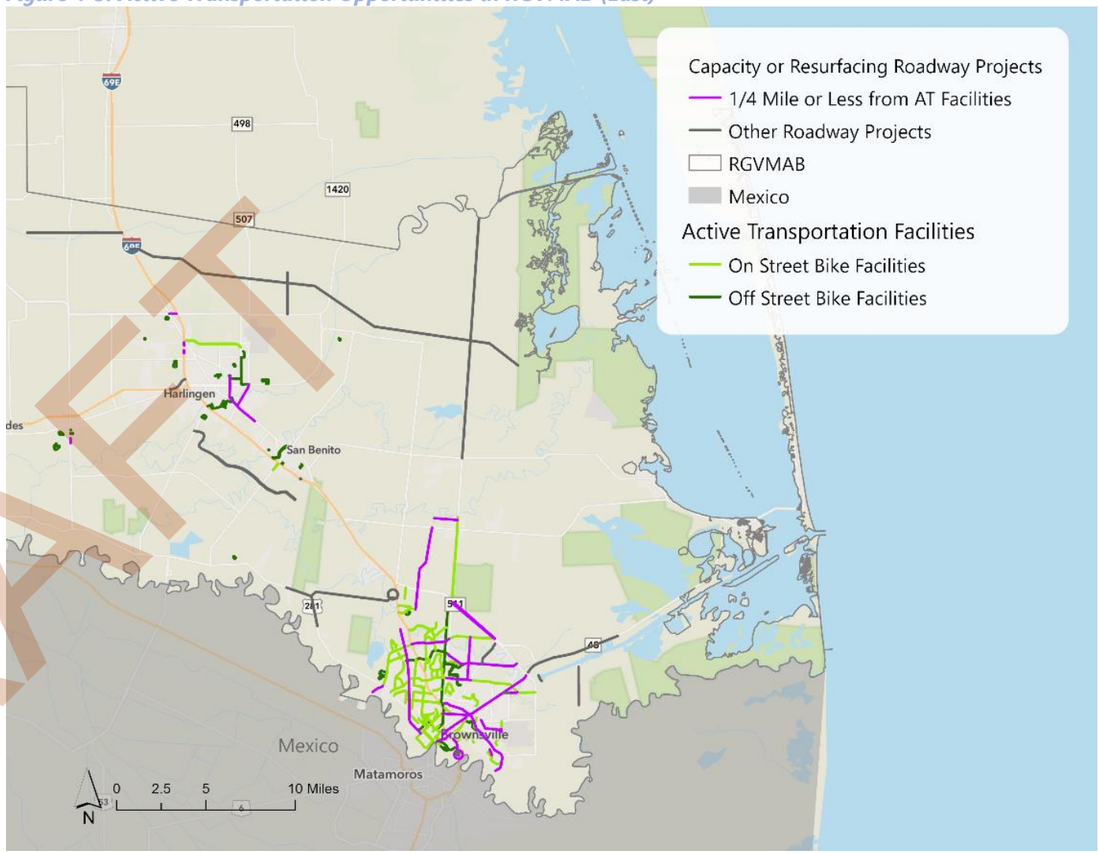


Figure 4-5: Active Transportation Opportunities in RGVMAB (East)



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Table 4-9: RGVMPO MTP Roadway Projects Within 1/4 Mile of Active Transportation Facilities

2045 MTP ID	CSJ #	Project Length (Mile)	Project Description	Project Sponsor
3	1140-02-038	1.3	Proposed 6 lanes with raised center median.	TxDOT
4	0039-16-070	0	Construct a grade separation	CCRMA
8	0255-08-107	1.82	Construct Interchange	Pharr
18	0039-17-175	10	Interchange improvements	Pharr
31	0220-05-075	0	Install Raised Center Medians	TxDOT
39	0327-08-102	0	Install Raised Median	TxDOT
40	0327-08-092	0	NB and SB Ramps Reversal	TxDOT
45	0921-02-441	0.5	4 Lane urban section	Edinburg
45	0921-02-385	0	Construction additional northbound lane and related canopies and booths into the Pharr POE inspection area	Pharr
50	1804-01-069	1	Addition of North and South bound center turn lanes	McAllen
51	0621-01-106	0.025	Addition of north bound right turn lane	McAllen
62	2717-01-027	2.12	Construct 6 lanes with raised center median.	TxDOT
64	034-04-032	0	Widen to 4 Lane un-divided Curb and Gutter	TXDOT
64	0872-04-029	0	Widen and Add continuous Left Turn	TxDOT
67	0921-02-400	1	Widen to 5 lanes	Pharr
67	0921-02-395	0	Widen to 4 Lane Divided	Mission / McAllen / Hidalgo
69	0921-02-376	1	Widen to 2 lane with continuous left turn lane	Pharr
70	1429-02-036	2	Proposed 6 Lanes raised median	San Juan / HC 2
71	0921-02-312	2.56	Widen to 4 lane with continuous left turn	HC 2
73	0342-01-074	0	Construct 6 lane divided rural	Edinburg / HC 4
75	0921-02-375	1	Widen to 2 lane with continuous left turn lane	Pharr
76	0528-01-118	1	Construct 6 Lane w Raised Median	Mission/Palmhurst/HC 3
77	0528-01-112	2	Construct 6 lane divided urban	Alton / HC 3
80	0921-06-207	0	Construction of Border Safety Inspection Facility	TxDOT
82	0039-12-254	0	Construct Raised Median	TxDOT
83	0039-12-057	1.6	Proposed 6 lane with a raised median	TxDOT
84	1137-02-038	0	Construct 6 lanes road with Raised Median	TxDOT
86	0921-02-358	1	Widen to 4 Lane	Pharr / San Juan / HC 2 - 4
90	2094-01-062	2.5	Proposed 6 Lane Median	McAllen / HC 3-4
91	0864-01-068	2	Widen to 4 lane	HC 3
92	2094-01-063	2.5	6 Lanes Divided Urban Section	McAllen / HC 3-4
93	1803-01-094	3.5	6 lane with raised median	HC 4
114	0220-05-076	3.7	Proposed 6 lanes with raised median	TxDOT
121	0921-02-361	2.25	Widen to 4 Lane Divided	HC 2 / McAllen
126	0921-06-313	0	Expansion of primary lanes for passenger vehicles.	CCRMA
129	0921-02-363	4.5	Construct 2 Lane w/ Shoulders	Pharr/San Juan/ HC 2
130	1803-01-095	4.75	Proposed 4 lanes curb and gutter	HC 3
131	0528-01-116	5.75	Widen to 6 lane with raised median	HC 3
132	0669-01-060	1.79	Widen to 6 lane with raised median	HC 3
138	0921-06-292	1.3	Proposed 2 lane roadway with continuous left turn lane	CCRMA
144	0921-02-396	1	Widen to 6 Lane	McAllen
145		2.4	Widen roadway and add sidewalks	City of Brownsville
148	0921-02-398	0.6	Widen to 4 Lane Urban with siphon	McAllen
149	0921-02-440	1.13	Widen and Reconstruct Roadway (2 to 4 Lanes) Divided Urban	Edinburg
151		2.13	Widen to 4 Lane	Edinburg
155		2.8	Widen to 6 Lanes	Edinburg / McAllen
157		1	Widen 6 lanes divided with landscaped median	McAllen
158	1802-02-008	1.746	Widen to 6 Lanes	McAllen / Pharr
160		0.7	Widen to 4 Lane	Donna
161		3.9	Widen to 6 lane divided	McAllen / Pharr
163		2.3	Widen to 4 Lane	Weslaco
166	3627-01-002	0	Toll improvement being a 4 lane controlled access facility	HCRMA
171	0921-06-291	4	Construct 4 lane urban roadway	CCRMA
174		1.4	Raised median, sidewalks, pavement overlay.	TxDOT
175		0.8	Install raised median	TxDOT
176		0.9	Widen to 4 Lane	Weslaco
178		0.5	Widen to 4 Lane	Edinburg

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2045 MTP ID	CSJ #	Project Length (Mile)	Project Description	Project Sponsor
183		1.4	Widen to 4 Lane	Weslaco
185		0.3	Widen to 4 Lane Divided	Weslaco
188		0.85	Widen to 4 Lane	McAllen
190		2.5	Widen to 4 lane divided	Weslaco
192		0	Expansion from a 4-lane to 6-lane controlled access toll facility (constructing an additional 2-lanes)	HCRMA
192		0	Expansion from a 4-lane to 6-lane controlled access toll facility (constructing an additional 2-lanes)	HCRMA
193	0921-02-434	1.25	Widen to 4 lane curb and gutter rd	Pharr
194	0921-02-435	1.25	Widen to 4 lane curb and gutter rd	Pharr

MTP Project List

As the RGVMPO carries forward the important work of three previously separate metropolitan planning organizations, the RGVMPO 2045 MTP update includes a broad range of active transportation projects from around the RGVMAB. Upon adoption of the 2045 MTP, the RGVMPO TAC will use the scoring criteria found in **Chapter 7** of the 2045 MTP to prioritize projects that will best meet national, state and regional goals and targets in order to improve the transportation system. The scoring criteria was developed through an iterative discussion between the RGVMPO staff and the TAC to both leverage the technical expertise embodied in the TAC and reference performance criteria and regional goals. This resulted in a robust scoring process for vetting and promoting projects geared to contribute towards meeting the targets for the regional transportation system.

Below in **Table 4-10**, all active transportation projects from the RGVMPO 2045 MTP project list have been identified based on funding category and project description.

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Table 4-10: 2045 MTP Active Transportation Projects

2045 MTP ID	Highway	From	To	Project Description	Project Phase	CSJ	Project Sponsor	Year of Expenditure Dollars (YOE)	Year/MTP Stage
2	CS	B Metro Eastside Transfer Station	At Jose Colunga Jr & Billy Mitchell	Construct Bus Facility		0921-06-304	City of Brownsville	$812,862	2020
5	CS	On Stuart PL Rd, 0.18 MI N of Primera Rd	FM 2994/Wilson Rd	Construction of 1.2mi of ADA-accessible 5 to 6 foot wide sidewalk	C,E	0921-06-311	City of Primera	$578,412	2020
9	Pharr Comprehensive Pedestrian Safety Wellness Plan	City limits	City limits	Planning study for new construction pedestrian safety improvements	TAP	0921-02-389	Pharr	$254,000	2020
10	Vision Zero Planning Study	City limits	City limits	Vision Zero Planning Study	TAP	0921-02-390	McAllen	$150,000	2020
15	Loop 499	Rio Hondo Road	FM 106 (Harrison Ave)	Construction of 1.48 mi of ADA accessible 6 ft wide sidewalks	C,E	0921-06-312	City of Harlingen	$544,711	2021-2024
17	VA	Cano St.	Freddy Gonzalez	Installation of solar powered lighting along the Cano walking trail	TAP	0921-02-392	Edinburg	$534,400	2021-2024
30	VA	Southmost Nature Trail, from FM 1847	Alameda Dr./Monsees Rd	Construct 10' concrete trail	C	0921-06-289	City of Brownsville	$6,968,000	2021-2024
31	CS	On West Rail Trail, From Palm Blvd @ Former Rail Line	I-69E SB Frontage Road, W. of Old Alice Road	Construct Multimodal Facility	E	0921-06-293	CCRMA	$1,000,000	2021-2024
34	VA	Southmost Nature Trail Phase, from Manzano St	La Posada Dr.	Construct 10' concrete trail	C, E	0921-06-280	City of Brownsville	$375,000	2021-2024
36	VA	2 Mi North of FM 511/FM 1847 int.	Along Canal, .7 mi E, .38 mi N, 0.3 mi W	Construct 10' Hike and Bike Trail between Brownsville and Los Fresnos	C	0921-06-322	City of Brownsville	$999,080	2021-2024
41	SH 107	Louisiana St.	Hooks E. Hodges Rd.	Reconstruct to 4 lanes C&G and add ADA sidewalk	C	0342-03-037	TxDOT	$10,185,301	2021-2024
47	VA	Canton Rd & Jackson Rd (Edinburg)	Bicentennial H/B & Wisconsin (McAllen)	Jackson Rd Hike & Bike Project Phase II	TAP	0921-02-431	McAllen / Edinburg	$2,753,775	2021-2024
48	VA	City of Pharr	City of Alamo	PSJA Tri-City Pedestrian Safety Improvements - New Construction Safety Improvement	TAP	0921-02-391	Alamo / San Juan / Pharr	$2,286,000	2021-2024
49	VA	Donna Sidewalk Project	S. International Blvd.	Rehabilitation of deteriorated sidewalks and construction of new sidewalks	TAP	0921-02-393	Donna	$340,741	2021-2024
55	VA	City Pharr	City Alamo	PSJA Tri-City Ped Improvement Phase II	TAP	0921-02-432	Pharr / San Juan / Alamo	$2,196,840	2021-2024
56	VA	Within Hidalgo County	0	RGV B-Cycle Bikeshare	TAP	0921-02-429	LRGVDC	$544,000	2021-2024
57	VA	Within Hidalgo County	0	Hidalgo County Active Mobility Plan	TAP	0921-02-430	Valley Metro	$330,000	2021-2024
59	VA	Phase 1 terminus, 1 Mile North	0.38 miles west, 0.1 miles north	Construct 10' Hike and Bike Trail between Brownsville and Los Fresnos	C	0921-06-324	City of Brownsville	$999,080	2021-2024
60	Mesquite St	Interior Roads at Olmito Townsite	FM 1732	Construct 5' concrete sidewalks	C & E	0921-06-326	Cameron County	$418,243	2021-2024
63	VA	On W side of FM 1847, Henderson Road	First Street	Construct sidewalk on west side of FM 1847	C	0921-06-325	City of Los Fresnos	$412,608	2021-2024

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2045 MTP ID	Highway	From	To	Project Description	Project Phase	CSJ	Project Sponsor	Year of Expenditure Dollars (YOE)	Year/MTP Stage
79	VA	Interior Roads at Las Palmas Mobile Estates	FM 802	Construct 5' concrete sidewalks	C & E	0921-06-327	Cameron County	$315,925	2021-2024
109	Dana Road	FM 802	FM 3248	Widen roadway and add sidewalks	E	0921-06-330	City of Brownsville	$517,440	2025-2030
115	West Rail Trail	West Blvd on Palm Blvd @ Rail Line	I-69E SB Frontage Road, W. of Old Alice Road	Construct Multimodal Facility	C, E	0921-06-293	CCRMA	$6,900,000	2025-2030
125	Los Fresnos Hike and Bike Trail	Circles the City of Los Fresnos	0	Establish Hike and Bike Trail	C	0921-06-334	City of Los Fresnos	$3,511,436	2025-2030
140	West Blvd	Palm Blvd.	US 281 / Boca Chica Blvd	Construct Trail	C		CCRMA	$1,945,500	2025-2030
145	Dana Road	FM 802	FM 3248	Widen roadway and add sidewalks	C		City of Brownsville	$13,618,176	2025-2030
174	Billy Mitchell Blvd FM 2519	SH 4	Jose Colunga Street	Construct raised median, sidewalks, pavement overlay.	C	0487-01-015	TxDOT/ Brownsville	$1,920,000	2031-2036
186	Kennedy	Ware Road (FM 2220)	Bentsen Rd	2 lane divided with bike lanes			McAllen	$3,562,220	2031-2036
222	Palo Alto Hike and Bike Trail	Palo Alto Battlefield National Historical Park	Eco Tourism at Laguna Vista	Construct Hike and Bike trail			CCRMA	$8,948,000	Unfunded

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APPENDIX A

DESIGN GUIDELINES

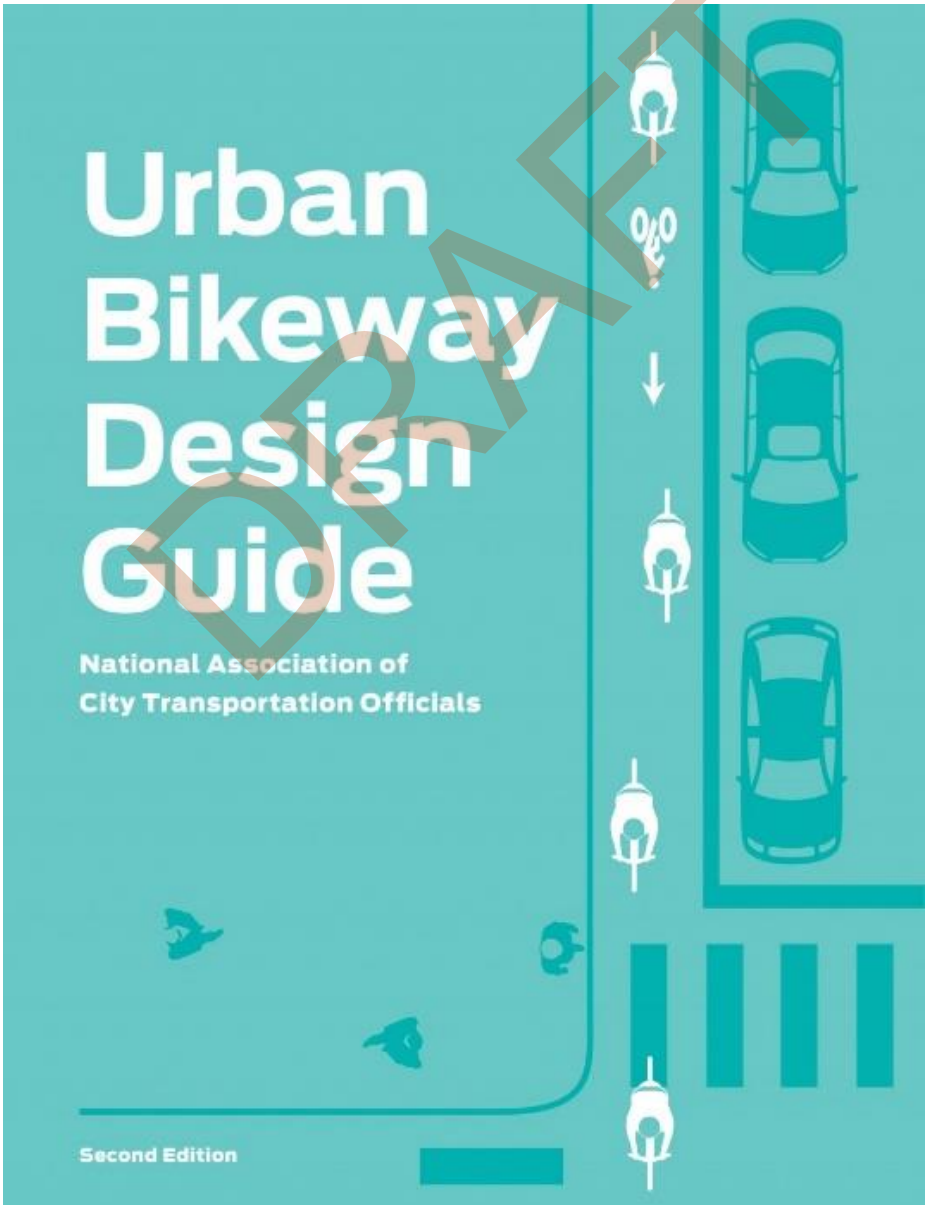
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These design guidelines include information about bicycle user types, the various kinds of bicycle and pedestrian facilities, and how these facilities can be applied to example scenarios in the RGVMAB to solve issues in the existing active transportation network.

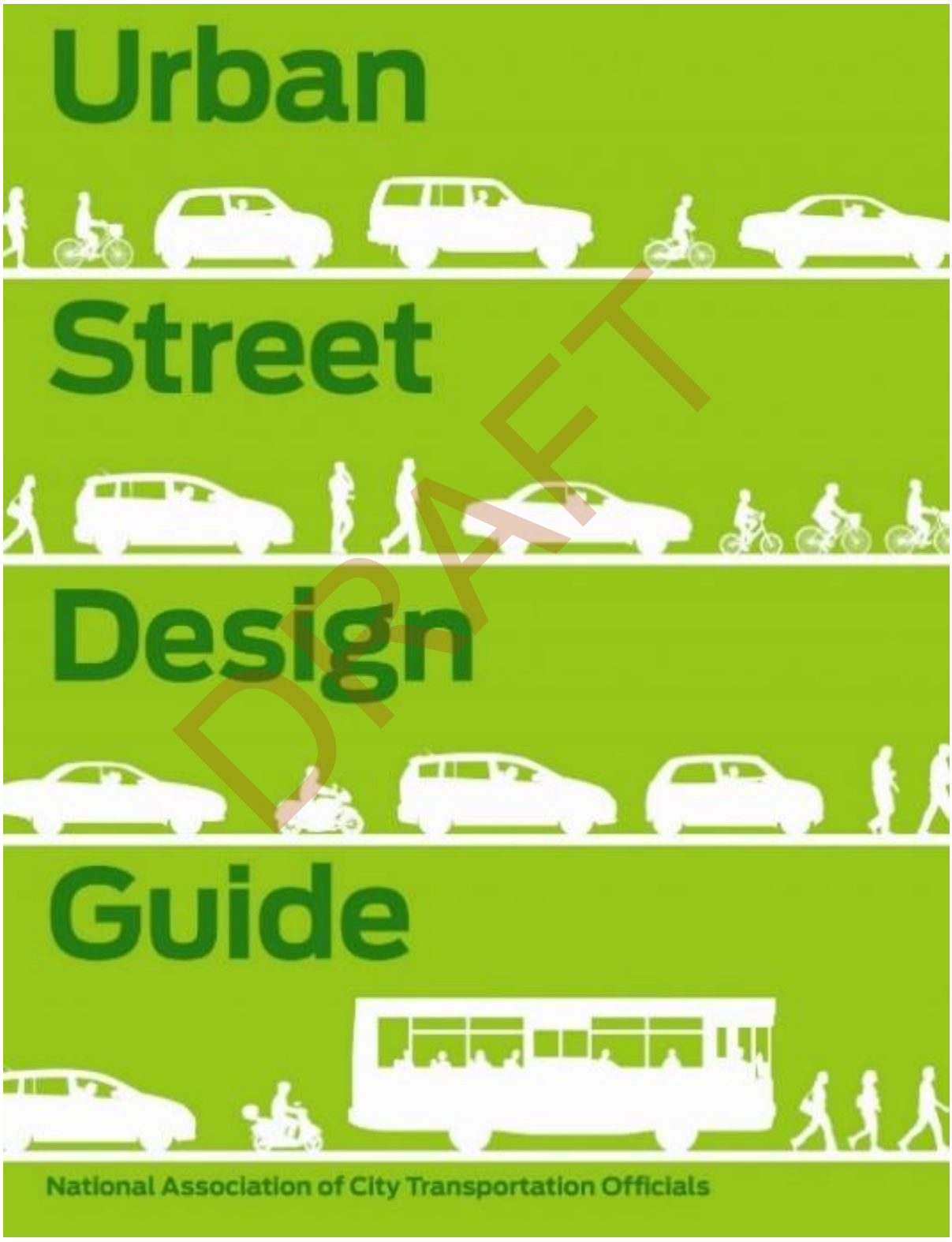
INTRODUCTION

The following sections describe in detail the various types of active transportation facilities that can be implemented to create a connected and complete bicycle and pedestrian network, as well as the types of users who will utilize these facilities. Detailed information is provided to help entities determine where and when to install these facilities. These design guidelines are then applied to example scenarios in the RGVMAB.

The development of these typologies and design guidelines was supported by information gathered from a number of different sources, including the "Four Types of Cyclists" report from the City of Portland, the National Association of City Transportation Officials (NACTO), the American Association of State Highway and Transportation Officials (AASHTO), and the Federal Highway Administration (FHWA)'s PEDBIKESAFE website.



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Guide for the Development of Bicycle Facilities

2012 • Fourth Edition

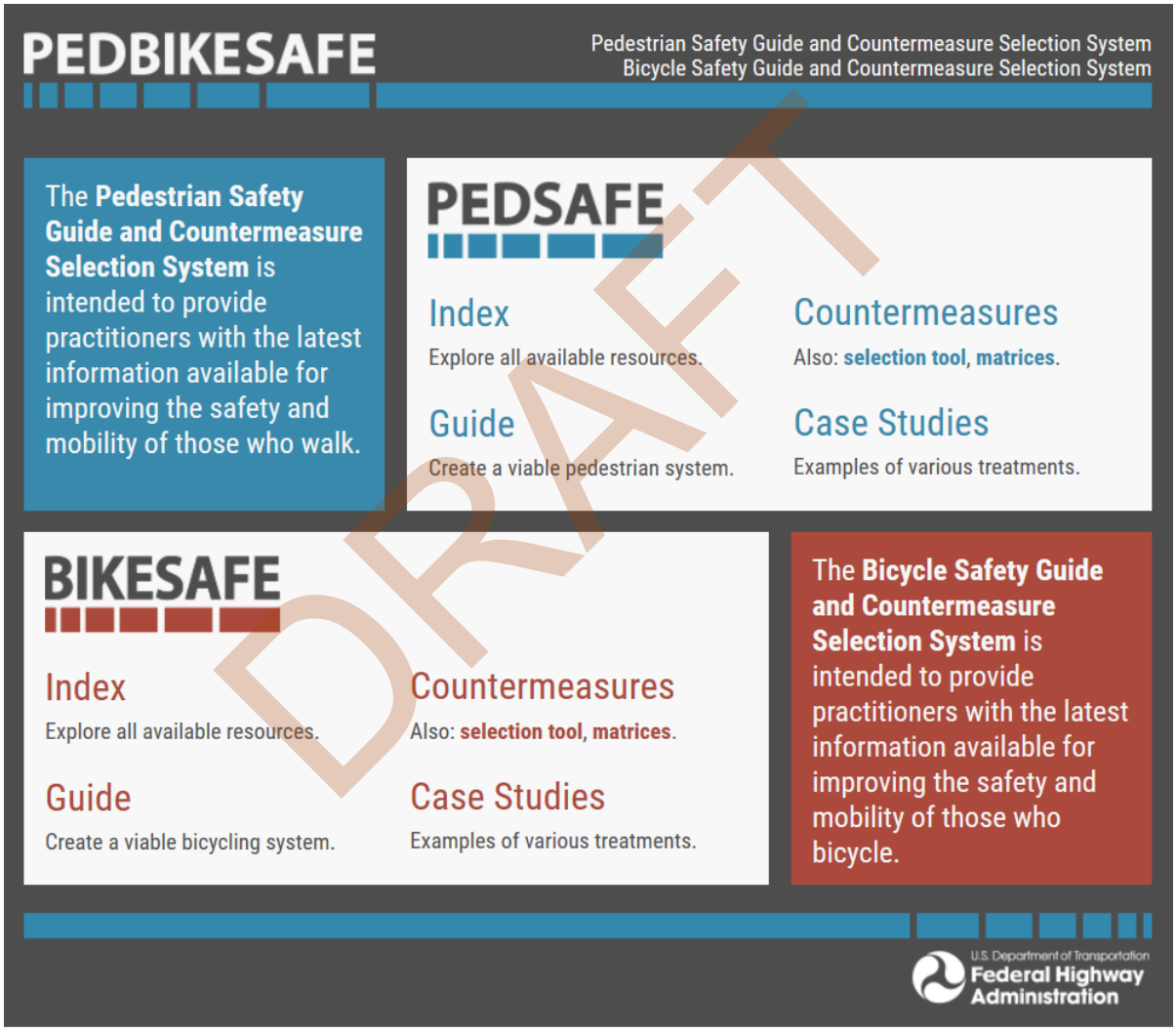








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PEDBIKESAFE
Pedestrian Safety Guide and Countermeasure Selection System
Bicycle Safety Guide and Countermeasure Selection System
The Pedestrian Safety Guide and Countermeasure Selection System is intended to provide practitioners with the latest information available for improving the safety and mobility of those who walk.
PEDSAFE
Index
Explore all available resources.
Countermeasures
Also: selection tool, matrices.
Guide
Create a viable pedestrian system.
Case Studies
Examples of various treatments.
BIKESAFE
Index
Explore all available resources.
Countermeasures
Also: selection tool, matrices.
Guide
Create a viable bicycling system.
Case Studies
Examples of various treatments.
The Bicycle Safety Guide and Countermeasure Selection System is intended to provide practitioners with the latest information available for improving the safety and mobility of those who bicycle.
U.S. Department of Transportation
Federal Highway Administration

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BICYCLE USER TYPES

Strong and Fearless

Description:

"Strong and fearless" bicyclists are highly experienced and ride their bikes on a regular basis. In addition, they have experience with and are comfortable riding on roadway networks, even those without designated bicycle facilities or on which bicycle facilities provide little-to-no separation from automobile traffic. Strong and fearless bicyclists are often deeply engaged in the public participation process when projects impact the cycling environment. Strong and fearless bicyclists are more likely to commute by bicycle in addition to riding for recreational purposes.

Comfort Level



Enthusiastic and Confident

Description:

"Enthusiastic and confident" bicyclists are moderately experienced and ride their bikes on a semi-regular basis. In addition, they have some experience with and are somewhat comfortable riding on roadway networks, as long as there are designated bicycle facilities, particularly on the roadways that have higher speed limits and more vehicular traffic. Enthusiastic and confident bicyclists may sometimes engage in the public participation process when projects impact the cycling environment. Enthusiastic and confident bicyclists may sometimes commute by bicycle when comfortable bicycle facilities are present but are more likely to ride for recreational purposes or for casual travel.

Comfort Level



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Interested but Concerned

Description:

"Interested but concerned" bicyclists are somewhat experienced and may ride their bikes from time-to-time. In addition, they have little-to-no experience with and are not comfortable riding on roadway networks unless there are designated and protected bicycle facilities, or unless the roadways have lower speeds and low levels of automobile traffic (for example, in residential areas). Interested but concerned bicyclists are unlikely to engage in the public participation process when projects impact the cycling environment. Interested but concerned bicyclists are highly unlikely to commute by bicycle and are most likely to ride for recreational purposes only, or to make short trips between nearby destinations when they feel that the cycling environment is safe and comfortable.

Comfort Level



No Way, No How

Description:

"No way, no how" bicyclists generally have little-to-no experience and rarely ride a bike, if ever. They are unlikely to own a bike and might not have reasonable access to bike rentals. People with no interest in bicycling are highly unlikely to ride a bike on a roadway, even if there are designated and protected bicycle facilities, and are even unlikely to ride on facilities that are separated from the roadway network entirely, such as Trails or Shared Use Paths. People with no interest in bicycling are highly unlikely to engage in the public participation process when projects impact the cycling environment and might only engage if it is to express opinions against bicycle facilities or against cycling in general.

Comfort Level

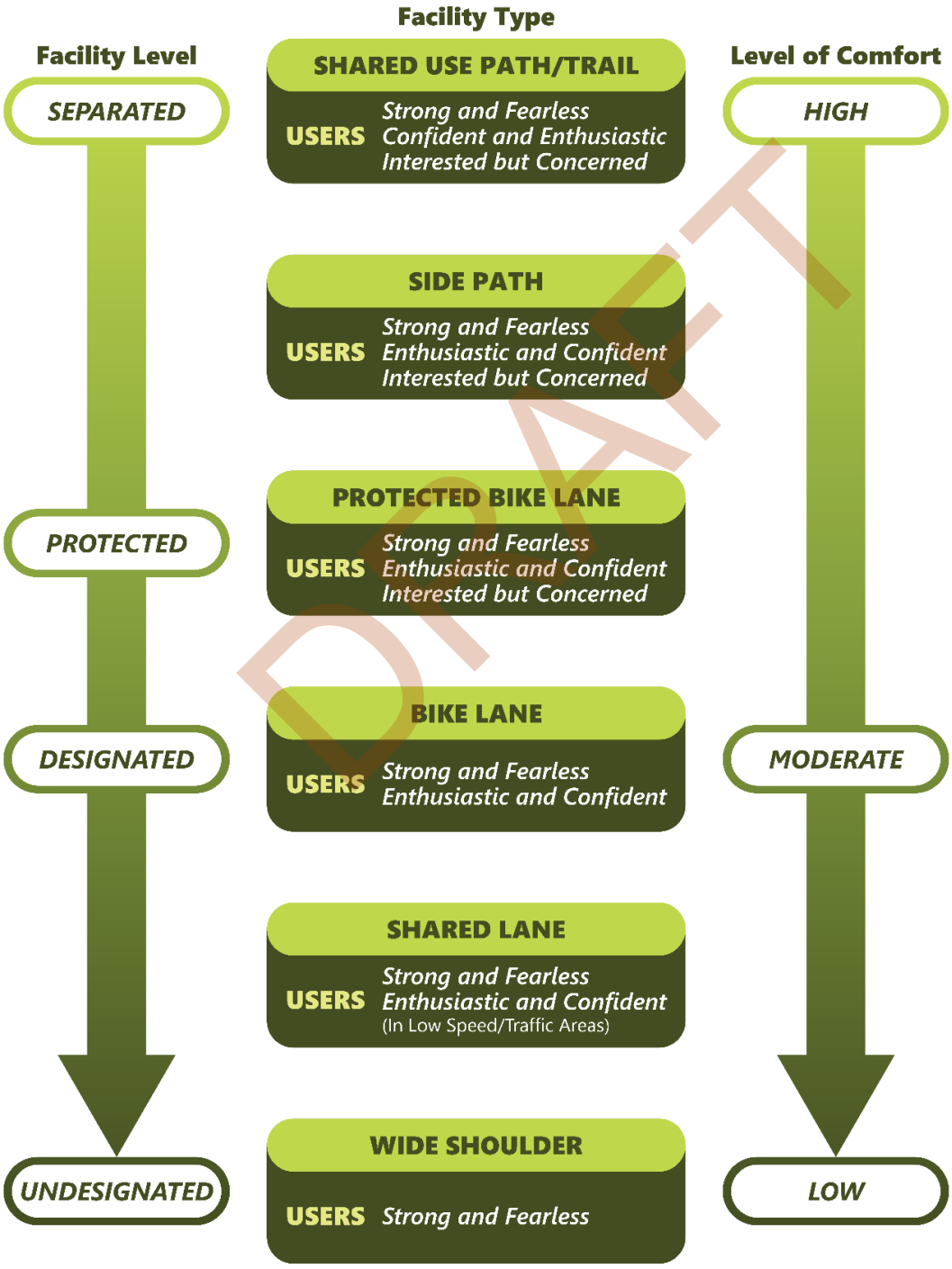


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BICYCLE FACILITY TYPES

Bicycle facilities exist in a hierarchy based on how they relate physically to the existing roadway network and how comfortable they are for potential users. **Figure A-1** illustrates this hierarchy. This section provides detailed information about these facilities, which can be used to help determine when implementation of each is most appropriate.

Figure A-1: Facility Type and Comfort Level



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Shared Use Path/Trail



Description:

Shared Use Paths (also known as Multi-Use Paths) and Trails are facilities that support both bicycle and pedestrian use, as well as other forms of active transportation. These facilities are completely separated from roadway networks and may instead follow corridors along waterways and irrigation channels, parks, unused railways, natural areas and greenbelts, and utility rights-of-way.

Design Standards/Specifications:

- The recommended minimum paved width for a two-directional Shared Use Path or Trail is 10 ft with a maximum of 14 ft
- A width of 8 ft may be used for a short distance due to physical constraint/right-of-way limitations
- Pathways with heavy peak hour and/or seasonal volumes should use a centerline stripe or multiple texture materials to clarify the direction of travel and organize pathway traffic

Benefits:

Because these types of facilities are completely separated from roadway networks, they provide all types of users the highest levels of comfort and safety. Shared Use Paths and Trails are generally wide enough to allow for higher volumes of active transportation users, providing enough space for all types of users and people with all levels of ability to use the facility at the same time.

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Considerations:

These types of facilities may be appropriate for creating connections between various urban areas on a regional scale, or between urban areas and designated recreational attractions such as state parks and natural areas. These facilities may be paved with fixed materials such as concrete or asphalt, or loose materials such as crushed granite.

Facility Level



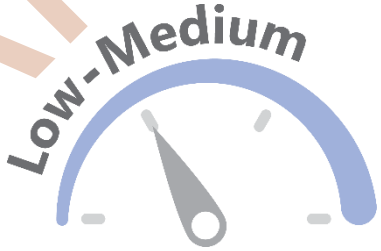
Relative Cost



Comfort Level



Ease of Implementation



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Side Path



Description:

Side Paths are similar to Shared Use Paths/Trails because they are intended to be used by both bicycles and pedestrians, as well as by users of other types of active transportation. The primary difference is that Side Paths are located adjacent to roadways.

Design Standards/Specifications:

- Side paths are most commonly designed for two-way travel accommodated in a single treadway, though multiple treadways are possible
- The minimum width for a two-directional side path is 10 ft, with the desired width of 12-14 ft

Benefits:

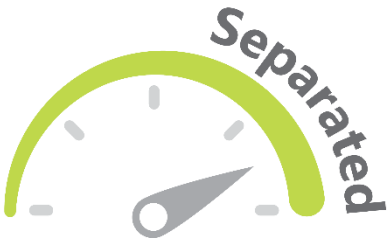
Like Shared Use Paths/Trails, Side Paths offer a higher level of safety to users because they are not situated within the streetscape. This increased safety encourages all types of users and people with all levels of ability to use the facility. Though Side Paths are not situated within the streetscape, their proximity to the roadway network allows users to take advantage of its connectivity.

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Considerations:

Side Paths may connect to Shared Use Paths/Trails that diverge from the roadway. They are suitable for streets that have heavy traffic, high speed limits, and few driveway intersections, and are appropriate where bicycle and pedestrian interactions won't create continual conflict. Additionally, Side Paths provide two-way bicycle flow on one side of the adjacent roadway.

Facility Level



Relative Cost



Comfort Level



Ease of Implementation



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Protected Bike Lane



Description:

Protected Bike Lanes, also known as Cycle Tracks, are facilities that are similar to Side Paths because they run along the sides of roadways but are different from Side Paths in that Protected Bike Lanes are exclusively designated for bicycles. Protected Bike Lanes can be located at the street level, the sidewalk level, or an intermediate level, but are always protected from automobile traffic and distinct from sidewalks. Protected Bike Lanes can be either one-way or bi-directional.

Design Standards/Specifications:

- At the street level, Protected Bike Lanes are separated from automobile lanes by physical barriers such as medians or bollards, and the width of the barrier space is recommended to be a minimum of 3 ft
- At the sidewalk level, Protected Bike Lanes are separated from automobile lanes by physical barriers and are distinguished from the sidewalk using colored or textured pavement
- Bike lane markings should be painted at the start of the track and at intervals along the facility
- Depending on context, painted markings or physical barriers can separate the Protected Bike Lane from adjacent facilities
- For one-way facilities, the recommended minimum width is 5 ft to 7 ft
- For bi-directional facilities, the recommended minimum width is 12 ft, with allowances for 8 ft in constrained conditions

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Benefits:

Protected Bike Lanes improve the actual and user-perceived safety for bicyclists by protecting their cycling space from motor vehicles. This can also encourage a wider variety of users to ride on this type of facility. In addition, the separation between the Protected Bike Lane and the street space helps prevent cars from parking in the cycling space.

Considerations:

Protected Bike Lanes are suitable for streets with parking lanes and high parking demand, high traffic volumes and speeds, and high bicycle volumes. The fact that Protected Bike Lanes can be either one-way or bi-directional means that the direction of bicycle flow can be controlled regardless of the direction of flow for the adjacent automobile traffic.

Facility Level



Relative Cost



Comfort Level



Ease of Implementation



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Bike Lane





Description:

Bike Lanes are on-street bicycle facilities that are designated using pavement markings, striping, paint, and signage. Bike Lanes are usually placed on the outermost edges of a street and usually have one-way flow in the direction of the adjacent automobile traffic but can also run contraflow. Bike Lanes can also be buffered from automobile traffic by either a buffer space or by physical barriers such as bollards.

Design Standards/Specifications:

BIKE LANE

- A minimum width of 6 ft is recommended when the Bike Lane is situated against a curb or adjacent to a parking lane
- Bike Lane markings should be used to designate the cycling space
- A 6-8 inch solid white line should be used to mark the boundary of the Bike Lane adjacent to the automobile lane, and a 4 inch solid white line should be used to mark the boundary
- Gutter seams, drainage inlets, and utility covers should be flush with the ground to prevent conflicts with bike tires

BUFFERED BIKE LANE

- The typical width for a buffered Bike Lane is 8 ft - 5 ft for the bike lane plus a 3 ft buffer
- The buffer may be less than 3 ft if vertical delineators such as bollards or armadillos (plastic bumps placed at regular intervals) are used
- Bike lane markings should be used to designate the cycling space
- The buffer should be marked with two solid white lines, with diagonal hatching or chevron marks on the interior if the buffer is 3 ft or wider
- The buffer boundary lines should be solid if crossing is discouraged and dashed if crossing is permitted

Benefits:

BIKE LANES

Bike Lanes create a designated space for bicyclists to ride that is separate from the space where automobiles travel, which allows for an increased sense of safety for the Bike Lane users. These facilities also create some level of predictability for bicycle and automobile interactions and movements.

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BUFFERED BIKE LANES

Buffered Bike Lanes can further increase the perception of safety for its users by adding more space between bicyclists and automobile traffic and at times adding a physical barrier of bollards, which can encourage a wider variety of users to ride on this type of facility.

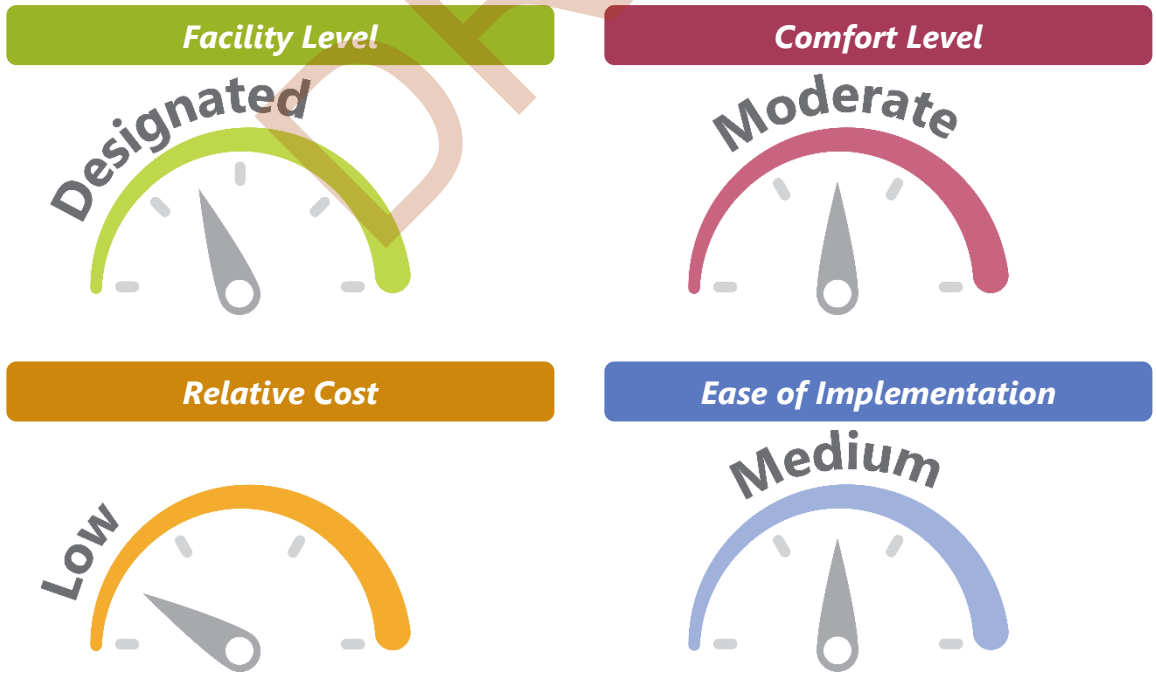
Considerations:

BIKE LANES

Bike Lanes have the most positive impact on streets with average daily automobile traffic levels higher than 3,000 vehicles, streets with posted speed limits between 25-35 miles per hour, and streets with high transit vehicle volumes. Although Bike Lanes are one of the easier bicycle facilities to implement, they are on the lower level of comfort for potential users. In addition, because unbuffered Bike Lanes are on-street facilities and have no physical barrier between them and automobile lanes, it is easy for gravel and other forms of debris to build up in the cycling space, so it is crucial to maintain these facilities as clean spaces for the sake of users' safety.

BUFFERED BIKE LANES

The use of various forms of separation can determine the flow of cyclists in and out of a buffered Bike Lane. For example, the use of bollards or armadillo bumps would allow for cyclists to enter or exit the facility to make turns more freely than the use of a median would. Buffered Bike Lanes generally have one-way flow, and there is usually one lane on each side of the street with the directional flow of each lane matching that of the adjacent automobile lanes. This type of facility is appropriate anywhere a standard Bike Lane is being considered, places where existing paving allows for more substantive bicycle facilities, and on streets with high speeds and traffic/truck volumes. Where street parking turnover is high, consider placing the buffer between the parking lane and the Bike Lane.



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Shared Lane



Description:

Shared Lanes are travel facilities that are designated for both bicycle and automobile travel within the same shared space on a roadway. This facility type is often used when there is a need or demand for bicycle travel on a roadway facility, but the facility width/right-of-way is not sufficient for designated bicycle lanes.

Design Standards/Specifications:

- The Shared Lane should be designated by a specific pavement marking, also called a "sharrow," which includes a bicycle situated below two upward-facing chevron markings
- Shared Lane markings should not be used on roadway shoulders, in designated bike lanes, or to designate bicycle detection at signalized intersections
- Lateral placement of the marking within the travel lane is critical to encourage automobiles to use safe passing behavior and for bicyclists to avoid the "door zone" when there is on-street parking adjacent to the Shared Lane

Benefits:

One of the main benefits of Shared Lanes is that they provide intentional, designated space for bicyclists at a relatively low cost to the entity installing the facility. In addition, the sharrow marking alerts automobiles to the potential presence of bicyclists and communicates the fact that bicyclists have a right to occupy that facility.

Considerations:

Shared Lanes are suitable on streets with low traffic volumes/speeds, but not ideal where speeds and volumes are higher. These facilities typically incorporate sharrow pavement markings in addition to bikeway signage to provide additional clarity for users. It is important to note that Shared Lanes indicate

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where bicyclists may likely be found, but do not necessarily confine bicyclists to a rigidly defined path. Because these types of facilities mix bicyclists with automobile traffic, Shared Lanes are less likely to be used by inexperienced or unconfident bicyclists.

Facility Level



Relative Cost



Comfort Level



Ease of Implementation



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Wide Shoulder



Description:

AASHTO defines shoulders as "the portion of the roadway contiguous with the travel way for accommodation of stopped vehicles, for emergency use." A Wide Shoulder is a facility that can accommodate bicyclists if it is adequate in width and encounters few driveways or other crossings.

Design Standards/Specifications:

- The minimum of 4 ft wide to accommodate bicycle travel
- An additional buffer of 1.5-4 ft wide is optional
- On roadways with guardrails, curbs, or other roadside barriers, the recommended minimum shoulder width is 5 ft

Benefits:

Wide Shoulder facilities are suitable for rural areas, and implementation needs are often minimal as these facilities already exist along many highways.

Considerations:

Wide Shoulders are appropriate on streets with high speeds and relatively low bike demand/use, as this type of bicycle facility is used principally by experienced bicyclists. The implementation of wide shoulders should correspond with resurfacing efforts to ensure the longevity of the initial investment. In addition, bicycle facilities on Wide Shoulders should remain clear of debris to maintain a safe cycling space. For additional safety, rumble strips can be installed to alert automobile drivers if they begin veering off the road.

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Facility Level



Relative Cost



Comfort Level



Ease of Implementation



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PEDESTRIAN FACILITY TYPES

Sidewalk



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Description:

Sidewalks are the standard pedestrian facilities that establish the overarching pedestrian network. Sidewalks are intended for pedestrian use only and are meant to serve people of all ages and abilities. These facilities are frequently placed along roadways but can also be installed in other locations where it is beneficial to designate the pedestrian environment.

Design Standards/Specifications:

- The minimum desired width for a sidewalk is 5 ft, excluding any attached curb
- The desired width outside a core urban area is 6-8 ft
- The desired width in a core urban area is 10 ft or wide enough to provide desired volumes
- Ideally, sidewalks should be separated from the roadway by an unpaved buffer
- If the facility must be less than 5 ft wide, passing spaces of at least 5 ft wide should be provided at reasonable intervals
- If the facility is flush against the curb, wider sidewalk widths of 8-10 ft are desired

Benefits:

Sidewalks provide a designated space for pedestrians and help to limit their interactions with motor vehicles and other forms of transportation, which increases the real and perceived safety of users. In addition, a well-developed sidewalk network provides users with connectivity within and between urban areas and neighborhoods. Additionally, Sidewalks provide access to transit and accessible travel routes for persons who are mobility impaired.

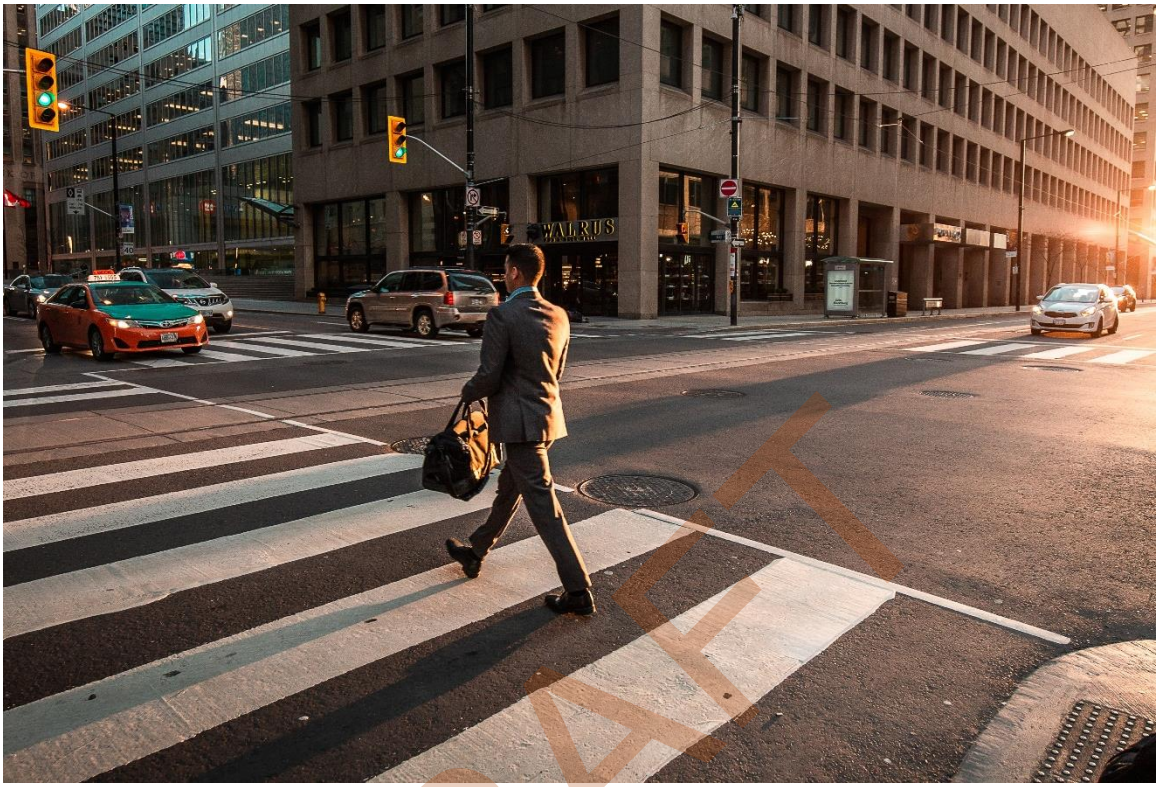
Considerations:

The proximity of the sidewalk to an adjacent roadway should be determined based on the size, level of traffic, and speeds of the roadway. For example, larger roadways with higher levels of traffic and faster speeds can present potential dangers for pedestrians, so it may be appropriate for adjacent sidewalks to have a buffer space between them and the roadway to further separate pedestrians from automobile traffic. In addition, the pedestrian environment of these facilities can be improved by including, if possible, trees or other vegetation in the buffer space, lighting to provide additional visibility, safety, and comfort at night, and benches to provide users with opportunities to rest.

Relative Cost	*Ease of Implementation*
	

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Crosswalk



Description:

Crosswalks are pedestrian spaces that designate the appropriate locations for pedestrians to cross roadways and are typically located at the intersections of two or more roadways.

Design Standards/Specifications:

- Crosswalk width should reflect the width of the sidewalks that approach the intersection, but should be no less than 6 ft wide
- The connecting of sidewalks to crosswalks at intersections frequently creates changes in grade, which must be addressed using ADA-compliant ramps or other ADA-compliant features
- Crosswalks are delineated using either pavement markings or paving materials that differ from the pavement of the roadway to create visual contrast so that automobile drivers and pedestrians alike are made aware of these crossing locations
- Crosswalks should include electronic signage that designate when pedestrians are permitted to cross (symbolized by a white pedestrian symbol), when they are not permitted to cross (symbolized by a red hand symbol), and how much time is remaining before the signal returns to a red hand symbol (symbolized by a flashing red hand symbol and a countdown).

Benefits:

Crosswalks provide a designated space for pedestrians to cross a roadway and draw the attention of automobile drivers to the potential presence of pedestrians. In addition, Crosswalks provide crucial linkages within the pedestrian network to create access and connectivity for users.

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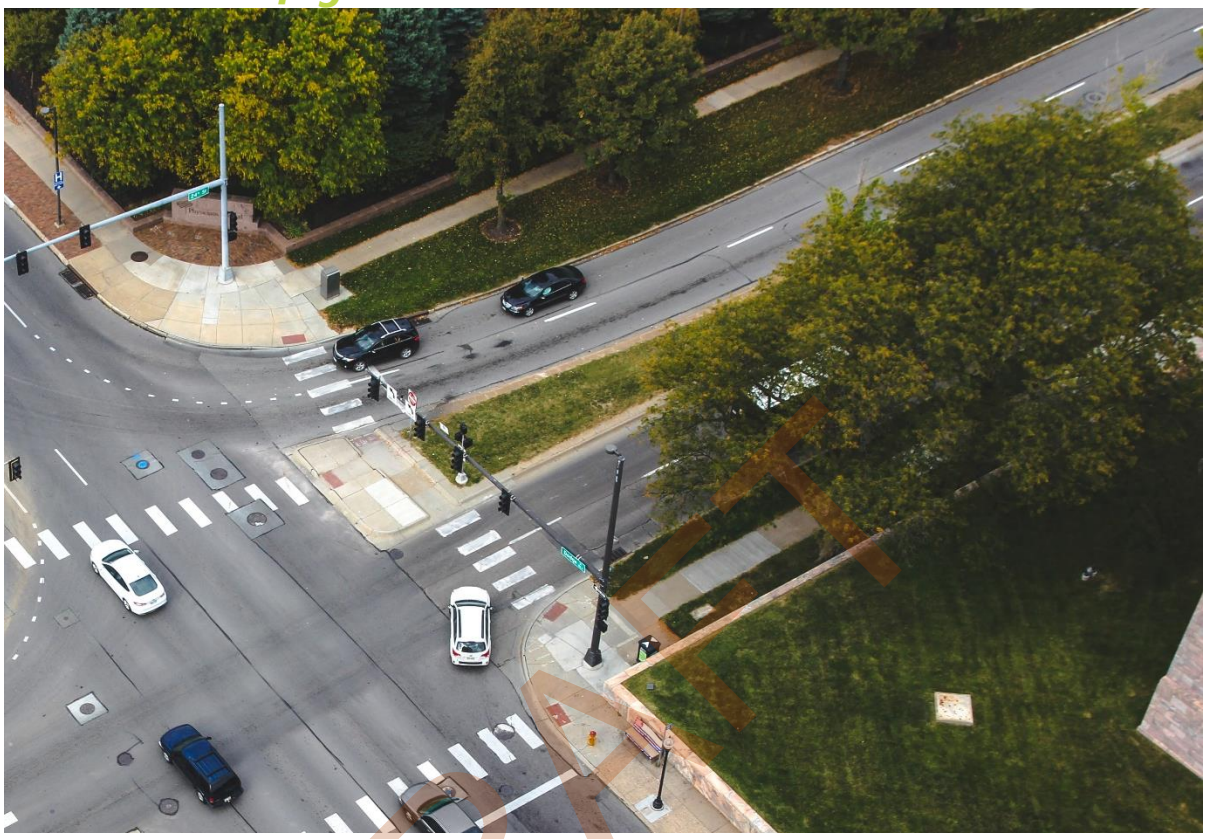
Considerations:

The frequency of crosswalks should increase in areas where pedestrian volumes are higher. In addition, crosswalks should be highly visible to both pedestrians and automobile drivers, and pedestrians should experience a short wait time to cross and be given adequate time to traverse the crosswalk. The crossing distance should be minimized as much as possible and, where necessary, should be broken up using pedestrian refuge islands to give pedestrians safe places to wait as they cross the road in segments.

Relative Cost	*Ease of Implementation*
	

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Pedestrian Refuge Island



Description:

Pedestrian Refuge Islands utilize median space in the midst of a crosswalk to create a safe place for pedestrians when crossing larger/wider roadways. Pedestrians can utilize this type of facility if they need space and time to wait when crossing different segments of the roadway.

Design Standards/Specifications:

- The designated pedestrian space on the island should be the same width as the connecting crosswalk at a minimum, but can also be wider
- The refuge space should be protected by some type of barrier element
- The use of curbing and planted medians clearly differentiates the pedestrian refuge space from the motor vehicle travel area
- In instances where both pedestrians and bicyclists will share the crossing and median area, additional space or parallel facilities may be appropriate

Benefits:

Pedestrian Refuge Islands increase pedestrian safety and comfort when crossing wide or busy roadways and provide a place for people to wait or rest before completing the process of crossing.

Considerations:

Pedestrian Refuge Islands can be utilized on wide, busy roadways where there is available median space, and are recommended in areas where pedestrian activity is high.

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Relative Cost



Ease of Implementation



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Mid-Block Crosswalk



Description:

Mid-Block Crosswalks provide designated pedestrian crossing space in locations between intersections along a given block.

Design Standards/Specifications:

- Automobile stop lines at the crossings are recommended to be set back 20-50 ft
- Crossings are recommended to be striped regardless of paving pattern or material to increase visibility for automobile drivers
- Pedestrian refuge islands compliment Mid-Block Crosswalks by increasing pedestrian safety
- Methods like restricting parking near the crossing or adding curb extensions help keep the area around the crossing clear and visible
- It is recommended that Mid-Block Crosswalks are accompanied by pedestrian crossing signage that includes the symbol of a pedestrian and an arrow pointing toward the crossing space
- The safety of these facilities is further increased when accompanied by flashing beacons that can either flash consistently or flash only when activated by a waiting pedestrian

Benefits:

These facilities increase the number of crossing options and the convenience of crossing a roadway. In addition, Mid-Block Crosswalks increase safety by offering a designated crossing space in locations

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where pedestrians might have opted to cross even if the facility wasn't in place in order to avoid the inconvenience of traveling to an out-of-direction intersection Crosswalk.

Considerations:

Mid-Block Crosswalks are suitable in areas with long block lengths where forcing pedestrians to cross at intersections would often require them to travel significantly out of their way to cross the road safely. They are also suitable when paired with mid-block bus stops and in locations with high pedestrian activity to and from destinations located mid-block. Places such as schools, parks, museums, waterfronts, and other major social, cultural, and economic places of interest and employment tend to generate the levels of pedestrian activity that may warrant Mid-Block Crosswalks. Because mid-block placements may not be perceived as natural crossing locations and because Mid-Block Crosswalks are less common than Crosswalks at intersections, the use of signage and even signals can help alert drivers to the presence of pedestrians crossing the road.

Relative Cost	*Ease of Implementation*
	

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Pedestrian Hybrid Beacon



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Description:

Pedestrian Hybrid Beacons (PHBs) are installed at designated crossing locations and are used to warn and control automobile traffic at the crossing when the beacons have been activated by a pedestrian. The beacons remain off and traffic can flow freely through the crossing space until a pedestrian activates the beacons by pressing a button.

Design Standards/Specifications:

- The vehicle signals on PHBs should include multiple stages of lighting/flashing that warn oncoming traffic that a pedestrian is about to cross, stop the traffic so that the pedestrian can traverse the crossing, allow automobiles to gradually proceed through the crossing after stopping, and finally proceed as normal after the beacons shut off
- These facilities are recommended to include signage that explain the stages of the vehicle signal to approaching automobiles
- The crossing space are recommended to be designated with striped pavement markings
- Similar to those included at intersection Crosswalks, the PHB facility is recommended to include electronic pedestrian signals that indicate to pedestrians when they are permitted to begin crossing, how much crossing time they have remaining, and when not to cross, as well as signage that explains these signals

Benefits:

PHBs can decrease pedestrian-automobile crashes by creating a designated and controlled crossing space in locations where it would otherwise be very dangerous for pedestrians to cross the roadway. In addition, the nature of these beacons draws the attention of automobile drivers to the presence of a waiting/crossing pedestrian and both warn and control approaching automobiles so that the pedestrian(s) can cross safely. PHBs also give pedestrians priority over vehicles by allowing users to cross very quickly after pressing the button.

Considerations:

Decisions to install PHBs should be made carefully because they give pedestrians nearly immediate priority over oncoming traffic and their cycles are unrelated to nearby traffic signal cycles. These types of facilities are most appropriate in locations where there may be demand for designated pedestrian crossings but where the roadway facility could be extremely dangerous to cross without the ability to both warn and stop traffic for the pedestrians. Such roadway facilities include those with at least three or four lanes, high traffic volumes, and higher speed limits (40 miles per hour or higher).

Relative Cost	*Ease of Implementation*
	

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Rectangular Rapid Flashing Beacon (RRFB)



Description:

Rectangular Rapid Flashing Beacons (RRFBs) can be installed at pedestrian crossings as an additional method of drawing the attention of automobile drivers to the presence of pedestrians. These facilities include pedestrian warning signage with rectangular beacons that flash at a rapid rate and with a brighter light intensity than standard flashing beacons when activated by a pedestrian.

Design Standards/Specifications:

- RRFBs should be rectangular and flash at a bright intensity at a rapid rate
- The beacons should be affixed directly to the post that holds the pedestrian crossing sign
- The crossing space should be designated with striped pavement markings
- RRFBs should be placed on both sides of the crossing and should be placed below the pedestrian crossing sign and above an arrow sign that points to the crossing

Benefits:

RRFBs provide additional safety to pedestrians crossing a roadway because they draw the attention of approaching automobile drivers to the presence of pedestrians.

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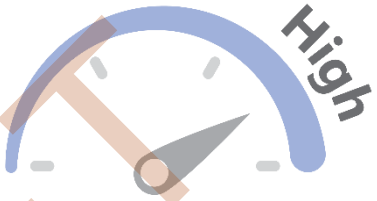
Considerations:

RRFBs are suited to pedestrian crossings on multi-lane roadways where speed limits are under 40 miles per hour. These beacons can be activated either by a pedestrian pushing a button prior to crossing the roadway, or by automated video/infrared detection. The beacons should remain unlit until activated. RRFBs can be installed with solar power to simplify installation.

Relative Cost



Ease of Implementation



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Bulbout



Description:

Bulbouts are facilities that extend the pedestrian realm further out into the streetscape as a way to shorten the distance that pedestrians must traverse when crossing a roadway.

Design Standards/Specifications:

- The width of a bulbout in any given direction should be no wider than the adjacent on-street parking, bus bay, or turn bay, so that the bulbout does not extend into automobile or bicycle lanes and impede traffic traveling through an intersection
- Bulbouts that are grade-separated from the connecting crosswalks should include ADA-compliant ramps

Benefits:

Bulbouts increase pedestrian safety by shortening the distance that pedestrians must travel to get across the roadway, increasing pedestrian visibility, and slowing turning vehicles.

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Considerations:

Bulbouts are only viable in locations where there is on-street parking, where there are bus bays for buses to pull out when making stops, or where there are automobile left- or right-turn bays. This is due to the fact that on-street parking, bus bays, and turn bays do not extend through pedestrian crossings, meaning that traffic traveling through the crossing will not be impeded by the existence of a bulbout. Bulbouts should be implemented thoughtfully, as they may reduce flexibility to make changes to the streetscape in the future. It should be noted that Bulbouts may make it more difficult for larger vehicles, such as school buses and freight trucks, to make turns at intersections.

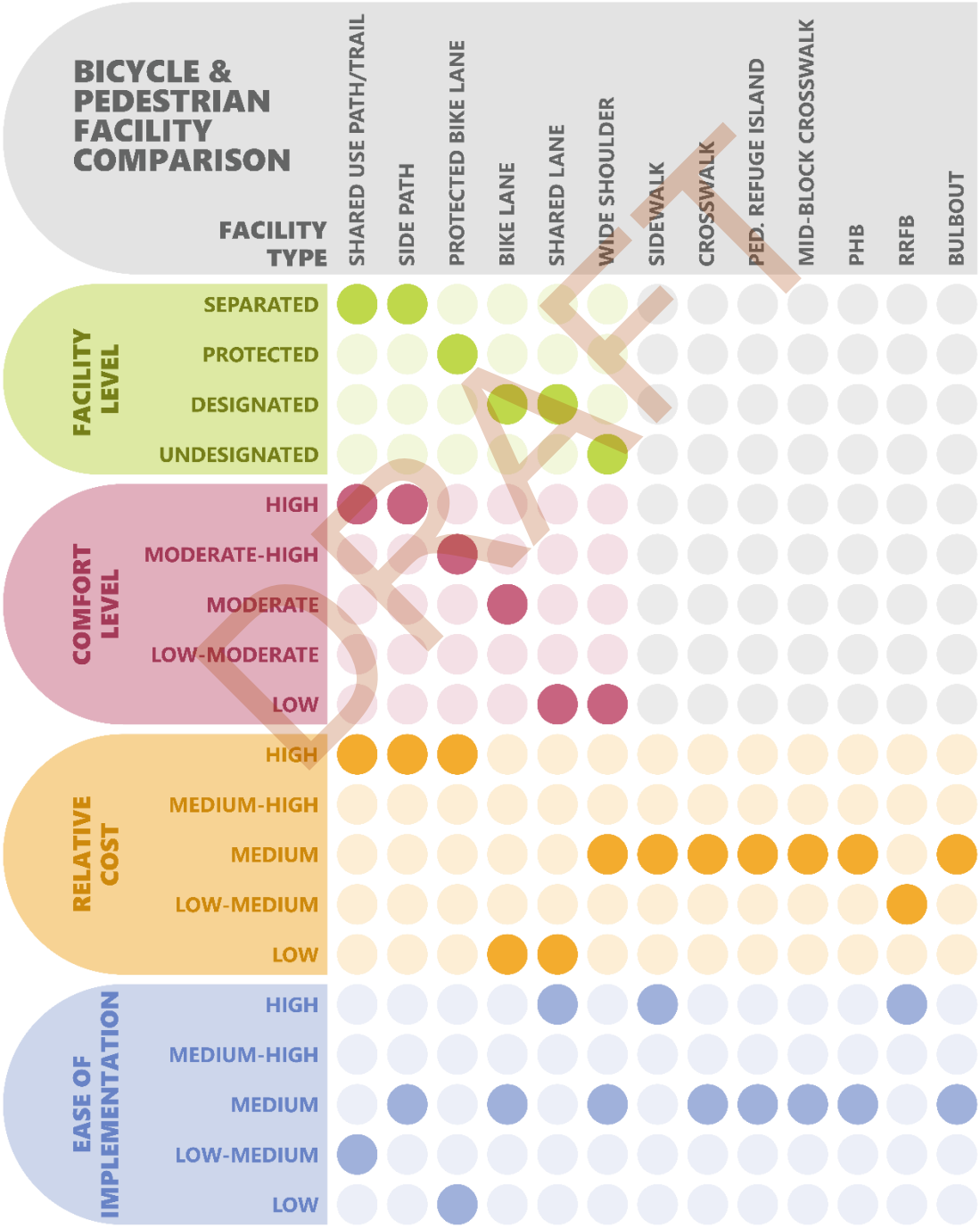
Relative Cost	*Ease of Implementation*
	

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FACILITY COMPARISON

Figure A-2 illustrates the facility level, comfort level, relative cost, and ease of implementation for each bicycle facility and the relative cost and ease of implementation for each pedestrian facility. This graphic provides a means to compare these characteristics across the various active transportation facility options to help decision makers better determine when each facility meets identified needs.

Figure A-2: Bicycle and Pedestrian Facility Comparison



CONTEXT SENSITIVE IMPLEMENTATION

The following sections describe examples of bicycle and pedestrian issues that exist in the RGVMAB's active transportation networks and provide potential solutions to mitigate or eliminate these issues and increase opportunities and safety for active transportation users. These examples can be utilized by RGVMPO to assess other points in the region's networks that could benefit from the implementation of facilities discussed in these design guidelines.

Urban Bicycle Environment

Example Issue

Figure A-3: Bicycle Issue in an Urban Environment

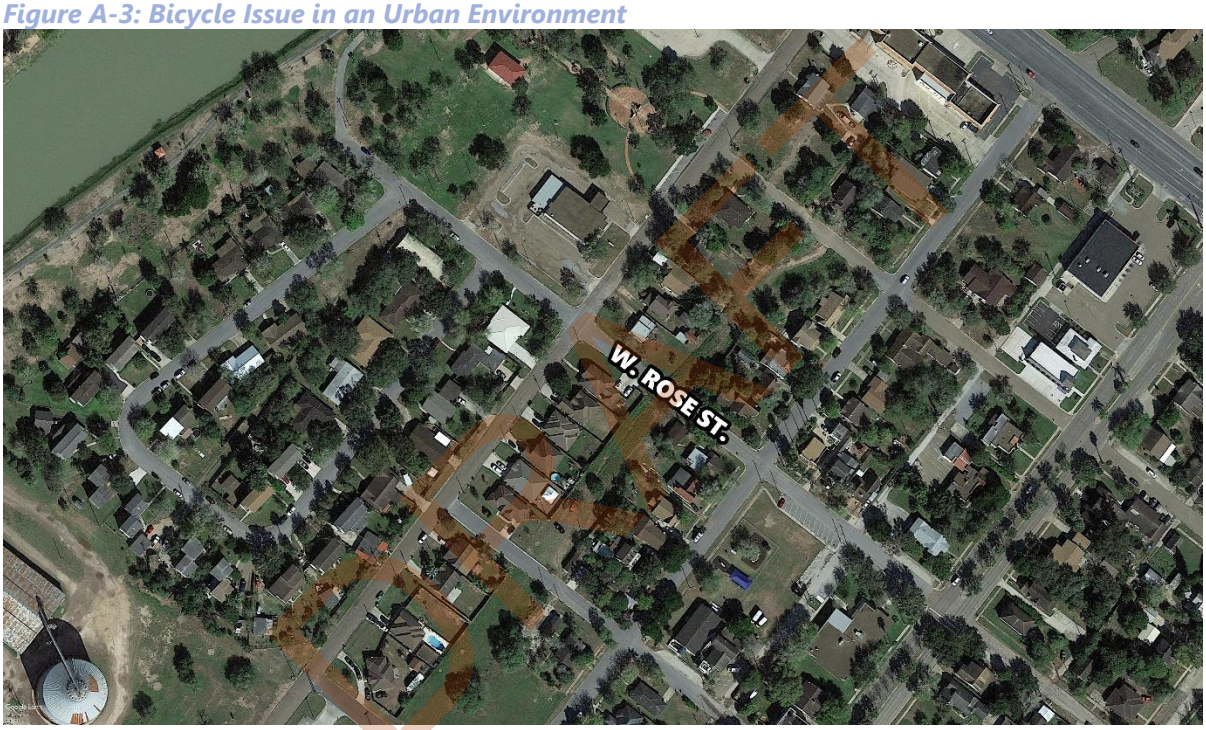


Figure A-3 shows a segment of W. Rose St. (running southeast to northwest) from Sam Houston Blvd. to its end at Heavin Park in San Benito. This segment of Rose St. has the potential to connect the bicycle lanes on Sam Houston Blvd. to the Heavin Resaca trail, but the street currently lacks any form of designated bicycle facility. Due to Rose St. being in a residential area, people may already feel comfortable riding their bicycles on it. However, people may be less likely to use Rose St. as a connector between the two other facilities because they may not realize that it offers the benefit of that connection.

Example Solution

This segment of W. Rose St. could benefit from an official shared lane designation. The residential context and low existing speed limit on this street offer an environment suitable for this type of bicycle facility. In addition, shared lanes would be relatively easy implement in this location, requiring only Sharrow pavement markings and signage designating the shared nature of the street. Implementation of shared lanes along Rose St. would improve bicycle safety and create additional benefits in the area

by creating a designated connection between the Heavin Resaca Trail/Heavin Park on the northeast side of the street and the designated bicycle lanes on Sam Houston Blvd., which is one of the primary roadways that passes through urban San Benito.

Rural Bicycle Environment

Example Issue

Figure A-4: Bicycle Issue in a Rural Environment



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Figure A-4 shows New Carmen Ave. northwest of Brownsville where it meets the entrance to Resaca de la Palma State Park. Currently, there are no designated bicycle facilities along New Carmen Ave., and because this roadway provides the only public entrance to the state park, there are currently no active transportation connections between Resaca de la Palma and the rest of the existing bicycle network in the Brownsville area. State parks have the potential to be major destinations for bicyclists, and the lack of designated connections to Resaca de la Palma may discourage people from cycling to and from the park.

Example Solution

A major connection could be made between Resaca de la Palma State Park and the existing bicycle network in Brownsville. New Carmen Ave. potentially has space to install a bicycle facility, such as paved Wide Shoulders or Side Paths, depending on further study. New Carmen Ave. runs north/south, with its southern terminus intersecting Military Rd., which runs northwest/southeast and eventually turns into Boca Chica Blvd in Brownsville. Military Rd. contains paved shoulders on both sides from west of New Carmen Ave. to Ruben M. Torres Sr. Blvd., which contains designated bicycle lanes and connects to other facilities in the existing bicycle network. These existing facilities and connections illustrate that if bicycle facilities were installed along New Carmen Ave., bicyclists could make connections from the

existing urban network in Brownsville all the way to Resaca de la Palma State Park, using New Carmen Ave. and Military Rd. as connecting routes.

Urban Pedestrian Environment

Example Issue

Figure A-5: Pedestrian Issue in an Urban Environment



Figure A-5 shows a stretch of W. Jordan Ave. in southwest McAllen. The area includes several community-centric land uses, such as the Palm View Community Center and Branch Library as well as Palm View Park, across W. Jordan Ave. from a large residential area. The photo illustrates that, along a relatively long stretch of W. Jordan Ave., there are currently no designated pedestrian crossings that would allow pedestrians to cross the street safely to travel between their homes and these community land uses. This combination of land uses implies that there is likely a high demand for children and family groups to travel back and forth between the neighborhood and the community center, library, or park.

Example Solution

To provide a safe pedestrian crossing environment for people wishing to cross W. Jordan Ave., solutions such as Pedestrian Hybrid Beacons paired with painted crosswalks could be installed at a few locations along the roadway. These facilities increase the safety of crossing pedestrians by clearly defining the crossing area, alerting the attention of drivers to crossing pedestrians, and controlling automobile traffic at the crossings.

Rural Pedestrian Environment

Example Issue

Figure A-6: Pedestrian Issue in a Rural Environment



Figure A-6 shows a stretch of Montezuma Rd. in north Harlingen. In this area, Montezuma Rd. runs next to Lee H. Means Elementary Fine Arts Academy and through a few residential neighborhoods. The photo illustrates a lack of sidewalks on either side of Montezuma Rd. This lack of a designated pedestrian space creates a safety hazard for any child, family, or resident who wants to walk between the nearby elementary school and their home because the terrain is inconsistent and pedestrians may experience close encounters with automobiles. Currently, people are either discouraged from walking altogether, or must walk in the grass or ditches alongside the roadway.

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Example Solution

This stretch of Montezuma Rd. could benefit from the installation of ADA-compliant sidewalks on both sides of the roadway so that residents from the nearby neighborhoods can walk safely to and from the elementary school. In addition to installing sidewalks, designated pedestrian crossings are also recommended to provide safe places for pedestrians to cross Montezuma Rd. between the school and the neighborhoods.

APPENDIX B

PLAN REVIEW

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This appendix contains a summary of published plans through the RGVMAB that contributes to improving the active transportation network. Plans are from both the regional and municipal level.

The Rio Grande Valley contains many communities that have developed plans to support and enhance active transportation networks. Both regional and local entities have contributed to this effort, improving quality of life for people who walk or bike. As this plan was developed for the RGVMPO, it was crucial that the work done in the plans mentioned below be acknowledged and carried forward into the RGVMPO Active Transportation Plan.

MULTIMODAL TRANSPORTATION PLANNING EFFORTS

Documents produced by the three former MPOs in the Rio Grande Valley (Brownsville MPO, Harlingen San Benito MPO, and Hidalgo County MPO) represent considerable effort and coordination in establishing and working towards regional goals. These three MPOs and their regional planning partners, have been the primary authors of the following documents.

Hidalgo County MPO 2015-2040 Metropolitan Transportation Plan

In 2014, the HCMPO adopted the 2015-2040 MTP, a long-range transportation planning document which identifies priorities for development programs and transportation projects within the Hidalgo County Urbanized Planning Area. The document identified existing and future land use trends and transportation needs and developed coordinated strategies to deliver transportation projects essential for the continued mobility and economic vitality of the Hidalgo County Urbanized Planning Area.

The Hidalgo County MTP sought to balance investments in various transportation modes against anticipated funding from federal, state, and local sources, while maintaining flexibility to address the dynamic changes in both the needs and resources of the community. Levels of acceptable system performance may vary among local communities, so performance measures were tailored to the specific needs of the area. The state, the MPO, and local officials collaborated to create performance measures in consultation with the operators of major modes of transportation in the coverage area.

2040 Harlingen-San Benito Metropolitan Transportation Plan

In 2014, the HSBMPO adopted the 2040 Harlingen-San Benito MTP. The plan included an assessment of the existing conditions of the region, a vision for the future of the transportation system to be implemented by stated goals and objectives, potential areas of system improvements, a program of transportation projects, a financial plan to fund the projects, and concerns about environmental/community impacts and how the MPO planned to address such impacts. In addition, the plan provided a summary of public engagement efforts conducted, the questions asked, and feedback provided by citizens who participated in the process.

The most recent update of the list of 2040 MTP projects were adopted in October of 2018 and identified 31 projects falling into the following categories:

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- Mobility (contains primarily roadway projects along with a handful of sidewalk projects)
- Safety
- On/Off System Bridges
- Transportation Enhancements
- Operational Improvements
- Comprehensive Development Agreement
- Preliminary Engineering
- Transit

2020-2045 Brownsville Metropolitan Transportation Plan

In 2019, the Brownsville MPO adopted the 2020-2045 MTP, which identified policies, programs, and improvement projects to address the evolving needs of the Brownsville Urbanized Planning Area over the long-range planning horizon of 25 years. This plan also prioritized transportation projects based on a variety of values (such as indicating environmental impacts, adding roadway capacity, contributing towards economic vitality, improving transit, etc.), which guide the development of the overall transportation system. The overarching goals for this MTP were to:

- Support economic vitality
- Increase safety and security
- Increase accessibility and mobility
- Protect and enhance the environment
- Promote efficient management and operation of the transportation system

ACTIVE TRANSPORTATION PLANNING EFFORTS

The following represent a sampling of active transportation planning efforts at the regional and local level in the Rio Grande Valley.

The Active Plan

The *Lower Rio Grande Valley Active Transportation and Tourism Plan* was adopted in September of 2016. The goal of the plan is to help create "one of the finest and most extensive region-wide non-motorized transportation networks anywhere in the United States" by providing facilities and infrastructure for active transportation, and active tourism more specifically, which will create benefits for transportation, health, and the economy. The plan proposes a network of various active transportation and recreational facilities, some of which include multi-use trails and bike facilities and provides design considerations and potential facility costs.

The plan also proposes a set of catalyst projects, two of which fall within the HSBMPO planning area (Arroyo-Resaca Multi-Use Trail segment and Arroyo Colorado Paddling Trail segment). The Active Tourism portion of the plan explores the possibility of bicycle tourism and trail tourism as potential programs and economic markets, which would have a significant impact on the use of and need for active transportation facilities in the HSBMPO region.

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Hidalgo County MPO Bicycle Plan

Adopted in 2017 by the HCMPO, the Bicycle Plan 2018 serves as a complement to the existing HCMPO Pedestrian Plan and as a core component in the overall multimodal plan for Hidalgo County. Additionally, the Bicycle Plan provides solutions to issues such as gaps within the sidewalk network, identifies safer approaches to street crossings and paths, provides environmental and health benefits, and encourages a bicycle-friendly environment.

Recommendations were developed based on analysis of existing facilities, policies, and plans as well as suggestions from the HCMPO's Bicycle and Pedestrian Advisory Committee (BPAC), Technical Advisory Committee (TAC), and through a series of public meetings and workshops.

The plan uses the 5 E's approach: engineering, education, enforcement, encouragement, and evaluation of outcomes. The plan also includes an approach to document and monitor trends through data collection to recognize progress and to identify achievement of plan goals and objectives. Localized data gathered in this process allows planners to better recommend courses of action designed to increase bicycling compared to more general data available at the national level. Surveys are used on a recurring basis to assess presumed preferences for driving over cycling and provide insight for ways to encourage a shift in behavior.

Hidalgo County MPO 2016 Pedestrian Plan

The 2016 Pedestrian Plan, adopted by the former HCMPO, was updated from the 2014 plan and was intended to serve as a comprehensive planning tool for the Texas Department of Transportation (TxDOT), the HCMPO, and the local jurisdictions within the former MPO's boundaries to develop a safe and comfortable pedestrian network and an increased standard for walkable communities.

Coordination and collaboration with the other neighboring former MPO's like HSBMPO and Brownsville MPO was designed to improve regional connectivity on cooperative projects. Planning directly for a pedestrian network has previously been left to the cities within the HCMPO's old planning boundaries resulting in a lack of connectivity in sidewalk infrastructure between cities. The Pedestrian Plan promoted a continuous and safe pedestrian network required as part of a federally mandated comprehensive multimodal transportation plan. This cross MPO coordination has been adopted and merged into the newly formed RGVMPO's vision and efforts.

2016 Bicycle and Pedestrian Master Plan

Finalized in 2016, the HSBMPO Bicycle and Pedestrian Master Plan provided a set of recommended projects, policies, and practices meant to improve and expand the active transportation network in the old HSBMPO study area. The plan's recommendations resulted from a combination of public engagement, best practices, and an assessment of community conditions and needs. In addition, the plan includes an implementation program that defines roles and responsibilities, identifies funding options, and provides detailed information about the recommended projects.

Harlingen Trails Master Plan

Adopted in March of 2010, the Harlingen Trails Master Plan's purpose is to aid in the creation of a trails system that provides safety, accessibility, and connects people to existing destinations;

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represents the identity and character of the city and enhances its physical appearance; and provides opportunities to learn about the city and form public/private partnerships.

The plan aims to create a trails system that provides recreational/functional mobility opportunities for active transportation modes, promotes a sense of place, and provides a safe environment; develop tools and mechanisms to implement the plan and facilitate trail development; develop and identify funding sources; and incorporate public participation into the planning and design process for new trails. The plan's recommendations identify four types of opportunities for trail development, including arroyo trails, irrigation trails, rail trails, and street trails.

Harlingen Parks and Recreation Master Plan

In conjunction with the City of Harlingen's One Vision and One Harlingen Comprehensive Plan, the city also developed a Parks and Recreation Master Plan, which was adopted in early 2016. One of the major findings to come out of this plan is the need for trails. Citizen input resulting from a needs assessment ranked "Add more trails or places to ride a bicycle" as the community's second highest concern under the parks and recreation umbrella.

Therefore, the plan includes trails under the list of "very high" needs, noting that there are still key gaps and that the western part of the city currently has no trails. The plan includes trail development as one of the improvement categories in its final recommendations, with an aim of "developing a citywide connected trails system based on the recommendations of the city's adopted 2010 Trails Master Plan."

San Benito Parks and Recreation Master Plan

With its most recent draft in 2015, the San Benito Parks and Recreation Master Plan acts as a supplemental piece of the San Benito Comprehensive Plan. The Parks and Recreation Master Plan's purpose is to "provide thoughtful guidance and sound direction to the city in its commitment to acquire, develop, and manage an adequate and easily accessible system of parks and recreation facilities and programs to serve the residents of San Benito."

One of the specific goals of the plan involves building an active transportation network to improve connectivity throughout the community. Under this goal, the plan provides a set of actionable objectives as recommendations for achieving the goal. These actionable objectives include items such as taking steps to create more focused and detailed plans/designs, identifying and obtaining funding, coordinating with relevant entities, and obtaining the necessary rights-of-way or easements to use in the creation of the network.

San Benito Downtown Revitalization Plan

Adopted in August of 2016, the *San Benito Downtown Revitalization Plan* is a supplement to the San Benito Comprehensive Plan. Though transportation is not the primary focus of this plan, there are concerns, opportunities, and recommendations discussed that are related to transportation. Traffic is listed as both a major opportunity and concern for the downtown area. Some of the recommendations in the plan include steps such as enhancing connectivity to downtown, in particular for active transportation modes and the trail network, improving the traffic environment through

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traffic calming strategies, reconfiguring certain roadway sections, and implementing Complete Streets.

Brownsville Parks & Recreation Open Space Master Plan, 2008

This plan takes an inventory of the existing parks and open space in Brownsville, while creating an implementation plan to connect the existing infrastructure to the current and anticipated needs of community by improving the quality of the resources available with a planning horizon of 2008-2022. Procedures within this plan follow guidelines set forth by the Texas Parks and Wildlife Department (TPWD) to ensure the city continues to maintain eligibility for funding future parks projects.

Priorities identified through community engagement included:

- Provide more efficient maintenance and security
- Provide more recreational amenities and facilities
- Include educational/interactive opportunities with natural areas
- Expand the existing park system through acquisition of more open space/natural areas

The plan's goals also focus on improving existing parks and open space, while identifying potential areas for acquisition that would play a major role in improving connectivity between open spaces and enhance the quality of life of Brownsville residents.

Connecting Brownsville, The 2013 Bicycle and Trail Master Plan

The City of Brownsville took a progressive approach in 2013 to meet the evolving transportation needs of their fast-growing population. To increase resident's quality of life and number of transportation choices, the City created *Connecting Brownsville* which builds on the previous efforts set forth in the *Parks & Recreation Open Space Master Plan*. This plan emphasizes five major goals to accomplish its overarching mission:

- Create an interconnected network
- Form partnerships throughout the community that will help facilitate this mission
- Invest, when feasible, in comfortable infrastructure that separates non-vehicular and vehicular traffic
- Ensure ease of accessibility to infrastructure
- Encourage short trips to connect longer trips (i.e. bike to a bus stop)
- Provide a variety of facility types

Recommendations were developed based on analysis of existing facilities, policies, and plans as well as suggestions from the public participation process. The public participation process was conducted through a series of public meetings, workshops, surveys, and conversations at local events. Recommendations were also separated into four different phases based on timeline of implementation (rapid implementation, near-term, mid-term, and long-term).

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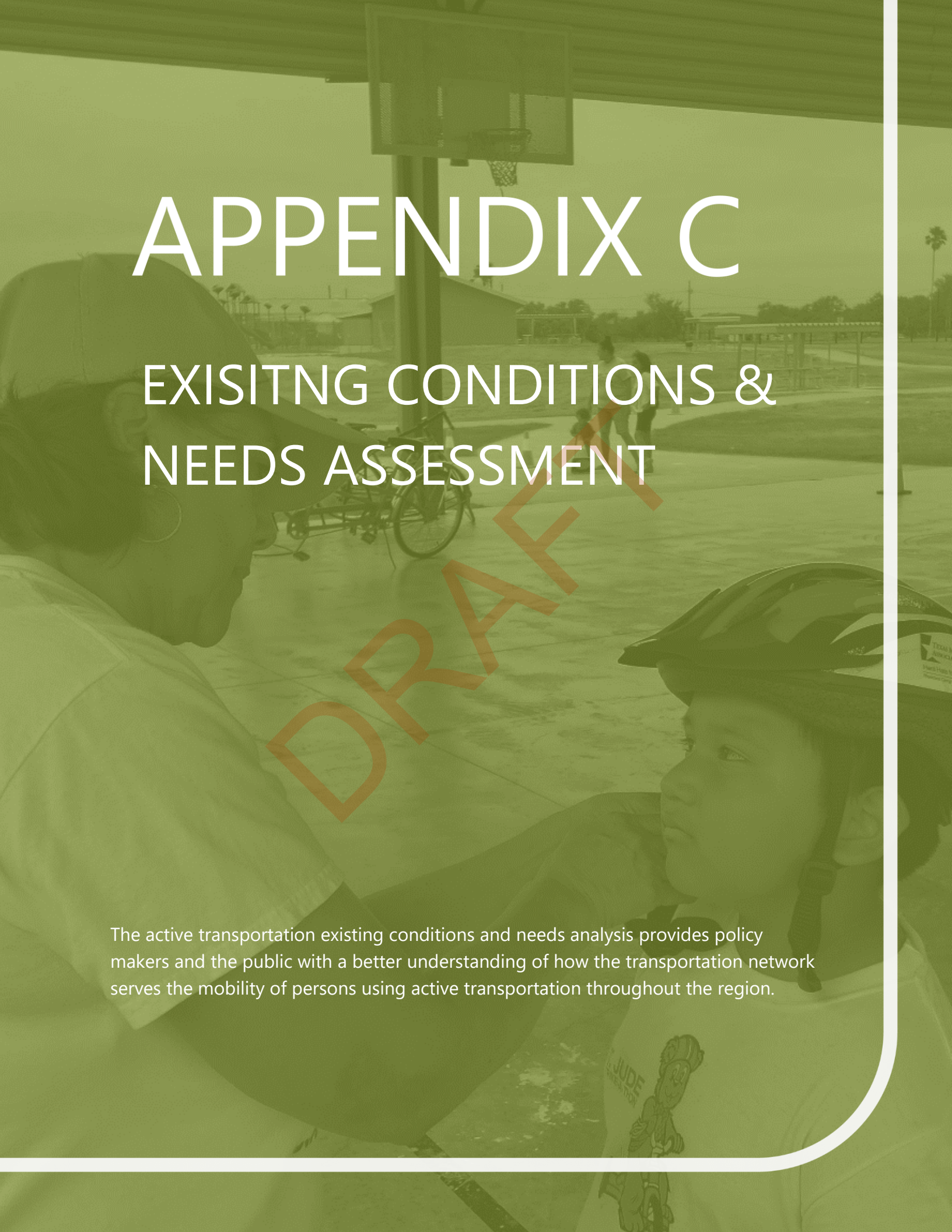
South Padre Island, Parks & Open Space Master Plan, 2013

The *Parks & Open Space Master Plan*, adopted in 2013, takes an inventory of existing parks, open space, and recreational facilities, while identifying opportunities to improve those existing spaces or acquire new lands to be converted to parks, open spaces, or recreational facilities. Public participation was used to highlight and support the existing facilities analysis, giving the community a voice to help identify and set priorities within the scope of the plan.

Additionally, this plan holds strong connections to the tourism sector of South Padre Island's economy, ensuring that all parks and open spaces will continue or build upon the support of tourist activities. Through the planning process, the Parks & Open Space Master Plan identified three major goals:

- Protect and improve the existing system of parks and open space.
- Enhance tourism by networking local resources and system of parks and open space.
- Provide healthy environments to residents.

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APPENDIX C

EXISITNG CONDITIONS & NEEDS ASSESSMENT

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The active transportation existing conditions and needs analysis provides policy makers and the public with a better understanding of how the transportation network serves the mobility of persons using active transportation throughout the region.

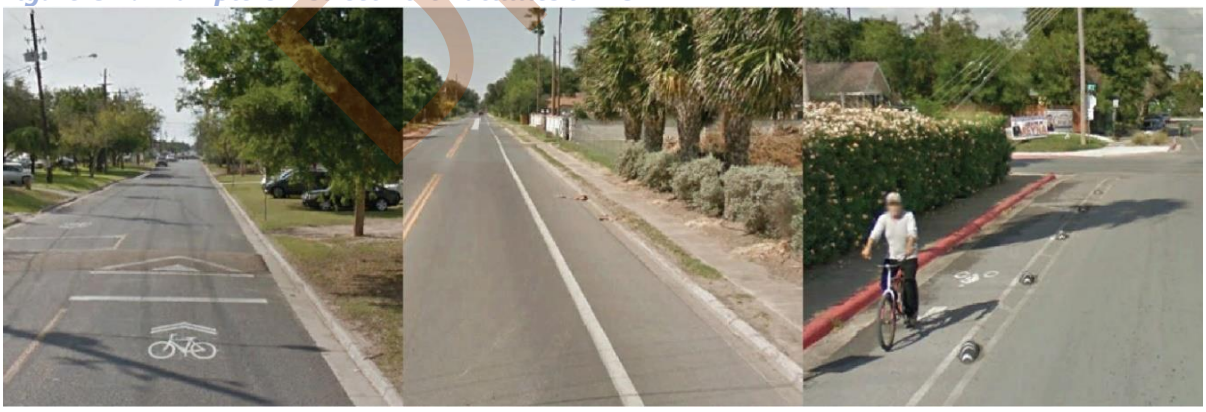
EXISTING CONDITIONS

This memo looks at three primary aspects in gauging active transportation network performance. Existing conditions were examined by reviewing an inventory of existing facilities as well as policies and programs throughout the region that influence active transportation. Safety data was examined in order to detail the regional trends in crashes for active transportation users using the Texas Department of Transportation's (TxDOT) Crash Records Information System (CRIS) for Cameron and Hidalgo Counties for the five-year period from 2015-2019. Lastly, an analysis of the network was performed to review travel patterns, accessibility, level of stress, and proximity to transit in order to perform a gap analysis. The existing conditions analysis and needs assessment explored the current state of the transportation system for those who walk and bike and identifies deficiencies and safety concerns within the network. As this analysis was conducted in support of the development of both the Metropolitan Transportation Plan and Active Transportation Plan, the contents of this memo reflect a higher level of detail in analysis than is typically contained in an active transportation needs analysis for the MTP alone. The Rio Grande Valley Metropolitan Planning Organization (RGVMPO) has a mixture of on street and off-street facilities within the Rio Grande Valley Metropolitan Area Boundary (RGVMAB). As urban areas in the Rio Grande Valley continue to densify and grow, walking and bicycling become an increasingly vital component of the transportation system.

Existing Bicycle Facilities

Within the RGVMAB there are nearly 178 miles of on-street bike facilities, consisting of bike lanes, cycle tracks or shared lanes with either a shared lane marking or signage. Protected bikeways, which are the most comfortable for the broad range of people using the facility, make up about 2 miles or 1% of the total on-street bike facilities. **Figure C-1** displays examples of the on-street facility types commonly found throughout the RGVMAB today.

Figure C-1: Example On-Street Bike Facilities in RGVMAB



Bike Lane – N. Main St. Shared Lane – N. Coria Protected Bike Lane – E. Jackson

Off-Street facilities are located outside of the traffic lanes, where users are not directly interacting with vehicle traffic. The RGVMAB contains about 114 miles of off-street facilities, often referred to as Hike and Bike trails. **Table C-1** below shows the total mileage for bike facilities within the RGVMAB. Brownsville, Edinburg, Harlingen, McAllen, and Pharr make up the largest portion of urban bike

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facilities throughout the RGVMAB, while bike facilities outside of the urban centers comprise 14% of the total 292 miles.

Table C-1: Miles of Bike Facilities within RGVMAB by City

City	On-Street Miles	Off-Street Miles	Total Miles	Percent of Total RGVMAB Bike Facilities
Alamo	1.3	0.0	1.3	0%
Brownsville*	71.2	26.2	97.4	33%
Donna	1.1	0.0	1.1	0%
Edinburg*	26.2	3.9	30.1	10%
Harlingen*	6.3	13.7	20.0	7%
Hidalgo	7.1	1.8	8.9	3%
Los Fresnos	1.6	0.0	1.6	1%
McAllen*	17.4	33.3	50.7	17%
Mission	3.7	3.7	7.4	3%
Palmview	0.3	0.4	0.6	0%
Pharr*	12.7	6.3	19.1	7%
San Benito	0.9	3.2	4.1	1%
San Juan	2.1	0.5	2.5	1%
Weslaco	5.9	1.1	7.0	2%
Primera	0.0	0.2	0.2	0%
Rio Hondo	0.0	0.4	0.4	0%
Outside of City*	20.6	18.9	39.5	14%
Grand Total	178.3	113.6	292.0	100%

*Communities represent the highest proportion of bike facility mileage

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Existing Sidewalk Facilities

Sidewalk facilities in the RGVMAB are prevalent within urban areas**.** The total miles of sidewalk were found for each city within the RGVMAB. In addition to the quantity of sidewalks, the sidewalk network coverage was calculated by selecting roadways within each city with a speed limit of less than 60 miles per hour (mph) because roadways with speeds at or above 60mph do not commonly contain sidewalks and are not conducive to walking.

To calculate for a full coverage sidewalk network, with sidewalks on both sides of a road, the selected roadway miles were doubled. To measure the coverage of the sidewalk network, total miles of existing sidewalk were divided by the doubled roadway miles, for roadways under 60mph, as show in the formula below.

Table C-2 shows the number of miles of sidewalk within each city, along with the coverage of the sidewalk network.

$$\frac{Sidewalk\ Miles}{(Roadway\ Miles\ under\ 60mph * 2)} = \%\ of\ Sidewalk\ Coverage$$

Table C-2: Sidewalk Mileage and Coverage by City

City	Miles of Sidewalk	Sidewalk Coverage
Alamo	31.4	18%
Alton	21.5	19%
Brownsville	412.9	30%
Combes	1	2%
Donna	43.2	24%
Edcouch	3.6	10%
Edinburg	238.1	34%
Elsa	6.9	13%
Granjeno	2	43%
Harlingen	159.7	20%
Hidalgo	30.1	26%
La Feria	10.3	12%
La Joya	12.6	26%
La Villa	2.8	11%
Los Fresnos	18.1	33%
Los Indios	1.2	4%
McAllen	533.7	45%
Mercedes	39.2	21%
Mission	263.3	35%
Palm Valley	0.8	5%
Palmhurst	3.8	7%
Palmview	4.4	7%
Penitas	7.2	24%
Pharr	162	32%
Primera	3.9	10%
Progreso	2.6	6%
Progreso Lakes	0.4	2%
Rancho Viejo	0.3	1%
Rio Hondo	2.2	8%
San Benito	48.4	17%
San Juan	60	24%
Santa Rosa	0.6	2%
Sullivan City	0.3	1%
Weslaco	83.8	22%
Total	**2,212.20**	**--**

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Figure C-2, Figure C-3 and **Figure C-4** show both on- and off-street bike facilities, along with sidewalks in each of the major urban areas within the RGVMAB.

Figure C-2: Bike Facilities in McAllen & Edinburg Area

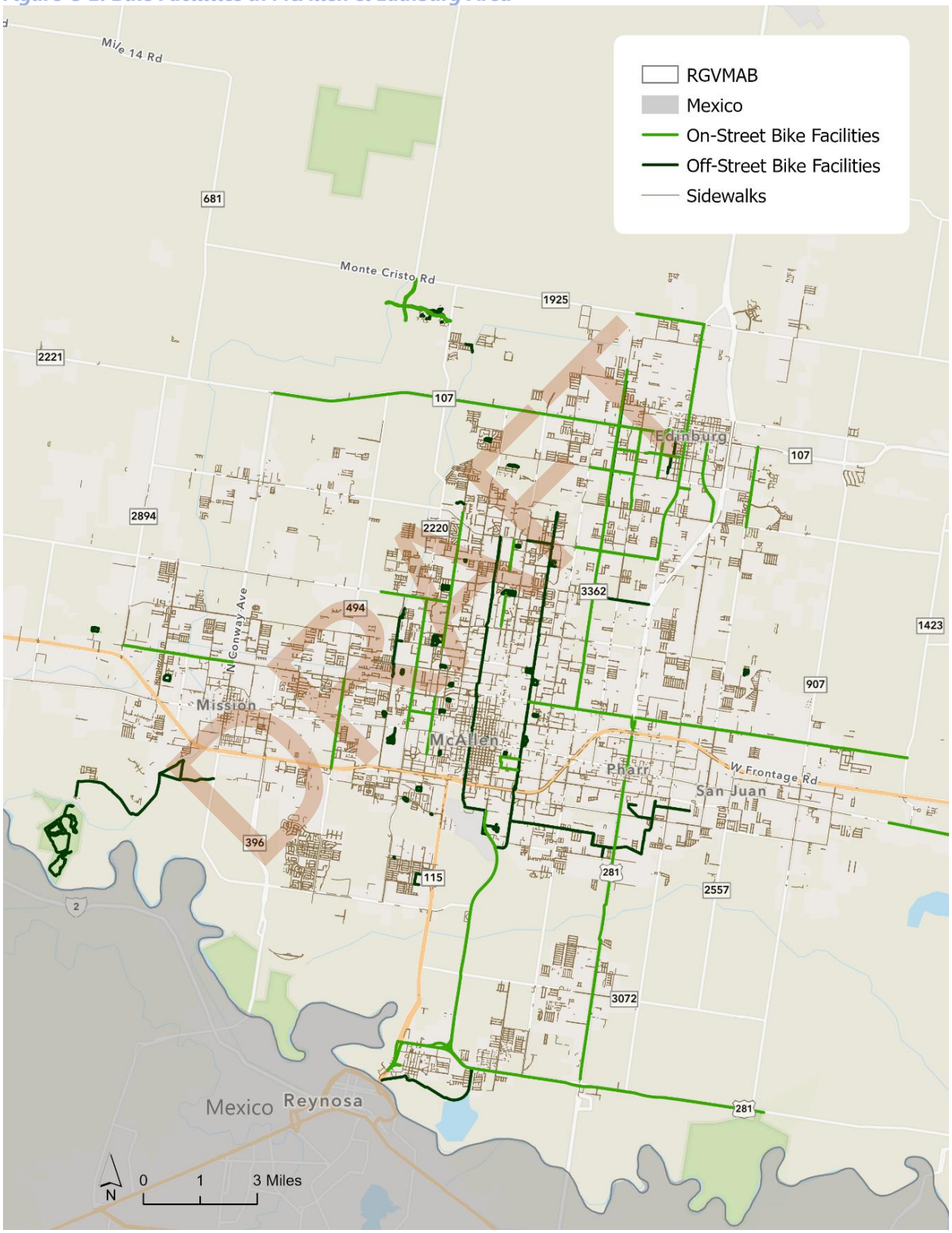


Figure C-3: Bike Facilities in the Harlingen & San Benito Area

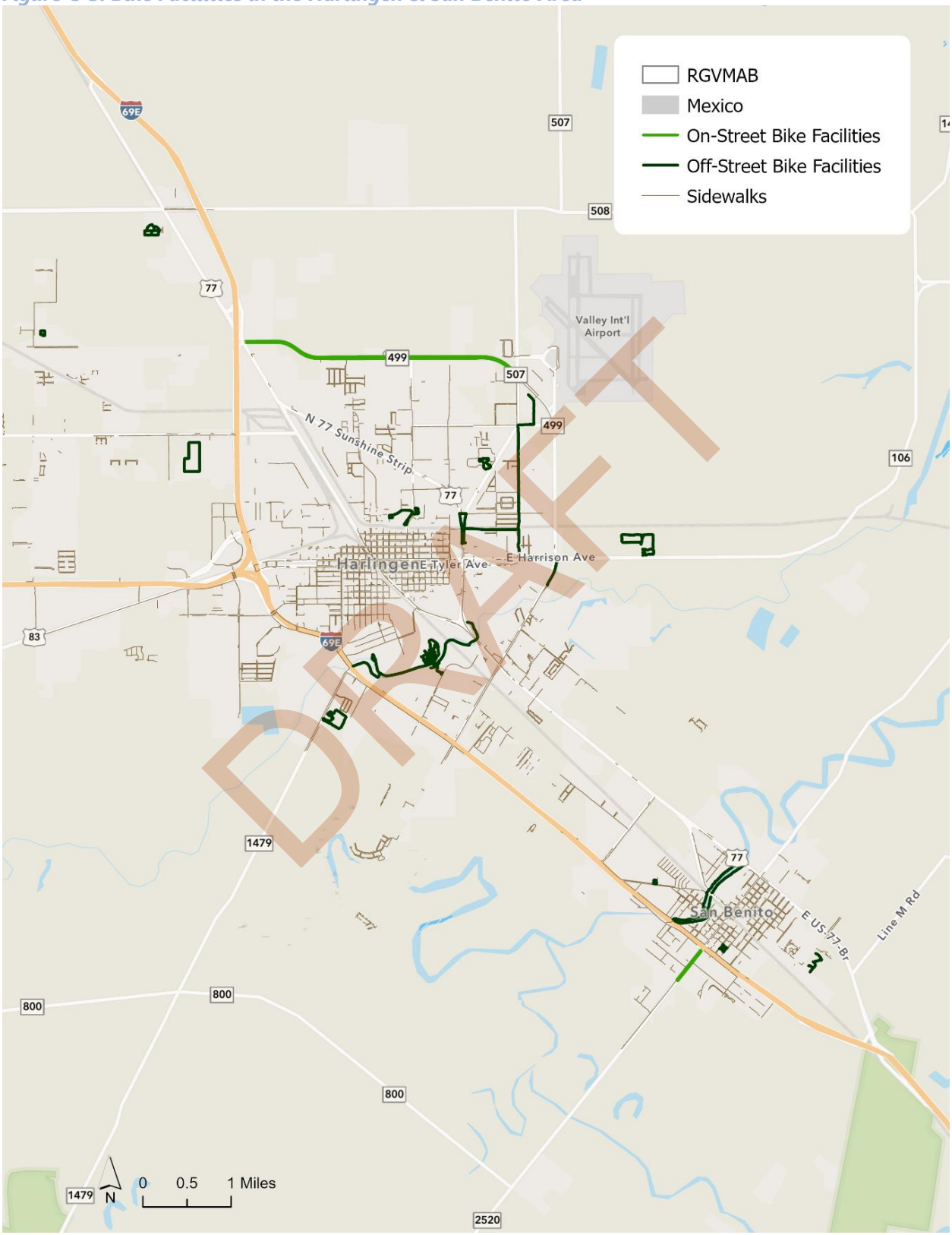
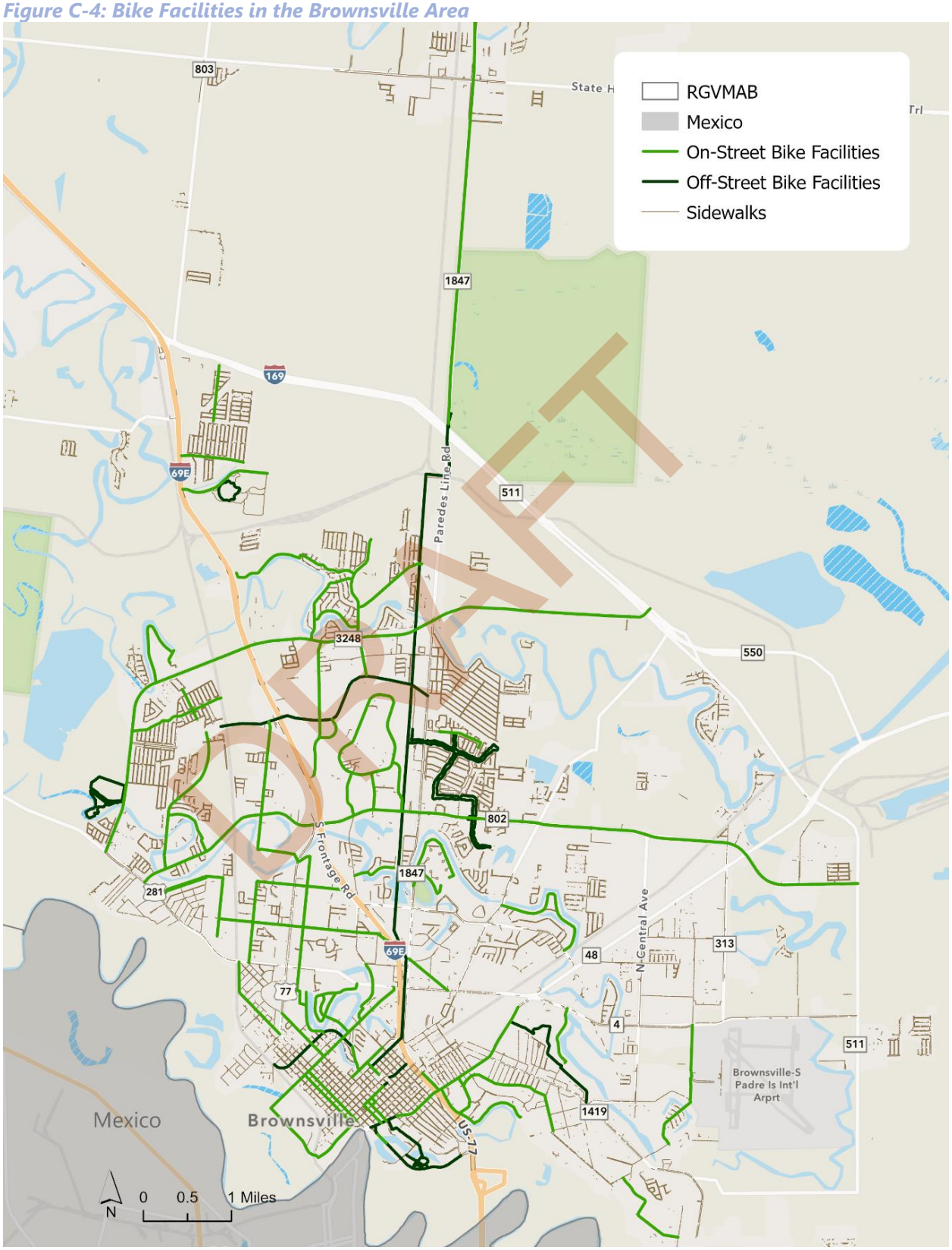


Figure C-4: Bike Facilities in the Brownsville Area



Policy and Program Review

Policies, programs, and ordinances are powerful tools that governments use to shape how the transportation system serves its residents. If a government aims to support people who move by active transportation modes like walking and biking, its funding priorities, policies, ordinances, and codes must also reflect the same outcome. There are many policies and ordinances that support and shape active transportation within communities. A few key policies and practices have been selected for review in major cities within the RGVMAB. While many smaller communities can also benefit from such policies and programs, they are not commonly found. The policies, programs and ordinances described below were reviewed.

Complete Streets

Complete Streets Policies are a collection of goals, design standards, ordinances, or performance measures that ensure streets are safe for people of all ages and abilities, regardless of how the travel. Complete Streets Policies also tend to the needs of local economies, cultures, and the environment in an equitable manner.

Open Streets Events

Open Streets events or initiatives temporarily close significant lengths of street to people using automobiles and encourage use for people walking, biking, rolling, playing, dancing, or nearly any other non-automobile activity. Open Streets events in North America are modeled closely after the events starting in the 1970's in Colombia called ciclovías, though similar events occurred in major cities in the United States, as early as the 1960's.

Parking Enforcement

Parking ordinances or municipal city codes that restrict automobiles parking, stopping, or standing in a bike facility are an important aspect of providing safe access for people of all ages and abilities. Automobiles in bike facilities may necessitate unsafe maneuvers for people in a bike lane, such as merging into an adjacent travel lane with automobiles travelling at high speeds. Enforcement is a key component of such an ordinance.

Safe Passing Ordinance

For a person using a bicycle, sharing lanes with automobile traffic, or using a narrow bike lane adjacent to high speed traffic can cause significant stress or possible erratic reactions to a close encounter. A safe passing ordinance dictates that people driving a car must allow a specified distance between their vehicle and someone riding a bicycle. Typical that distance is 3 feet or more.

Safe Routes to School

Safe Routes to School (SRTS) is a program to encourage and assist children and families getting to and from elementary, middle, and high schools. There is a shared focus on infrastructure improvements and programs to encourage kids and families to walk and bike to school.

Planning Goals

One of the first steps to improving the transportation system for people who walk, and bike is setting goals that clearly prioritize and necessitate change. Goals can often be found in planning reports or documents like comprehensive plans, master plans or similar resources.

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Transportation Demand Management (TDM)

TDM aims to reduce the negative impacts of typical peak AM and PM single occupancy car trips by spreading the demand across the entire day and encouraging the use of alternative modes including walking, biking, and transit. Strategies may include shifting commute times or incentivizing alternative work schedules, encouragement programs surrounding active transportation use, or parking policy.

Vision Zero

Vision Zero takes a clear and unrelenting stance on eliminating traffic fatalities. Vision Zero policies clearly state that no death or serious injuries in our transportation systems are acceptable. A Vision Zero policy takes a multifaceted approach to reducing deaths and serious injuries such as reducing speeds and rethinking the street design process.

Policy Review Summary

The review in **Table C-3** indicates several active measures communities within the RGVMAB are taking to support people to use active modes of transportation.

For example, nearly all of the cities reviewed have ordinance requires safe passage of vulnerable road users, and several more enforce a no parking ordinance within bike facilities. However, the review also shows areas where these major cities can improve.

Complete Streets policies are only present in the city of Mission. Complete Streets can be a building block policy to help shape the roadway system to safety accommodate all users.

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Table C-3: Active Transportation Policy and Program Review

Region	Complete Streets	Open Streets Events	Parking Enforcement	Safe Passing Ordinance	Safe Routes to School	Planning Goals	TDM Programs	Vision Zero
State of Texas								
RGVMPO								
Cameron County								
Hidalgo County								
Brownsville								
Edinburg								
Harlingen								
McAllen								
Mission								
Pharr								
San Benito								
San Juan								
Weslaco								

= Policy or Program present = Progress towards Policy or Program but not fully present

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ACTIVE TRANSPORTATION NEEDS ANALYSIS

In addition to the review of the existing conditions for active transportation, a granular analysis was conducted to review the safety, level of stress, transit proximity, and expected travel patterns as part of the deficiencies, or needs analysis for non-motorized travel choices. The following sections represent in depth narratives of these portions of the needs analysis.

Safety Analysis

One of the most important steps in planning for the future of active transportation in a region is to determine the region's specific modal needs so that these needs can be addressed accordingly. One type of needs identification comes in the form of a safety analysis, which involves examining how safe the regional environment is for active transportation users. This type of analysis can pinpoint current safety issues and challenges, allowing the region to implement measures to mitigate or prevent crashes over time to address the existing and future safety needs of active transportation users.

As mentioned in the introduction to this memo, in order to identify and assess patterns of active transportation safety in the RGVMAB, crash data was gathered from the Texas Department of Transportation's (TxDOT) Crash Records Information System (CRIS) for Cameron and Hidalgo Counties for the five-year period from 2015-2019. Using this data, active transportation (AT) crashes were identified and isolated, then evaluated based on various characteristics such as time, severity, contributing factors, and location. For this analysis, AT crashes are defined as crashes involving at least one pedestrian bicyclist or person using another mobility device. (no individual crash involved both pedestrians and bicyclists).

Regional Active Transportation Crash Trends by Attribute

Attributes contained in the CRIS data were first used to analyze trends in crash frequency and severity separately from the location of the crash in order to gain a deeper understanding of how severe active transportation crashes tend to be, how frequently and at what time of the day these crashes are occurring, and to better understand possible contributing factors.

TOTAL CRASHES & CRASHES BY MODE

Over the course of the five-year period, a total of 2,238 AT crashes occurred in Cameron and Hidalgo Counties. 71% of these crashes involved pedestrians, while 29% involved bicyclists. In all, AT crashes accounted for only 1.6% of all crashes in the RGVMAB (involving all modes of transportation) for the same five-year period. **Table C-4** shows a breakdown of total crashes involving pedestrians or bicyclists.

Table C-4: Total Active Transportation Crashes and Crashes by Mode

Crash Types	Crash Count	Percent of All AT Crashes	As a Percent of Total Crashes (All Modes)
Pedestrian Crashes	1,582	71%	1.1%
Bicyclist Crashes	656	29%	0.5%
All AT Crashes	2,238	100%	1.6%

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Figure C-5 shows the locations of AT crashes throughout the region symbolized by mode (i.e. whether bicyclists or pedestrians were involved). It is important to note that 622 of the 2,238 AT crash records did not include latitude and longitude data and therefore were not mapped.

Figure C-5: RGVMAB Crashes by Mode

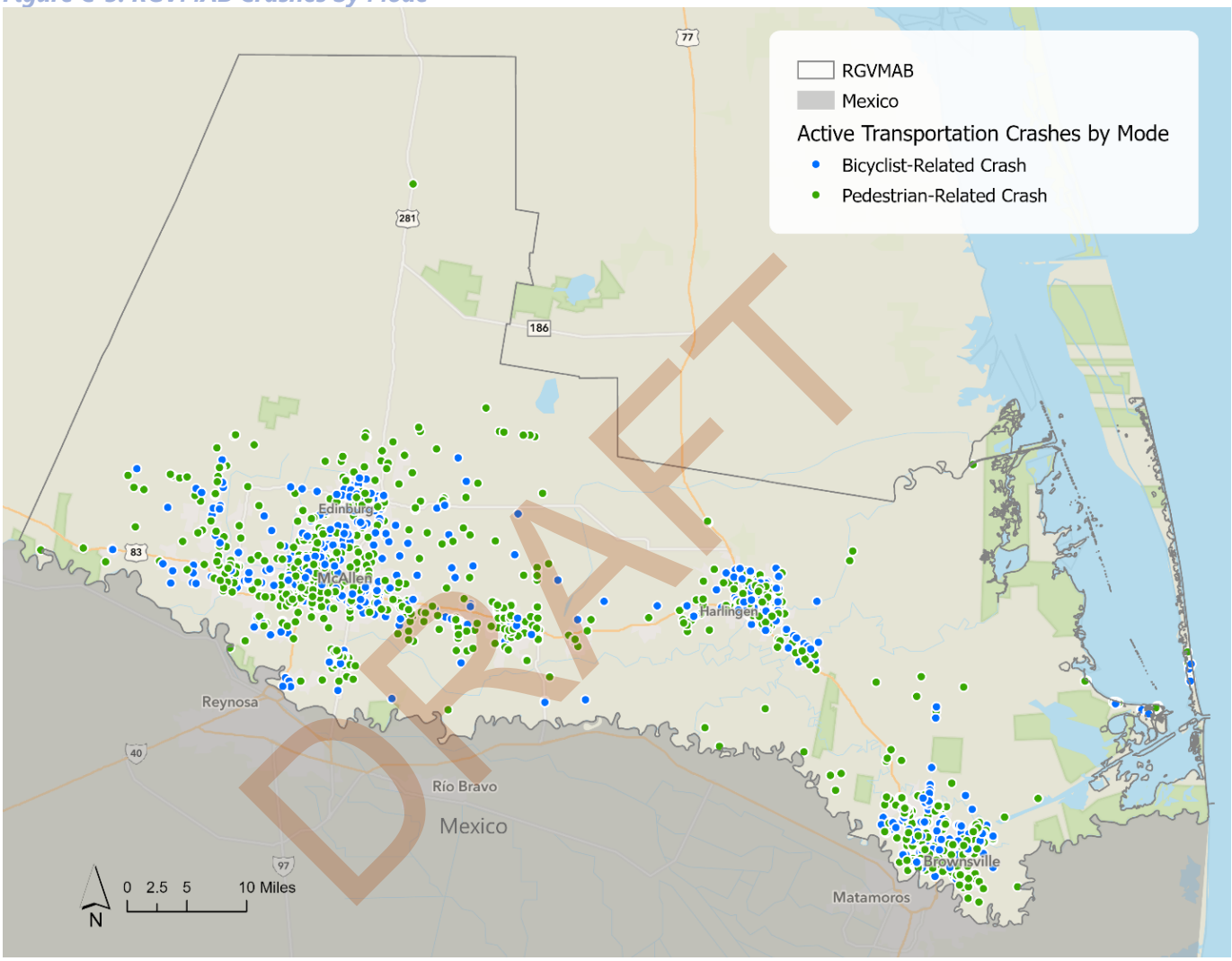
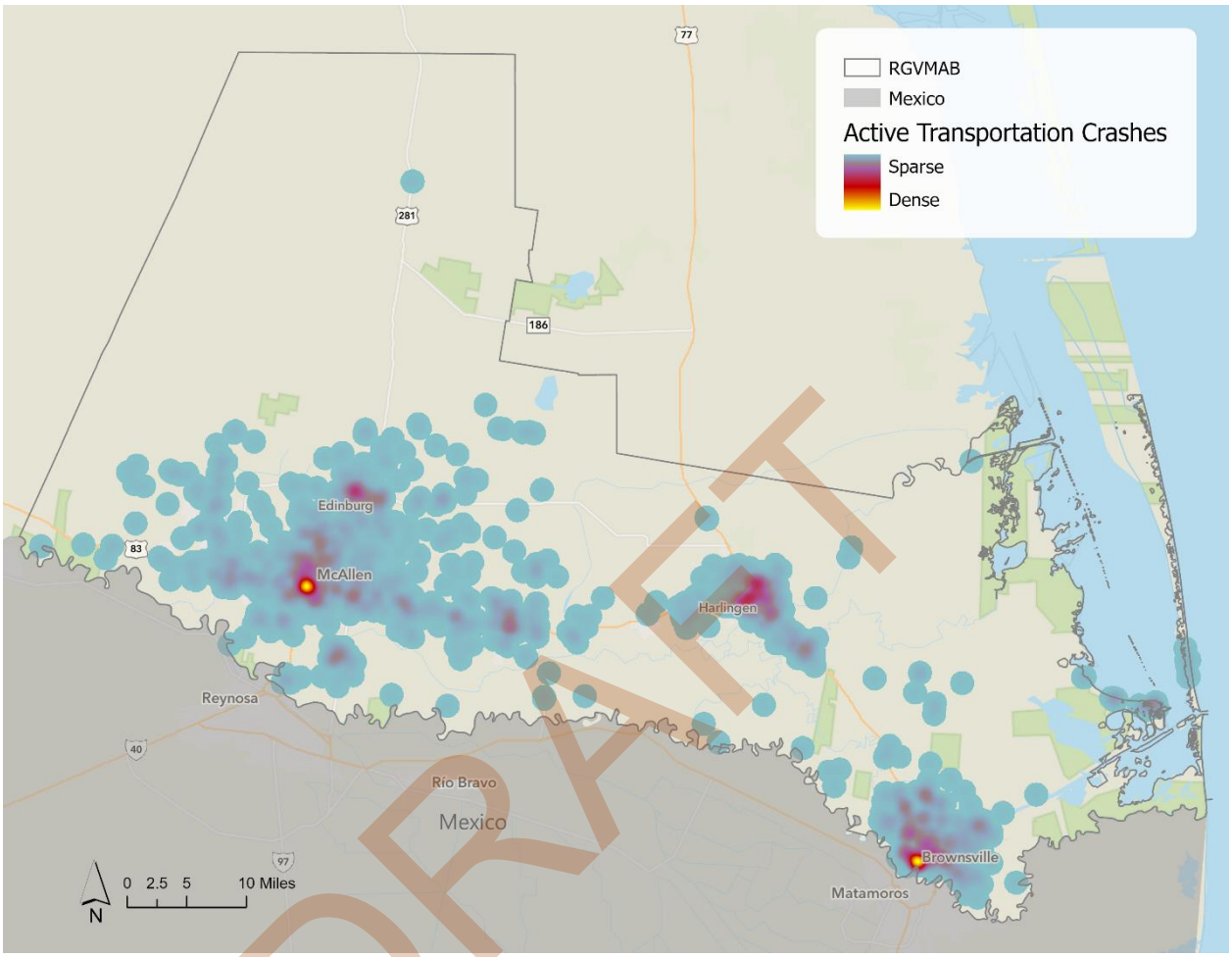


Figure C-6 represents a heat map that illustrates concentrations of AT crashes within the region. The map indicates that higher densities of AT crashes occur in the larger urban areas, correlating with the levels of traffic in these areas.

Figure C-6: RGVMAB: Crashes by Location Heatmap



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When broken out by year, as shown in **Table C-5**, the data can reveal potential trends in AT crashes over time. **Table C-5** also reveals that, within the past five years, there has been a slight decrease in crashes involving pedestrians, crashes involving bicyclists, and all AT crashes. However, the data also shows that occurrences of these types of crashes have begun to increase again within the past 1-2 years.

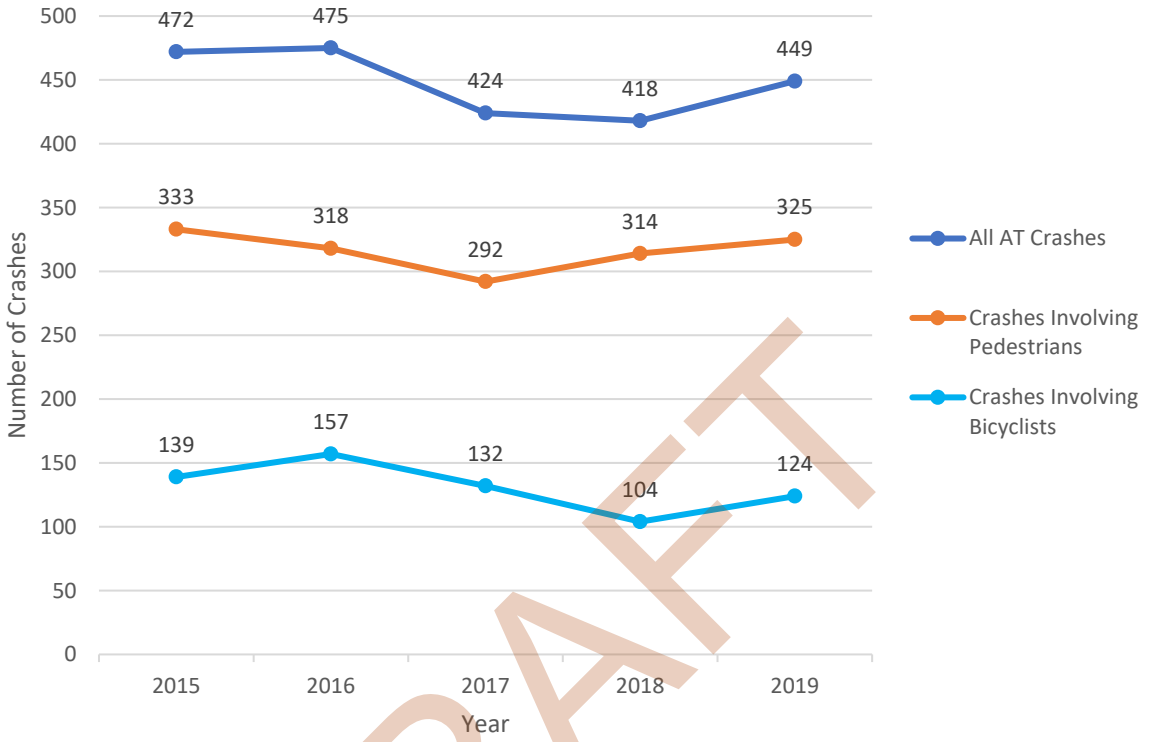
Table C-5: Active Transportation Crashes by Year (2015-2019)

Year	Number of AT Crashes	Percent of All AT Crashes	As a Percent of Total Crashes (All Modes)	Number of Pedestrian Crashes	Percent of All Pedestrian Crashes	Number of Bicyclist Crashes	Percent of All Bicyclist Crashes
2015	472	21%	1.7%	333	21%	139	21%
2016	475	21%	1.6%	318	20%	157	24%
2017	424	19%	1.6%	292	18%	132	20%
2018	418	19%	1.5%	314	20%	104	16%
2019	449	20%	1.5%	325	21%	124	19%
Total	**2,238**	**100%**	**1.6%**	**1,582**	**100%**	**656**	**100%**

Figure C-7 shows the increases and decreases in the number of crashes over time for all AT crashes, all crashes involving pedestrians, and all crashes involving bicyclists.

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Figure C-7: Active Transportation Crashes Over Time (2015-2019)



CRASHES BY SEVERITY

CRIS data provides information about severity, which represents the impact of each crash. Severity is broken into six levels, including crashes resulting in fatality, serious injury, non-serious injury, possible injury, and no injury, as well as unknown severity. **Table C-6** shows the distribution of AT crashes across the six severity levels for the five-year period of 2015-2019.

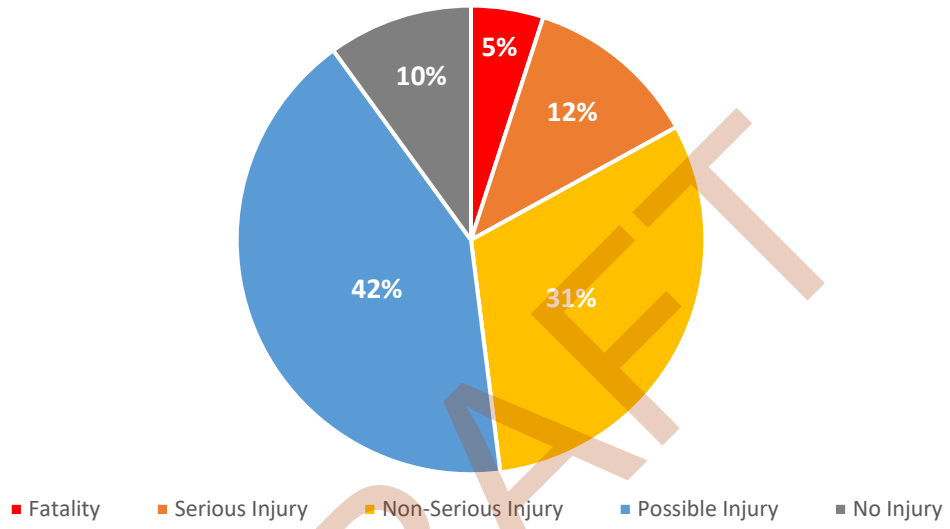
Table C-6: Active Transportation Crashes by Severity

Crash Severity	Number of AT Crashes	Percent of All AT Crashes	Number of Pedestrian Crashes	Percent of Pedestrian Crashes	Number of Bicyclist Crashes	Percent of Bicyclist Crashes
Fatality	123	5%	107	7%	16	2%
Serious Injury	268	12%	219	14%	49	8%
Non-Serious Injury	695	31%	468	29%	227	35%
Possible Injury	930	42%	660	42%	270	41%
No Injury	219	10%	126	8%	93	14%
Unknown	3	0.1%	2	0.1%	1	0.1%
Total	**2,238**	**100%**	**1,582**	**100%**	**656**	**100%**

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The pie chart shown in **Figure C-8** illustrates the portions of all AT crashes that fall into the various severity levels (unknown severity was excluded because its portion is less than 1%). The pie chart reveals that less than a fifth of all AT crashes resulted in either fatality (5%) or serious injury (12%). Just over 40% of all AT crashes resulted in possible injury, over 30% resulted in non-serious injury, and 10% resulted in no injury.

Figure C-8: All Active Transportation Crashes by Severity



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Table C-7 focuses on AT crashes that resulted in fatality, breaking these crashes out by year and counting the number of fatalities resulting from these crashes, while **Table C-8** does the same with AT crashes resulting in serious injury. These tables show that more than a fourth (28%) of all crashes resulting in fatality were AT crashes, while 14% of all crashes resulting in serious injury were AT crashes. These results are significant because although AT crashes make up only 1.6% of all crashes in the region for the five-year period, they comprise a much larger portion of all crashes that resulted in fatality or serious injury. This information implies that active transportation users bear a disproportionate amount of risk of injury or fatality and that planning for the safety of these users is of the utmost urgency.

Table C-7: Active Transportation Crashes Resulting in Fatality by Year (2015-2019)

Year	Number of AT Crashes that Resulted in Fatality	Percent of All AT Crashes that Resulted in Fatality	As a Percent of Total Crashes (All Modes) that Resulted in Fatality	Number of Fatalities Resulting from AT Crashes
2015	25	20%	28%	25
2016	30	24%	26%	30
2017	26	21%	28%	27

2018	23	19%	29%	24
2019	19	16%	31%	19
Total	**123**	**100%**	**28%**	**125**

Table C-8: Active Transportation Crashes Resulting in Serious Injury by Year (2015-2019)

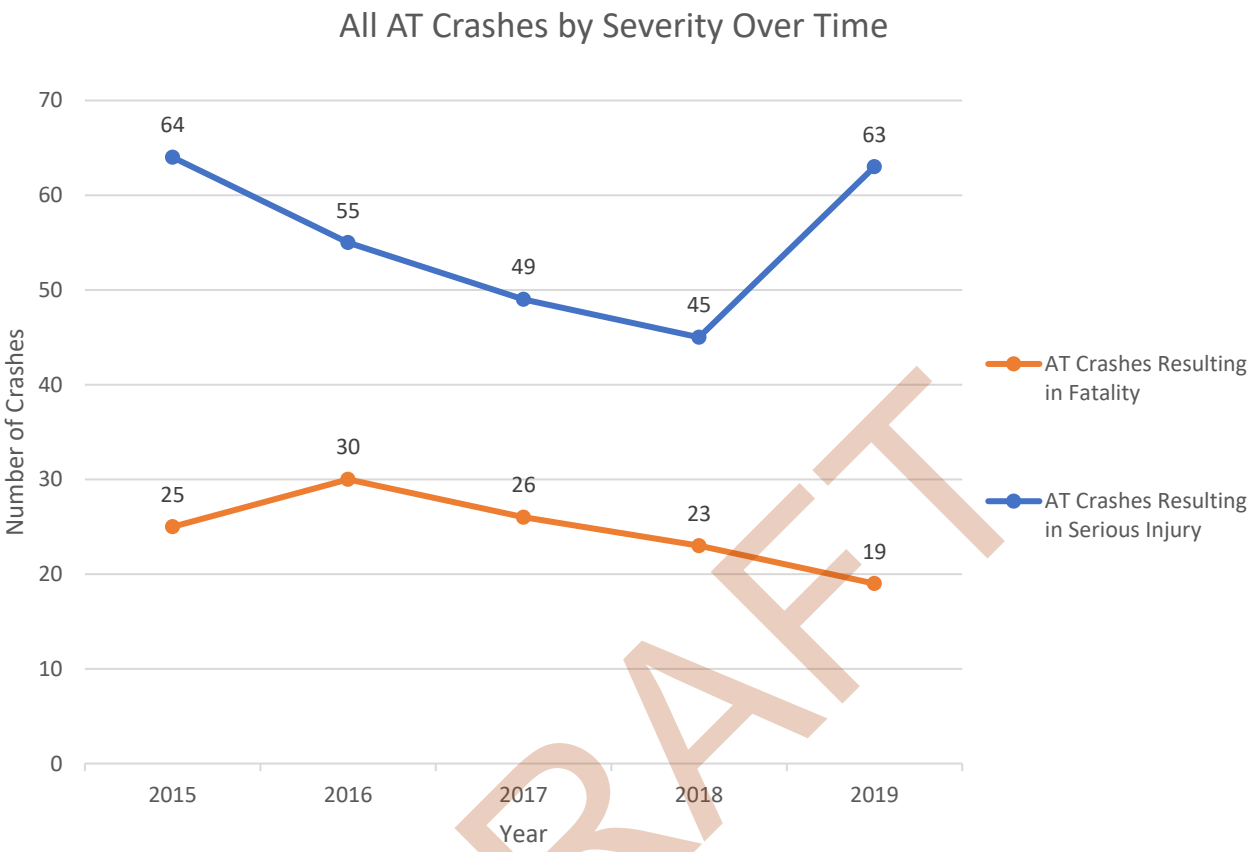
Year	Number of AT Crashes that Resulted in Serious Injury	Percent of All AT Crashes that Resulted in Serious Injury	As a Percent of Total Crashes (All Modes) that Resulted in Serious Injury	Number of Serious Injuries Resulting from AT Crashes
2015	64	23%	17%	66
2016	55	20%	13%	56
2017	49	18%	12%	53
2018	45	16%	13%	51
2019	63	23%	15%	64
Total	**276**	**100%**	**14%**	**290**

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Figure C-9 illustrates the changes in the number of AT crashes resulting in fatality or serious injury over the five-year period. From 2015-2016, there was a slight increase in the number of AT crashes resulting in fatality, while from 2016-2019 these crashes gradually decreased.

Crashes resulting in serious injury decreased over time from 2015-2018, but then experienced a sharp increase from 2018-2019, putting the count of these crashes back up to the 2015 level.

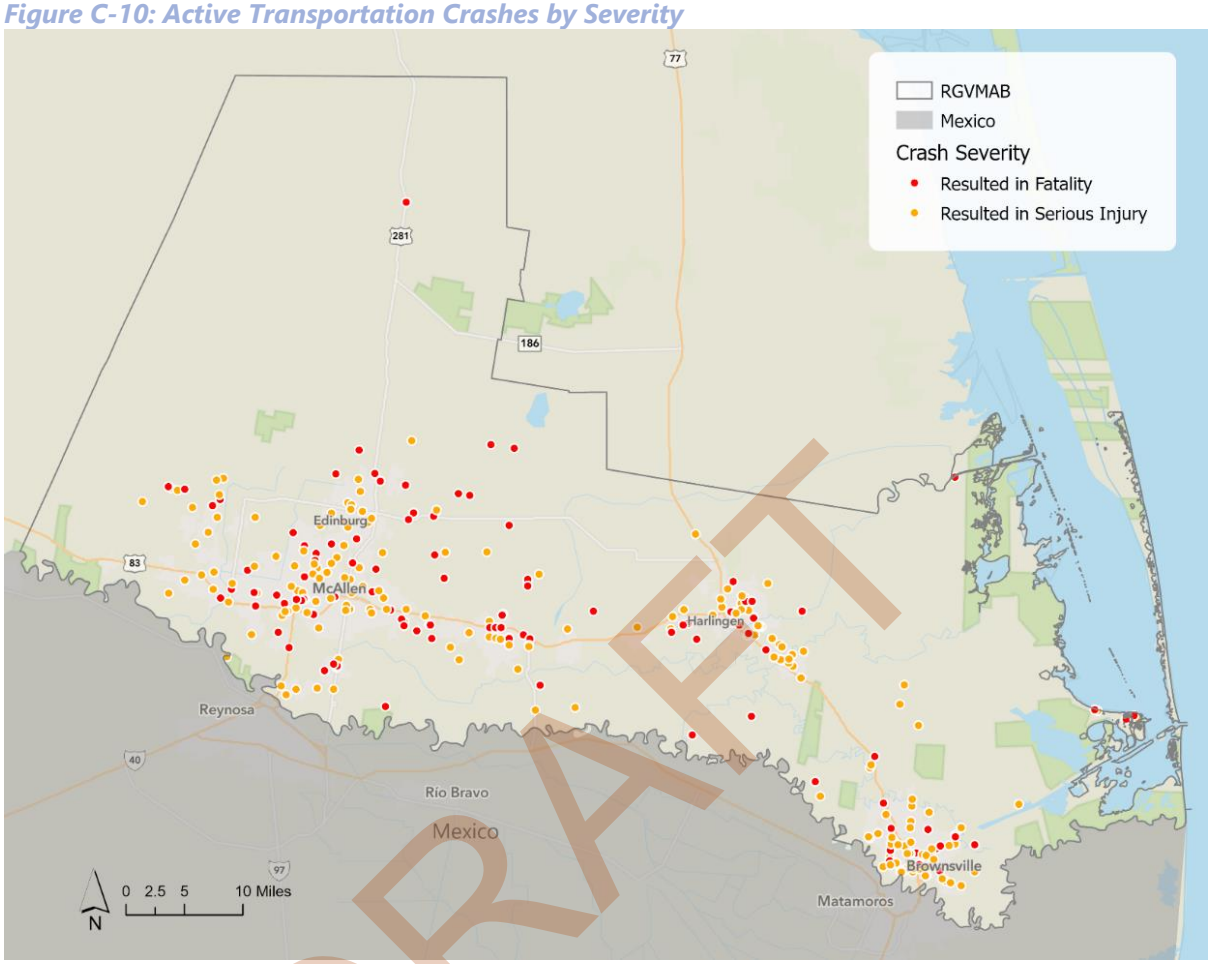
Figure C-9: Active Transportation Crashes by Severity Over Time (2015-2019)



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Figure C-10 shows the locations of AT crashes that resulted in fatality or serious injury throughout the region.

Figure C-10: Active Transportation Crashes by Severity



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Table C-9 shows the total number of AT crashes over the five-year period that resulted in any injury whatsoever, including serious and non-serious injuries. These values reveal that over the course of the period from 2015-2019, 85% of AT crashes resulted in an injury of some type.

This means that there is a high chance that pedestrians and bicyclists will sustain an injury if they are involved in accidents with automobiles. In addition, the bicyclists and pedestrians involved in the 2,238 AT crashes from 2015-2019 were much more likely to sustain an injury than the people in the automobiles that were involved in these crashes.

Over the five-year period, a total of 2,143 injuries were sustained by people involved in AT crashes, and 2,013 (94%) of these injuries were sustained by the bicyclists and pedestrians involved. This information illustrates why proactive implementation of measures to improve the safety of the active transportation network is critical for the health and safety of these users.

Table C-9 also compares the total number of AT crashes that resulted in injury to the total number of injuries that resulted from these crashes. The comparison reveals that the number of AT crashes that resulted in injury over the five-year period does not have a one-to-one relationship with the number of people that sustained an injury due to these crashes, because multiple people may be injured in the same crash.

This information illustrates how the number of people impacted by crashes can be much higher than the number of crashes itself.

Table C-9: Active Transportation Crashes Resulting in Any Injury by Year (2015-2019)

Year	Number of AT Crashes that Resulted in Any Injury	Percent of All AT Crashes that Resulted in Any Injury	As a Percent of All AT Crashes	Number of Injuries Resulting from AT Crashes
2015	403	21%	85%	443
2016	400	21%	84%	456
2017	357	19%	84%	396
2018	360	19%	86%	420
2019	387	20%	86%	428
Total	**1,907**	**100%**	**85%**	**2,143**

TIME OF DAY

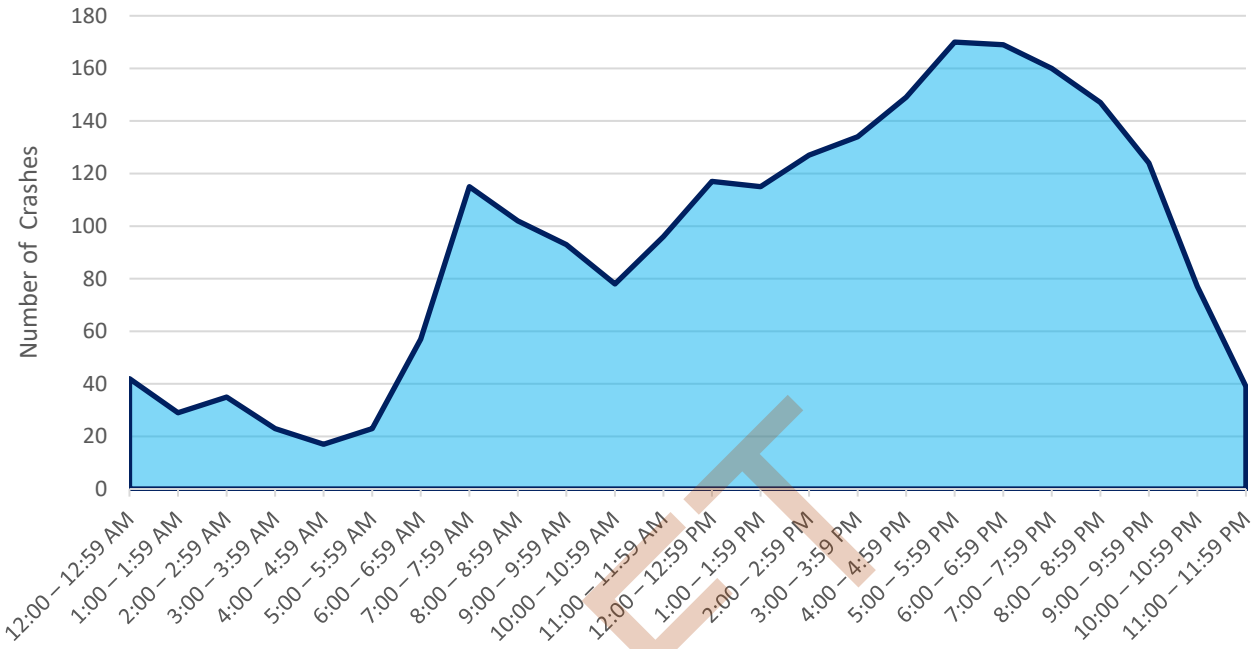
The primary purpose for reviewing crashes by time of day is to identify peaks when more crashes happen and compare these peaks to other daily patterns to understand potential correlations that may explain why crashes occur more frequently at certain times. **Figure C-11** shows the number of AT crashes that occurred during each hour of the day by year and for the five-year period overall.

Figure C-11 also illustrates the trends of increasing and decreasing occurrences of AT crashes from hour to hour for the 24 hours within a day. The trend of the line from hour to hour reflects a pattern similar to that of the common pattern of traffic congestion that occurs throughout a given day in many urban areas – over the five-year period, the total number of crashes that occurred between the 11:00 PM hour and the 5:00 AM hour is relatively low, but there is a morning rush hour spike from the 5:00 AM hour to the 7:00 AM hour, after which the number of crashes decreases a small amount until the 10:00 AM hour.

At the 10:00 AM hour, the number of crashes begins to increase again as the lunchtime rush starts, and the number of crashes continues to increase throughout the afternoon and into the evening rush hour. After the 5:00 PM hour, the number of crashes begins a gradual decrease until the 9:00 PM hour, and from the 9:00 PM hour to the 11:00 PM hour the crash count dips back down quickly. This pattern indicates that AT crash trends within the RGVMAB are generally correlated with daily peak traffic periods.

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Figure C-11: Active Transportation Crashes by Time of Day



Potential Contributing Factors

When a region takes the time to examine and evaluate some of the factors that have potentially contributed to crashes, it is able to identify solutions that can mitigate or eliminate these factors so that the safety needs of active transportation users can be met for both the short term and long term.

CRIS data provides a contributing factor attribute for crashes at the unit level rather than at the crash level (cars, bicyclists, pedestrians, etc. are all considered to be individual units that could be involved in the same crash). Using the crash identification numbers attributed to each crash in the database, the project team aggregated the contributing factors attribute up to the crash level to assess which contributing factors occurred the most frequently for AT crashes over the five-year period.

While a contributing factors attribute would theoretically provide the clearest insight into why crashes are happening in a region, the majority of AT crashes did not have contributing factor data recorded, so for this particular analysis, evaluating the contributing factor attribute is more useful as supporting information for why crashes might be occurring.

Table C-10 shows the various contributing factors and the number of AT crashes to which each factor applies.

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Table C-10: Active Transportation Crashes by Contributing Factor

Contributing Factors	Number of AT Crashes	Percent of All AT Crashes
Wrong Side - Not Passing	15	1%
Disregard Stop and Go Signal	16	1%
Disregard Stop Sign or Light	16	1%
Failed to Yield Right of Way - Open Intersection	17	1%
Failed to Yield Right of Way - Private Drive	23	1%
Failed to Yield Right of Way - Stop Sign	26	1%
Wrong Way - One Way Road	30	1%
Wrong Side - Approach or Intersection	38	2%
Additional Factors*	72	3%
Other Factor	223	10%
Pedestrian Failed to Yield Right of Way to Vehicle	495	22%
No Contributing Factor Data	1,267	56%
Total	**2,238**	**100%**

*Combined remaining factors that individually have less than 1% occurrence.

This information reveals that, for crashes with known contributing factor data, the most frequent contributing factor for AT crashes is "pedestrian failed to yield right of way to vehicle." This type of crash occurs when pedestrians are attempting to cross a street at a time or in a location where they do not have the right of way.

When crashes like this occur frequently, it may be an indicator that the street network and built environment do not provide pedestrians with sufficient crossing opportunities, times, or infrastructure, or do not provide crossing opportunities in the places where they are most needed/desired. Further studying the travel patterns of pedestrians in conjunction with the existing pedestrian infrastructure network could reveal areas where issues currently exist as well as areas where there are opportunities to make improvements.

SPEED-RELATED CRASHES

The speed of the various vehicles and people involved in a crash is another potential contributing factor that can help explain why a crash occurred. The CRIS data gathered for Cameron and Hidalgo Counties for the period of 2015-2019 showed that only about 1% of all AT crashes over the five-year period were considered to be speed related. Additionally, just over half of the speed-related crashes occurred in areas where the posted speed limit was 30 miles per hour. These findings imply that speed may not be as significant of an indicator for AT crashes as it is for automobile crashes, and that areas with relatively low automobile speed limits can still create unsafe environments for pedestrians and bicyclists. These areas could be candidates for additional safety measures, such as designated bicycle facilities, road diets, and other treatments. **Table C-11** breaks out the number of speed-related AT crashes by year.

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Table C-11: Speed-Related Active Transportation Crashes by Year (2015-2019)

Year	Speed-Related AT Crashes	As a Percent of All AT Crashes
2015	7	1.5%
2016	7	1.5%
2017	4	0.1%
2018	3	0.7%
2019	2	0.4%
Total	**23**	**1%**

MANNER OF COLLISION

Manner of collision relates to the specific movements of the vehicle(s) involved at the time of the accident. This information can provide insight into what types of physical situations or environments might be most hazardous for people using active transportation modes.

As shown in **Table C-12**, the most common type of collision related to AT crashes involves a single motor vehicle colliding with either pedestrians or bicyclists. AT crashes involving more than one vehicle were infrequent, representing only 2% of all AT crashes over the five-year period.

The data shows that, by far, the most frequent type of collision for AT crashes is "one motor vehicle – going straight." This could imply that most AT crashes occur when the motor vehicle involved is traveling straight and the pedestrian(s) or bicyclist(s) involved are also traveling straight, but in a direction perpendicular to the motor vehicle.

This type of scenario could occur either at an intersection or mid-block, and – similar to how "pedestrian failed to yield right of way to vehicle" was the most frequent contributing factor to AT crashes – this information provides an opportunity to assess how areas where active transportation users and automobiles make conflicting movements raise both challenges and opportunities for safety in the transportation system of the region.

Table C-12: Active Transportation Crashes by Manner of Collision

Manner of Collision	Number of AT Crashes	Percent of All AT Crashes
One Motor Vehicle - Backing	256	11%
One Motor Vehicle - Going Straight	1,443	65%
One Motor Vehicle - Turning Left	303	14%
One Motor Vehicle - Turning Right	181	8%
Other Manners of Collision*	55	2%
Total	**2,238**	**100%**

*Combined remaining manners of collision that individually have less than 100 occurrences over the five-year period.

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OTHER FACTORS

Other, secondary, factors that contributed to AT crashes can provide additional information on the conditions of each accident and increase understanding of why a crash occurred. **Table C-13** presents AT crashes categorized by secondary factors that contributed to crashes. This information reveals that, for crashes where a secondary factor was reported, "attention diverted from driving" was the most prominent category. Issues of driver inattention could potentially be addressed in part by street environment design choices that naturally encourage drivers to pay closer attention to their surroundings, such as flashing light beacons or reflective materials at pedestrian crossings, painted pavement along bicycle facilities, and other techniques.

Table C-13: Active Transportation Crashes by Other Factors

Other Factors	Number of AT Crashes	Percent of All AT Crashes
Open Door or Object Projecting from Vehicle	10	0.5%
One Vehicle Forward from Parking	11	0.5%
One Vehicle Parked Improper Location	16	1%
Vision Obstructed by Headlight or Sun Glare	16	1%
One Vehicle Entering Driveway	42	2%
Additional Other Factors*	88	4%
One Vehicle Backward from Parking	139	6%
One Vehicle Leaving Driveway	166	7%
Attention Diverted from Driving	228	10%
Not Applicable	1,522	68%
Total	**2,238**	**100%**

*Combined remaining factors that individually have less than 10 occurrences over the five-year period.

ROADWAY TYPE

Identifying patterns in the frequency of AT crashes based on the type of roadway facilities where they occur is another technique that can help RGVMPO focus their efforts to improve safety by exposing which types of facilities may pose higher risks for active transportation users. Normally, this comparison of crashes to the facilities on which they occur would be conducted based on roadway functional classifications. The CRIS database does provide functional classification information, however, for the AT crashes examined in this safety analysis, 68% were not assigned functional class attributes. So, the project team used the roadway type attribute instead, which provides similar information but grouped into slightly different categories. **Table C-14** shows these roadway types, as well as the number of AT crashes experienced in relation to each.

Table C-14: Active Transportation Crashes by Roadway Type

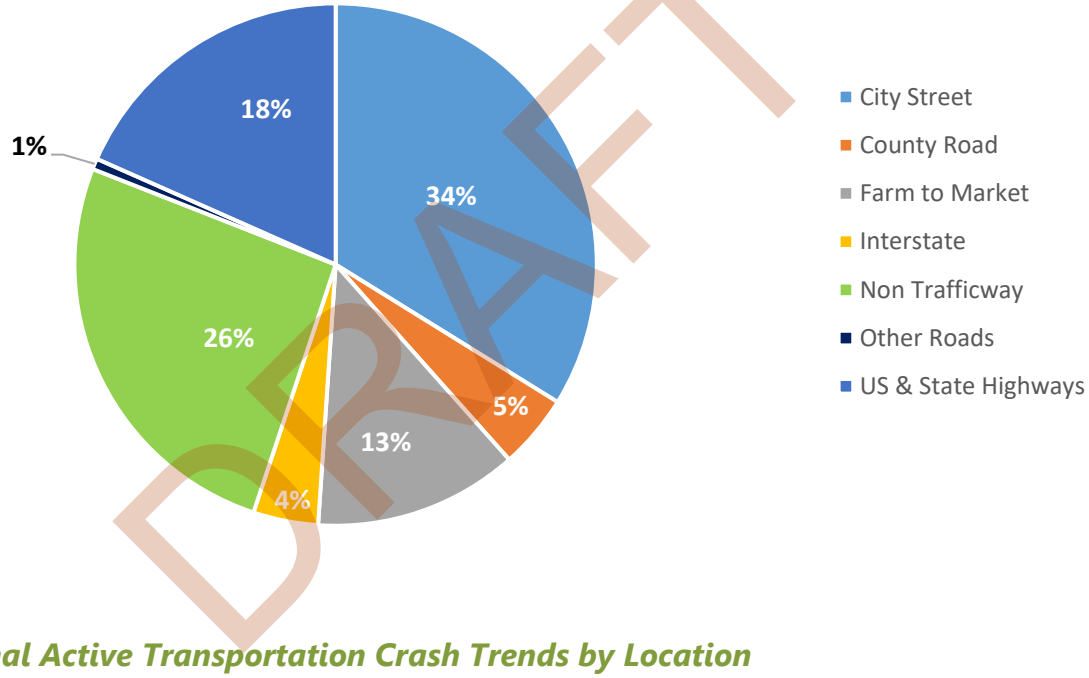
Roadway Type	Number of AT Crashes	Percent of All AT Crashes
Other Roads	15	1%
Interstate	90	4%
County Road	103	4%
Farm to Market	283	13%
US & State Highways	411	18%

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Roadway Type	Number of AT Crashes	Percent of All AT Crashes
Non Trafficway	579	26%
City Street	757	34%
Total	**2,238**	**100%**

Figure C-12 illustrates that, for the period from 2015-2019, just over a third of AT crashes occurred on city streets, just over a fourth occurred on non-trafficways (such as parking lots), just under a fifth occurred on US & State highways, and 13% occurred on Farm to Market facilities.

Figure C-12: Active Transportation Crashes by Roadway Type



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Regional Active Transportation Crash Trends by Location

In addition to understanding crash patterns based on attributes such as time, severity, and contributing factors, it is also crucial to understand locational patterns of crashes over time so that the RGVMPO and its member jurisdictions can address safety needs on a geographic basis using targeted solutions and strategies that are appropriate to specific locations and areas.

Intersection-Related Crashes

Intersections can be some of the most dangerous locations within a transportation system because they create points of interaction where various forms of transportation such as cars, bicyclists, pedestrians, and other modes make conflicting movements. Intersections can be particularly dangerous for bicyclists and pedestrians because when collisions happen, these transportation system users are unprotected from the speed and strength of moving motor vehicles. CRIS data provides attributes to determine whether a crash was intersection related, and this information can help

RGVMPO understand whether these features of its transportation network create notable safety issues for active transportation users.

Table C-15 compares the total number of intersection-related AT crashes in the region to the total amount of AT crashes overall, as well as to the total amount of all intersection-related crashes in the region, regardless of the modes of transportation involved. This information shows that a third of all AT crashes are also intersection related, while the 747 intersection-related AT crashes make up only 1% of all intersection-related crashes in the region.

Table C-15: Intersection-Related Active Transportation Crashes Compared to Other Crash Figures

Number of All Intersection-Related AT Crashes*	As a Percent of All AT Crashes	As a Percent of Total Intersection-Related Crashes* (All Modes)
747	33%	1%

*Intersection-related crash information was gathered through the pre-defined filter available from the CRIS Query Builder. The filter returns any crashes that are in any way related to an intersection or occurring within an intersection.

Table C-16 breaks out the number of all intersection-related AT crashes per year over the five-year period, as well as the number of intersection-related pedestrian crashes and intersection-related bicycle crashes for the same period.

The involvement of pedestrians versus the involvement of bicyclists within the total number of intersection-related crashes is almost exactly equal, with 374 crashes being intersection-related pedestrian crashes and 373 being intersection-related bicyclist crashes.

Table C-16: Intersection-Related Active Transportation Crashes

Year	Number of All Intersection-Related AT Crashes	Percent of All Intersection-Related AT Crashes	Number of Intersection-Related Pedestrian Crashes	Percent of Intersection-Related Pedestrian Crashes	Number of Intersection-Related Bicyclist Crashes	Percent of Intersection-Related Bicyclist Crashes
2015	159	20%	77	21%	82	22%
2016	161	21%	68	18%	93	25%
2017	136	18%	70	19%	66	18%
2018	135	18%	80	21%	55	15%
2019	156	23%	79	21%	77	20%
Total	**747**	**100%**	**374**	**100%**	**373**	**100%**

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Locations of Top AT Crash Intersections

In addition to understanding whether intersections create safety hazards for active transportation users in the region, identifying specific intersections that experienced the most AT crashes over the five-year period can help RGVMPO further fine-tune any potential solutions to its active transportation safety issues and distribute resources more efficiently.

A two-step methodology was used to identify the top AT crash intersections in the region. The first step was an Excel analysis in which the intersection flag attribute of the CRIS data was used to identify any crashes that occurred at intersections. Once the data was filtered down to include only crashes that occurred at intersections, the information in the street name and intersecting street name fields was counted to determine the number of times each specific intersection appeared in the filtered data. The second step was a GIS spatial analysis that used latitude and longitude information from the CRIS database to examine the proximity of crash points to intersection points. A buffer of 50 feet was created around each intersection in the network, and the number of AT crash points that fell within each intersection buffer was counted to determine the intersections with the most crashes in close proximity.

The intersections resulting from this two-step methodology are shown in **Table C-17**, along with the broader location of each intersection and the number of AT crashes counted there for the five-year period. To determine which intersections were considered to be "top" crash intersections, the project team used a threshold of 4 or more crashes from 2015-2019.

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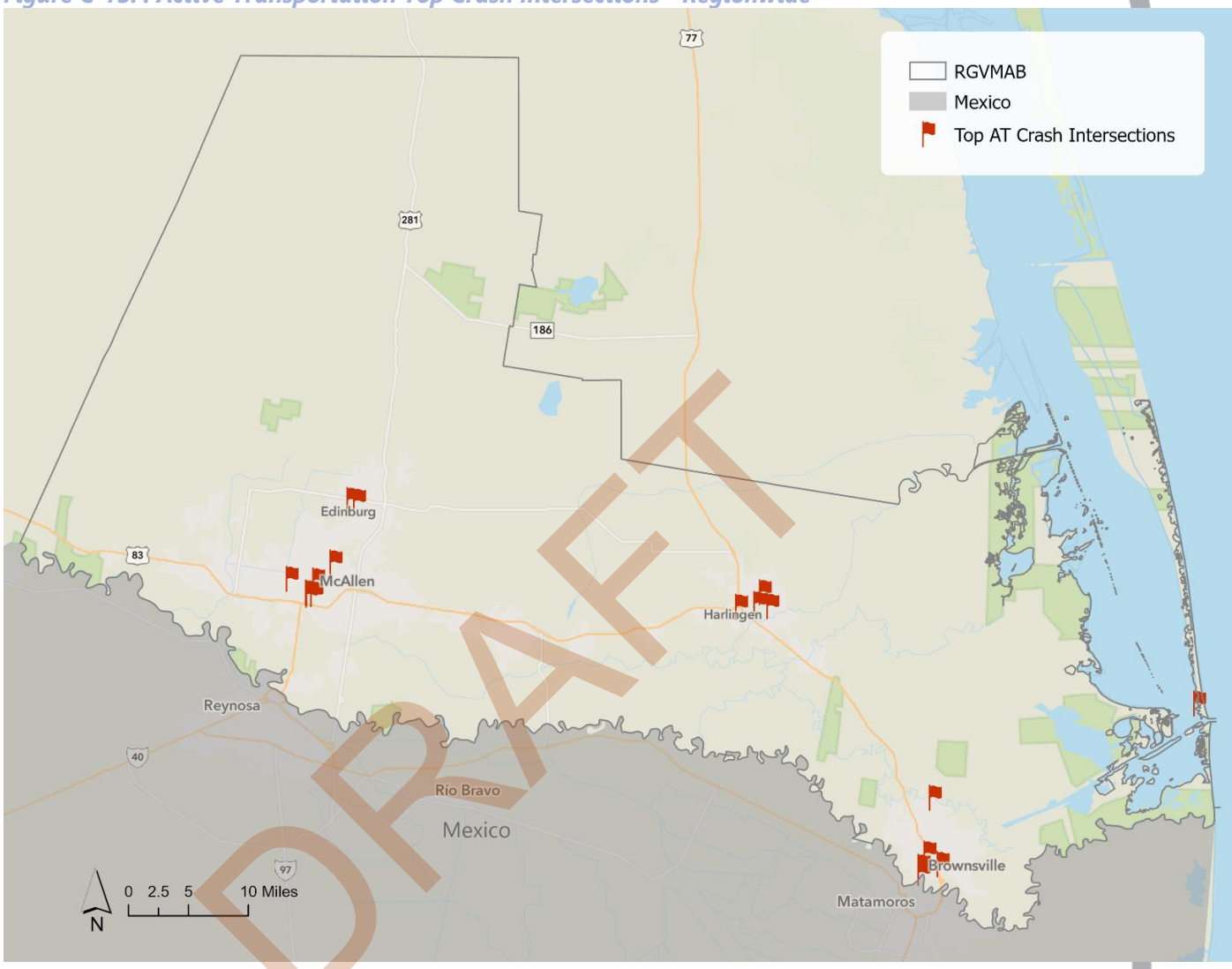
Table C-17: Top Active Transportation Crash Intersections

Intersection	Location	Crash Count
International Blvd. (SH 4) @ Southmost Blvd. (FM 1419)	Brownsville	11
Spur 206 @ IH-69E	Harlingen	8
Jackson St. (FM 3362) @ W. University Dr. (SH 107)	Edinburg	6
Paredes Line Rd. (FM 1847) @ E. Alton Gloor Blvd. (FM 3248)	Brownsville	6
16th St. @ W. US Business 83	McAllen	6
15th St. @ W. US Business 83	McAllen	6
Sugar Rd. @ W. University Dr. (SH 107)	Edinburg	6
N. 10th St. (SH 336) @ Pecan Blvd. (SH 495)	McAllen	5
N. Ware Rd. (FM 2220) @ Pecan Blvd. (SH 495)	McAllen	5
IH-69E @ Boca Chica Blvd. (SH 48)	Brownsville	5
Beaumont Ave. @ S. 15th St.	McAllen	5
E. 12th St. @ US Business 77	Brownsville	5
Spur 206 @ US Business 77 (S. 77 Sunshine Strip)	Harlingen	4
N. 7th St. @ US Business 77 (N. 77 Sunshine Strip)	Harlingen	4
E. 7th St. @ E. Jackson St.	Brownsville	4
SH 100 @ Padre Blvd. (PR 100)	South Padre	4
10th St. (SH 336) @ W. US Business 83	McAllen	4
N. McColl Rd. (FM 2061) @ Nolana Ave. (FM 3461)	McAllen	4
1st St. @ Jackson St.	Harlingen	4

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Figure C-13 shows the top AT crash intersections identified throughout the region using the two-step methodology. **Figure C-14, Figure C-15, Figure C-16**, and **Figure C-17** provide closer looks at the areas where these top crash intersections are concentrated within the RGVMAB.

Figure C-13: : Active Transportation Top Crash Intersections - Regionwide



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Figure C-14: Active Transportation Top Crash Intersections – McAllen & Edinburg

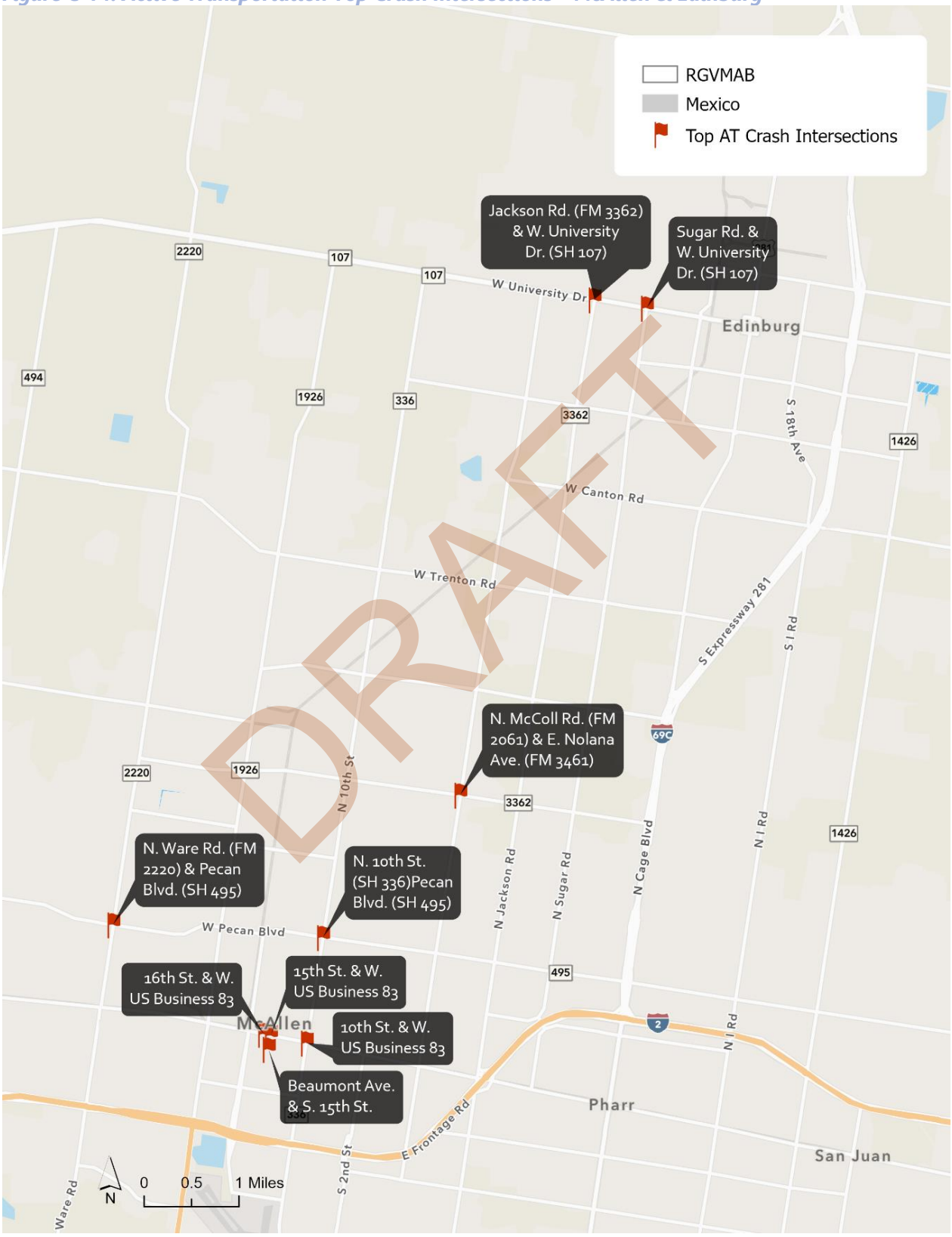


Figure C-15: Active Transportation Top Crash Intersections - Harlingen



Figure C-16: Active Transportation Top Crash Intersections - Brownsville

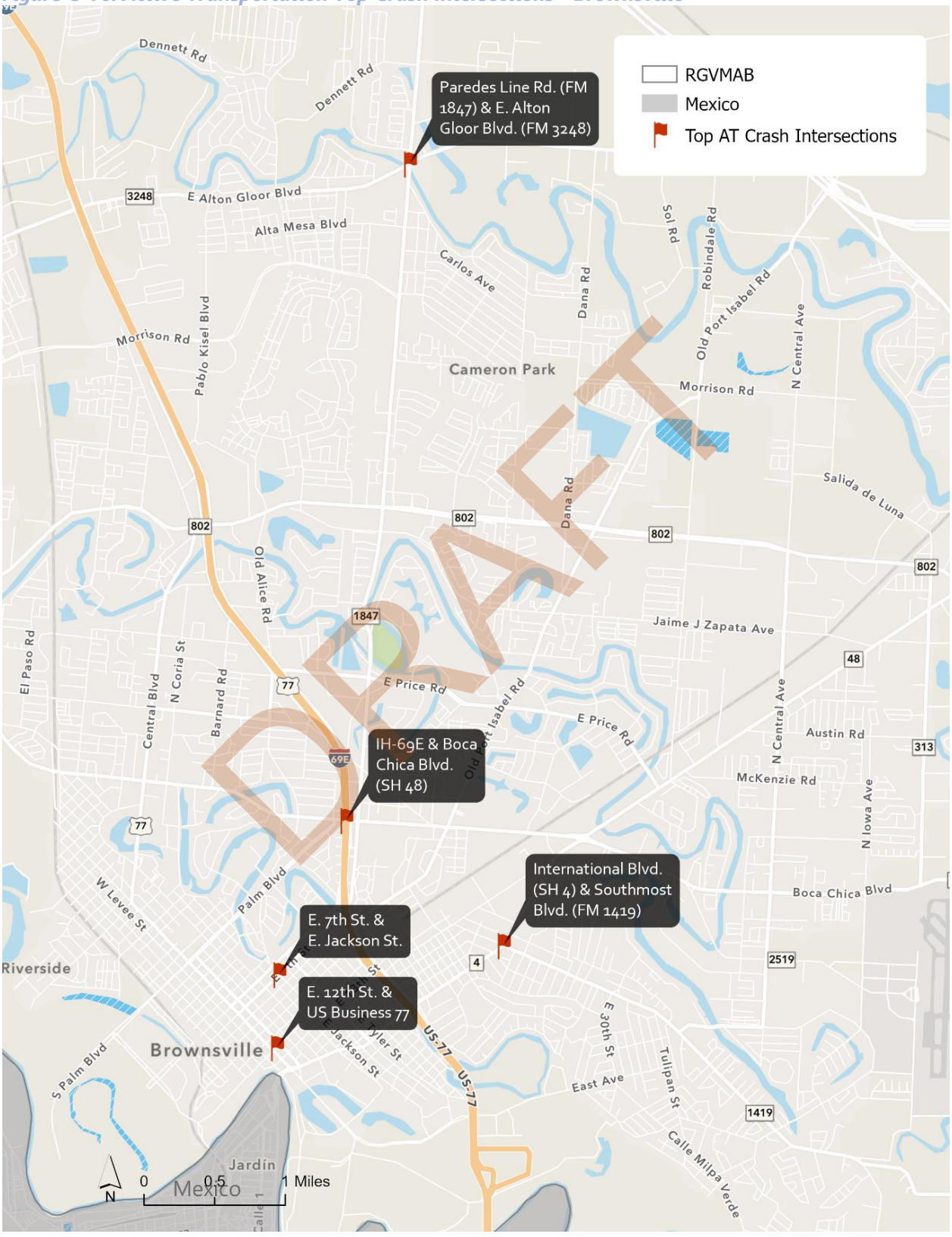


Figure C-17: Active Transportation Top Crash Intersection - South Padre Island



NETWORK ANALYSIS

Bicycle Level of Traffic Stress

A Bicycle Level of Traffic Stress analysis (LTS) used roadway characteristic factors to estimate how an average person would feel while using a bicycle on a given segment of roadway. Roadway characteristics that influence a decision to cycle include high vehicle speed, high traffic volumes, wide roads, or lack of designed space for bicycles. Roadway factors that contribute to comfort include, low speeds, presence of a bike facility, especially those separated from traffic, and traffic calming measures.

The LTS analysis identified gaps/deficiencies in the region's roadway network where bicyclists do not have comfortable travel options. It also provided a look at opportunities for safe comfortable roadways, produced updated LTS data inventories for the region and provided an inventory to guide the region's discussions on future facility upgrade alternatives.

Methodology

The methodology for this analysis was conducted using a method modified from a 2012 report by the Mineta Transportation Institute (MTI) titled, *Low-Stress Bicycling and Network Connectivity*[1], which is widely credited in similar analysis from other existing condition analysis reports. The project team used a data-driven process considering the following factors to better understand how they relate to perceptions of bicycle comfort:

- Posted speed limits
- Number of travel lanes; and
- Presence of bicycle facility by type

All measures were attributed to RGVMPO travel demand model roadway segments within the RGVMAB. Staff used the four bicycle LTS categories defined in the MTI report and accordingly, a network was produced, flagging roadways that matched. Each of the four designated levels of comfort, are described in **Table C-18.**

Table C-18: Level of Traffic Stress (LTS) Descriptions

Level of Stress	Description
1 (Low Stress)	Presents little traffic stress and is comfortable for most all users, including children and families.
2	Presents little traffic stress and is suitable for many adult users or those with some cycling experience.
3	Presents some traffic stress and is suitable for only those who are confident or possess significant cycling experience.
4 (High Stress)	Only comfortable for the most confident bicyclist and not suitable for the average user.

**Due to variability and gaps in data, not all segments with given LTS scores may reflect real life conditions.*

As with all bicycle LTS and similar bicycle comfortability/safety perception analyses, the dispersion of metrics (e.g. facility design, traffic volumes, and automobile speeds) into categories and outcomes were highly dependent upon data availability. The project team used MTI's LTS methodology as a

[1] (Mineta Transportation Institute, 2012)

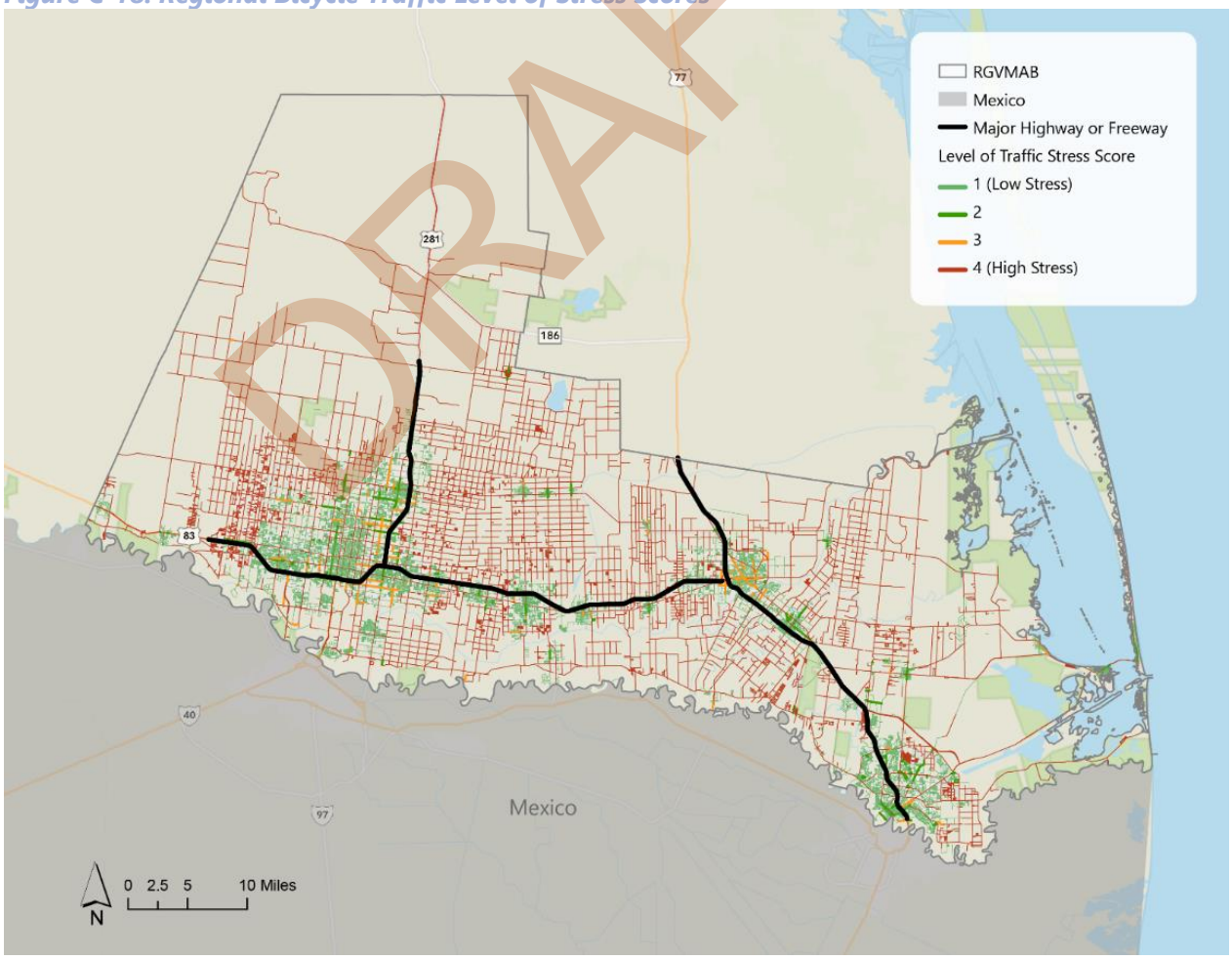
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guide for choosing applicable metrics and determining how to best apply them to the analysis. to the LTS category range. It is important to note that roadway shoulder width was not considered in this analysis as it does not necessarily make a high speed or high-volume roadway comfortable for bicycling for the average user. Shoulder width is also not incorporated in the MTI methodology however, it is important to recognize that wide shoulders are valuable for confident users and act as important connections, especially in recreational riding networks. Roadways with wide shoulders will be analyzed in the Network Development and Recommendations section of this plan. It should be noted that the data for a few specific rural roadways that serve as local streets did not contain speed limit information. Without speed, limit data for some rural roadways the LTS score for these roadways may be skewed and reported as higher stress than is experienced in the field.

Results

Figure C-18 shows LTS scores across the RGVMAB. Many rural roadways are classified as LTS 4 or the highest level of stress. Speed limits on many of these roadways are the main contributing factor, as even small increases of speed by 5-10 miles per hours can result in a large jump in stress by a person biking. Urban areas in the RGVMAB contain a larger concentration of low stress roadways.

Figure C-18: Regional Bicycle Traffic Level of Stress Scores

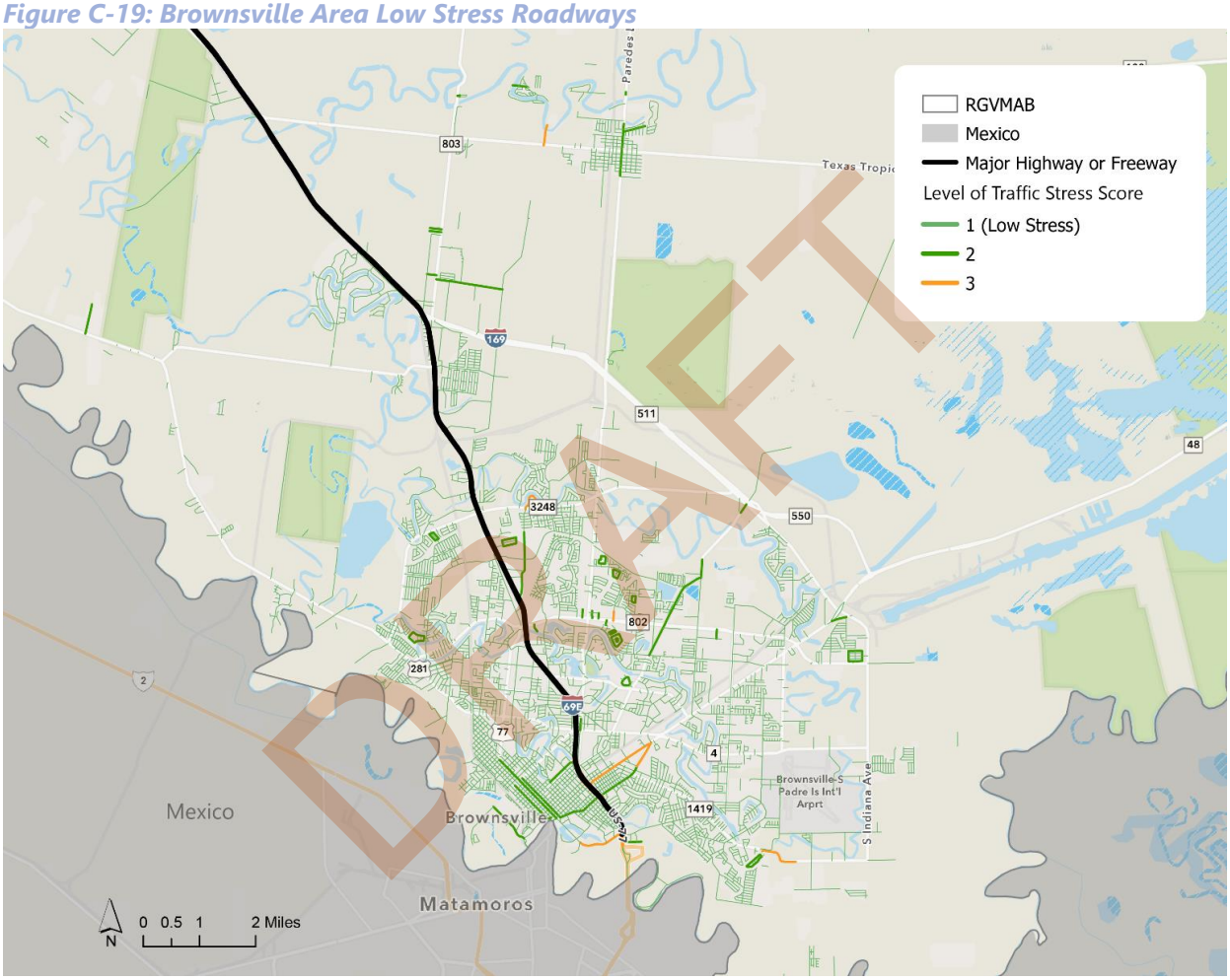


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On the following pages, **Figure C-19**, **Figure C-20**, and **Figure C-21** show only the LTS scores 1 to 3 in each urban area within the RGVMAB. This shows a high-level estimate of the low stress roadways potentially available for use in the active transportation network.

In the Brownsville area, there are many local streets for low stress riding, however connections to other low stress routes may wane as the gridded roadway network dissipates further from the urban core.

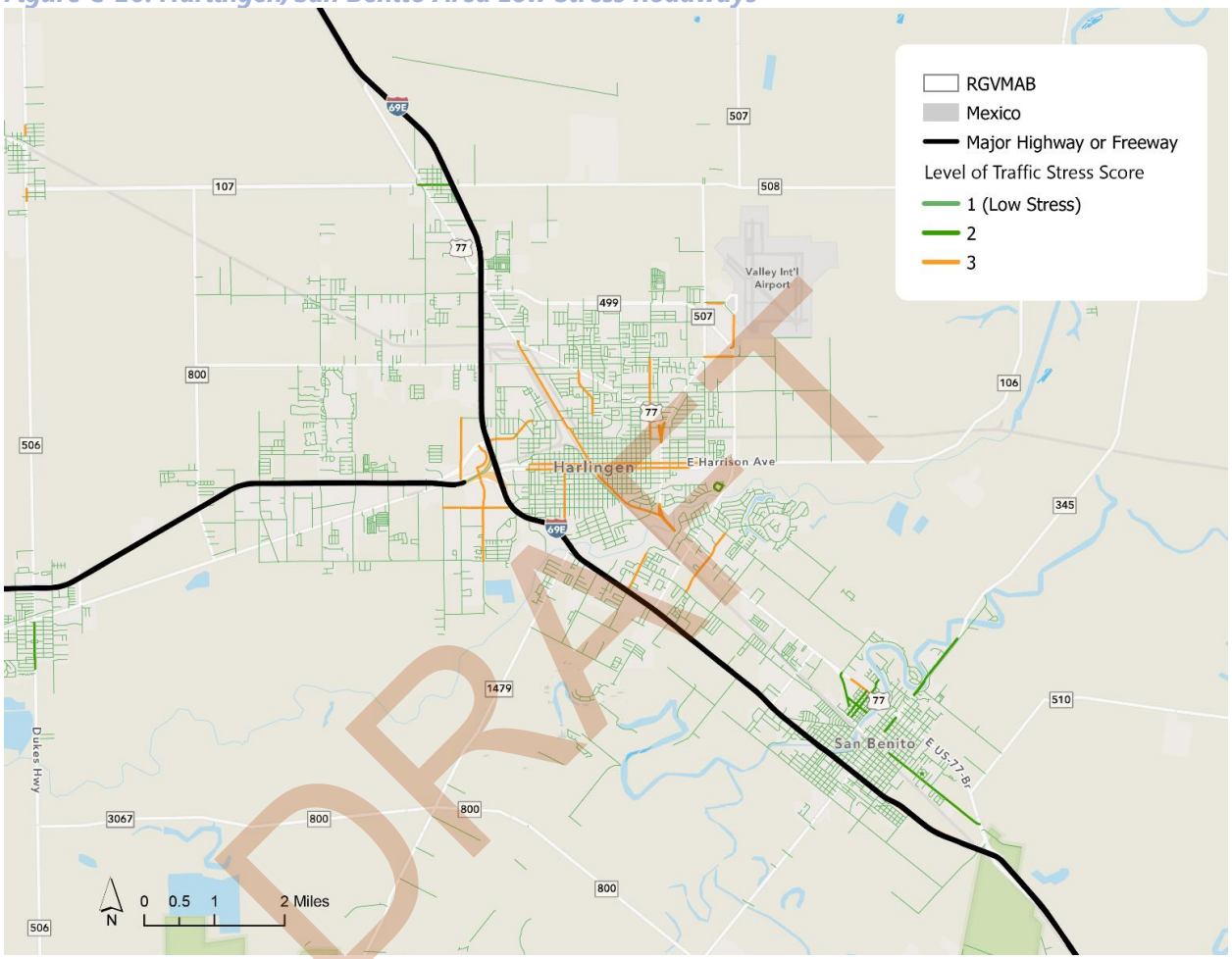
Figure C-19: Brownsville Area Low Stress Roadways



*LTS 4 not included at this scale

In the Harlingen and San Benito areas, much of the gridded roadway network provides low stress connectivity for active transportation users. Additionally, Hale St. and Shafer Rd. may provide low stress connection between the two communities.

Figure C-20: Harlingen/San Benito Area Low Stress Roadways

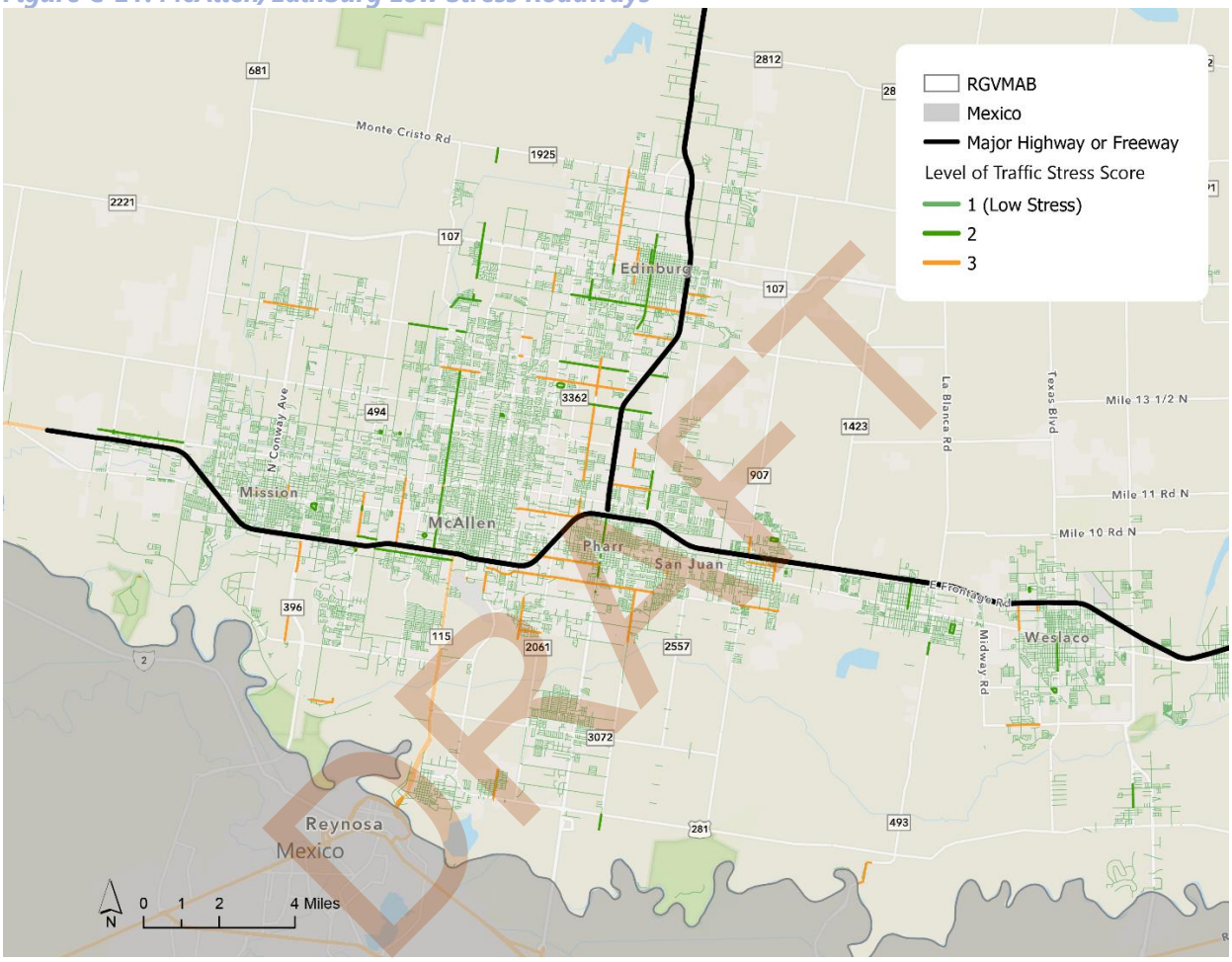


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*LTS 4 not included at this scale

In the urban region of McAllen and Edinburg, each of the communities presents options for low stress connectivity. However, connections between each community are more limited. This is especially true for east to west connections along the major transportation thoroughfares, appearing to make travel using a bike difficult for most users.

Figure C-21: McAllen/Edinburg Low Stress Roadways



* LTS 4 not included at this scale

To summarize the findings for the analysis at a regional level, low stress connections are available in many communities however, connectivity for all users is limited, especially east to west along the major interstate corridor. This may be an opportunity for regional collaboration on an off-street trail system.

Pedestrian Accessibility

The pedestrian network consists of sidewalks or Hike and Bike trail facilities. Sidewalk facilities are the backbone of this network and present mobility options for short trips so people can reach their destinations. Sidewalks, however, are bound to the location of the roadway network. A denser, more connected street network will typically indicate lower vehicle speeds, shorter walking trip distances and a greater concentration of destinations. Intersection density is a measure of how many intersections exist per square mile. Intersection density is a major factor to the propensity for people to walk or bike, along with other supporting factors like, sidewalk setback, safe crossings, placemaking, and trees or shade. Intersection density was chosen to analyze as it is the building block for all other factors. In a poorly connected street network with low intersection density, walkability can greatly suffer and only be encouraged to an extent with mentioned supporting factors.

Methodology

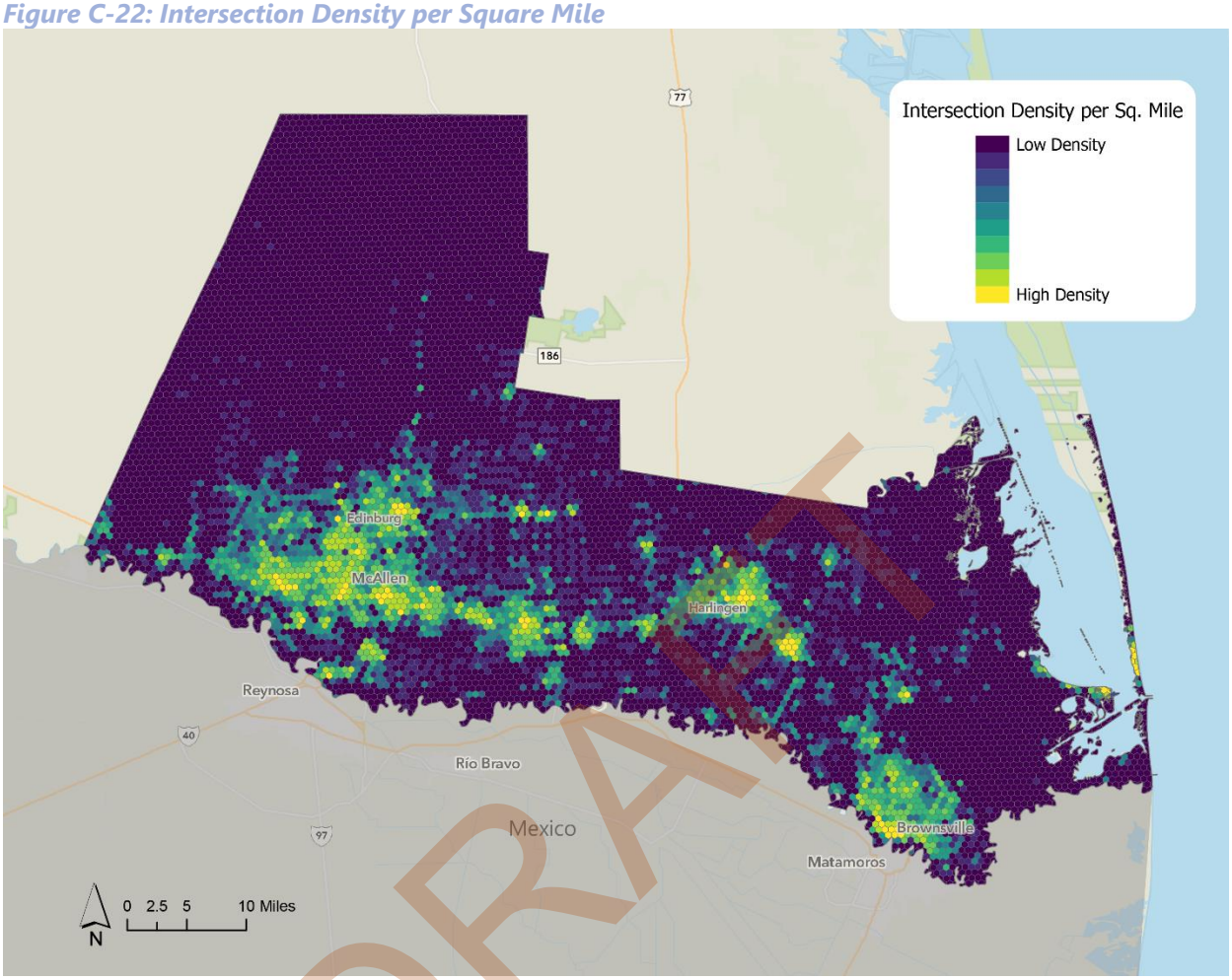
Intersection density was calculated using roadways provided by the RGVMPO to identify intersections, or where more than one roadway crosses. To map the density of intersections per square mile, the project team opted to use a ¼ square mile hexagonal layer to show the distribution of intersection points. This method allows for an equal visual representation of density throughout the region, displaying both the more rural areas and urban areas with a standard unit. This allows for representation that more closely aligns with roadway locations and shapes over other displays such as a census block group which varies in size and is often divided along roadways. The number of intersections were spatial joined to the hexagons, to display the density of intersections per square miles.

Results

Figure C-22 shows high intersection density in larger urban centers like Edinburg and Brownsville, but also captures high intersection density in smaller communities like Elsa and Edcouch. Intersection density ranged from 0 on the low end, in the purple areas, to 442 per square mile on the high end, in the yellow areas. If sidewalks are present in the areas with high intersection density, this would support a higher propensity for walking. Conversely, if sidewalks are not present, it may indicate a missed opportunity or unmet need for people who desire to walk. A major takeaway from this analysis is the supportive urban network that exists for walking, even outside of urban areas in the RGVMAB.

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Figure C-22: Intersection Density per Square Mile



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Transit Proximity

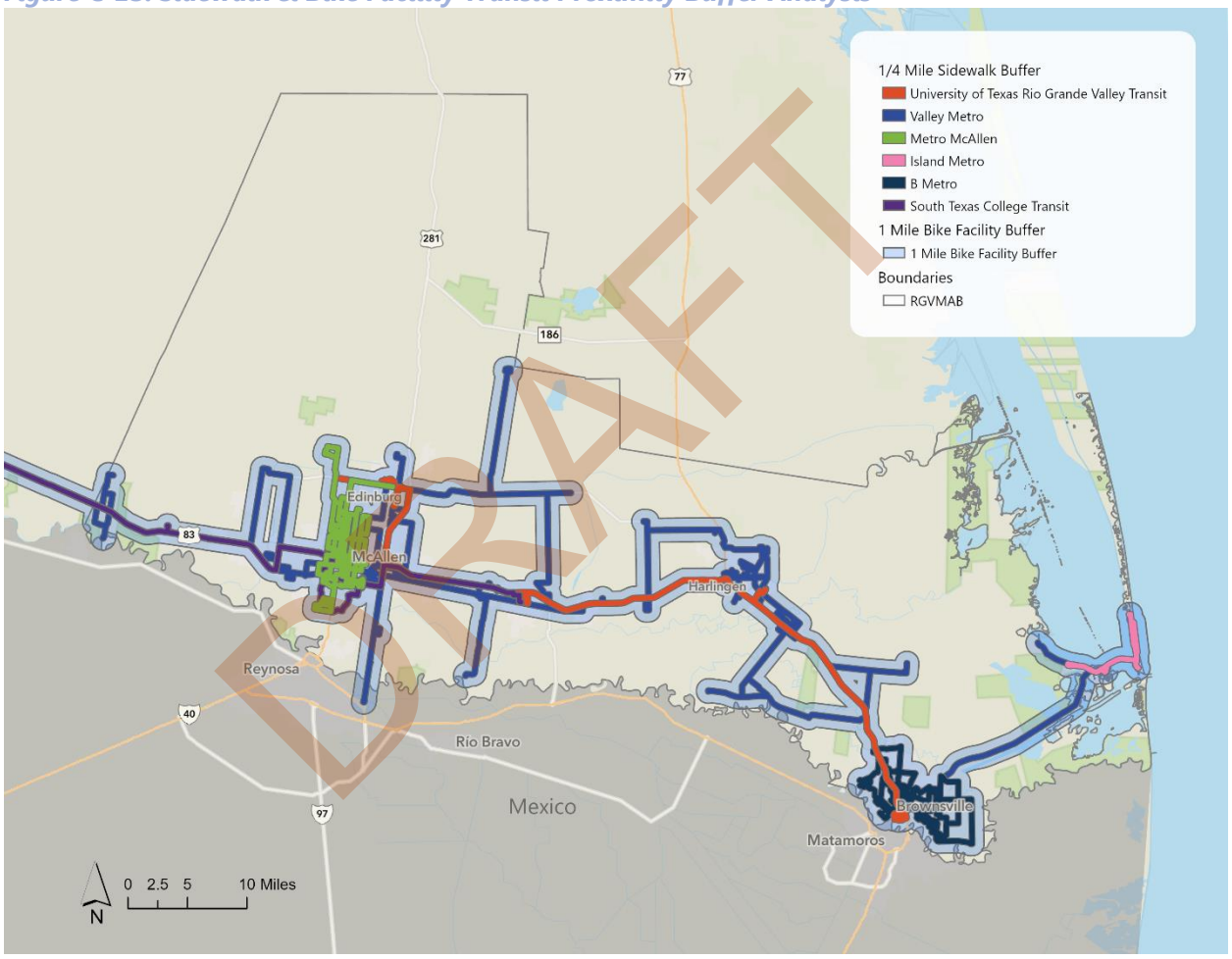
There are six (6) transit agencies within the RGVMAB, which provide service to the densest areas of the region and to Rio Grande City and Roma, just to the west of the RGVMAB. These routes should be accompanied by the proper infrastructure that allows pedestrians and bicyclists to travel safely from the origin to the nearest bus stop and from the bus stop to their destination. In addition, getting to the transit station may not be enough. End of trip facilities should also be provided to allow people to lock up their bike, take their bike on the front of the bus, and to wait in relative shade. Proper infrastructure in many cases means ADA compliant sidewalks to accommodate people who walk or use a mobility devise, and bike facilities (on- or off-street bike facilities) to accommodate those who use a bike. This type of infrastructure in place not only ensures a safe trip from origin to destination, but increases overall connectivity within the transportation network, and helps provide a solution to the first-last mile dilemma. In addition, it encourages forms of active transportation which have a variety of positive impacts (environmental, health, economic, etc.).

Methodology

To better understand what connections transit riders, have available to walk or bike to a stop, a review was completed to inventory all active transportation facilities within walking or biking distance of

transit. All of the transit routes that service the RGVMAB were reviewed in the analysis. A buffer of ¼ mile was placed on each route to review the sidewalk infrastructure that exists within ¼ mile. Within a ¼ mile is the general distance transit users are willing to walk to access transit services. A one-mile buffer was applied to each route to review the existing bike facilities within a mile of each route, as transit users are typically willing to ride up to a mile to access transit services. **Figure C-23** gives a regional visual representation of the two buffers used to analyze the walking (¼ mile buffer) and the bicycling (1-mile buffer) infrastructure within the RGVMAB, while differentiating between the six transit providers.

Figure C-23: Sidewalk & Bike Facility Transit Proximity Buffer Analysis



Additionally, this analysis incorporated bike and pedestrian facilities that were within close proximity to provider connections within the region. **Figure C-24** shows the location of each provider connection. Major transit activity areas generally incentivize transit users to travel slightly farther distances due to the amenities they provide or the route connections available. To better understand conditions near the provider connections, an inventory of the percent of roads with no sidewalks and the road distance (miles) without sidewalks within ½ miles rather than ¼ mile, of each Provider Connection was created. This analysis was performed by comparing the length of roadways to the length of sidewalks within the ½ mile buffer.

Figure C-24: Overview of RGVMAB Provider Connections



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Results

When analyzing bicycle and pedestrian infrastructure within a large region, such as the RGVMAB, it is important to pinpoint the regional connection points within the transportation network. These areas usually correspond with the urban centers of a region, which require the most attention when taking an inventory of sidewalk and bike infrastructure, as active transportation activities such as biking and walking occur most frequently in the urban core. Additionally, the majority of transit trips take place within the urban core, which indicates a higher need for the proper infrastructure to increase access to transit. In the case of the RGVMAB, the three major urban areas are Brownsville, Harlingen-San Benito, and McAllen-Edinburg.

Figure C-25**,**

Figure C-27**,** and **Figure C-30** detail a local and regional inventory of the active transportation facilities within close proximity to the transit services available within the RGVMAB.

The following

Table C-20**,**

Table C-21**,** and **Table C-22** along with **Figure C-26,**

Figure C-28**, Figure C-29,**

Figure C-31 and **Figure C-32** display sidewalks within 1/2mile of each Provider Connection. The analysis shows which Provider Connections may lack adequate facilities for people to walk to the transit stop, which may help prioritize future sidewalk improvements in these areas. The analysis indicates that Weslaco Transit Center, is the Provider Connection that could most use additional sidewalks.

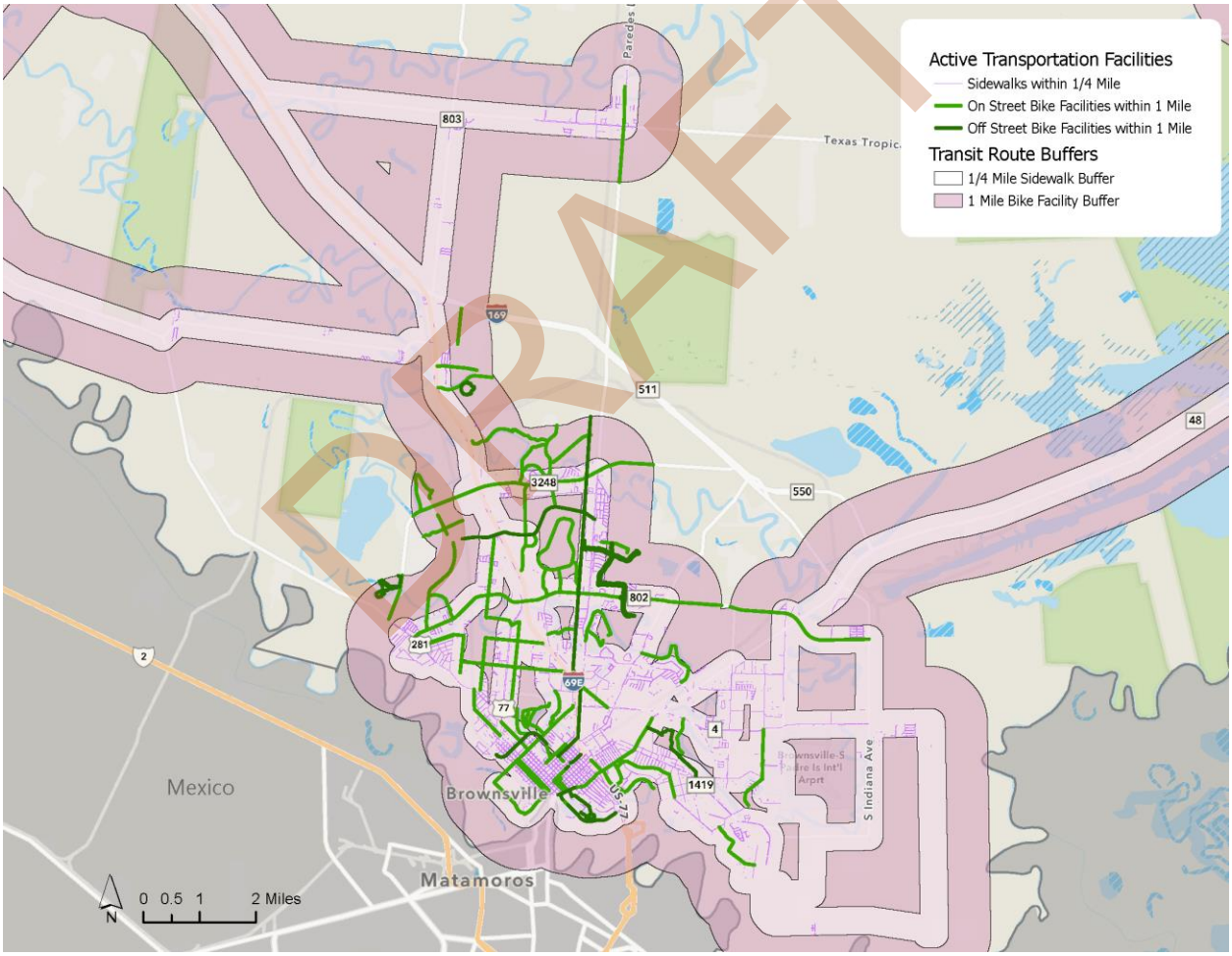
Table C-19: Sidewalk Coverage at Provider Connections

Provider Connection	Percent of roads with sidewalks	Road distance with sidewalks (miles)
Weslaco Valley Metro Transit Center	11%	0.5
San Juan Station	15%	2.0
Foy's Supermarket	18%	2.2
La Feria City Hall	25%	3.1
Edinburg Transit Terminal	35%	4.7
Donna City Square Park	35%	4.7
UTRGV Visual Arts Building	36%	3.2
UTRGV Regional Academic Health Center	40%	3.3
UT Rio Grande Valley	42%	3.4
South Texas College Pecan Campus	43%	4.7
San Benito City Hall	44%	7.1
Hidalgo County Court	46%	8.3
Harlingen Terminal and Greyhound Bus Station	56%	9.4
STC Nursing Center	56%	2.9
La Plaza Brownsville	60%	8.3
McAllen Central Station	61%	11.0

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BROWNSVILLE

Figure C-25: Brownsville Active Transportation Facilities within Close Proximity of Transit Routes

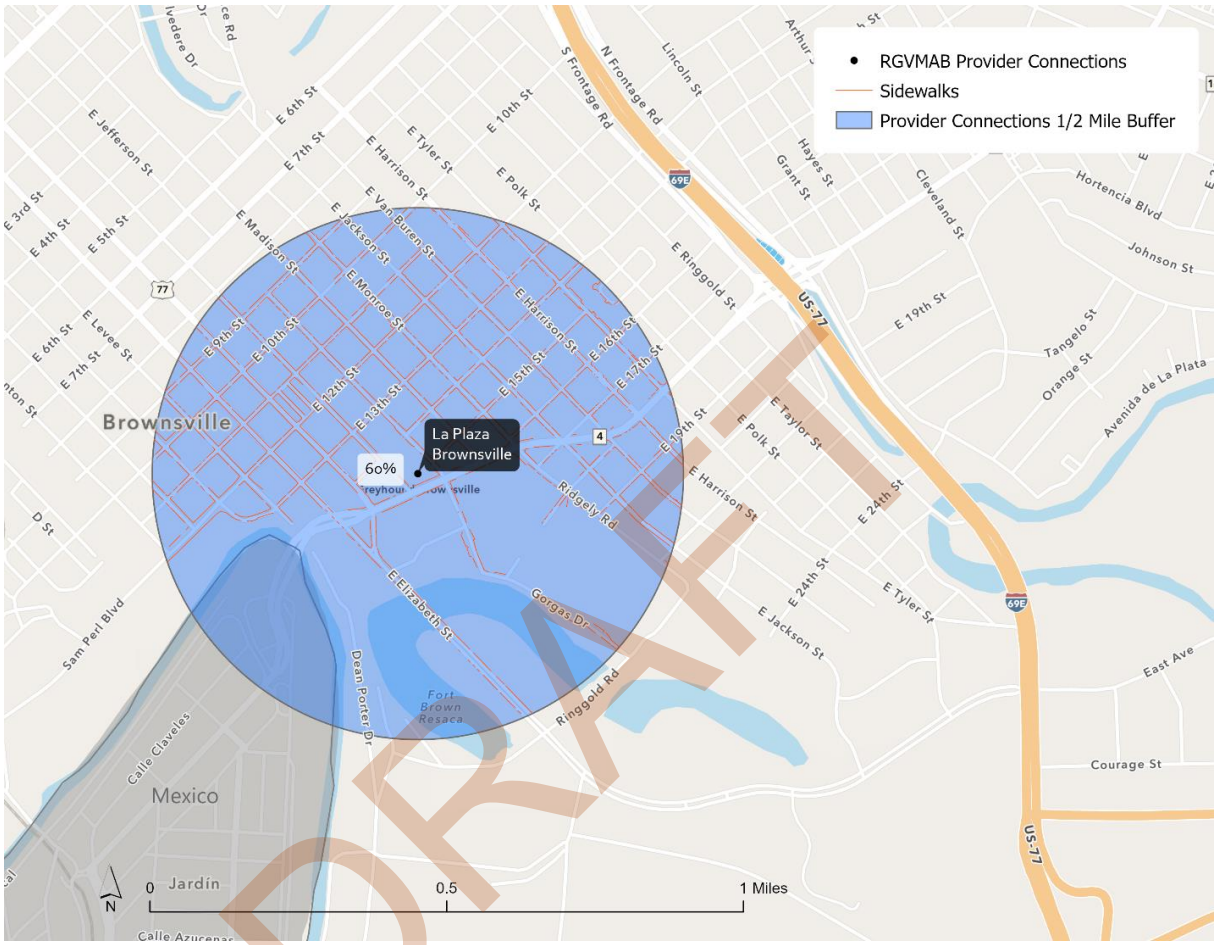


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Table C-20: Inventory of Brownsville Sidewalk Facilities within 1/2 Mile of Provider Connections

Provider Connection	Percent of roads with sidewalks	Road distance with sidewalks (miles)
La Plaza Brownsville	60%	8.3

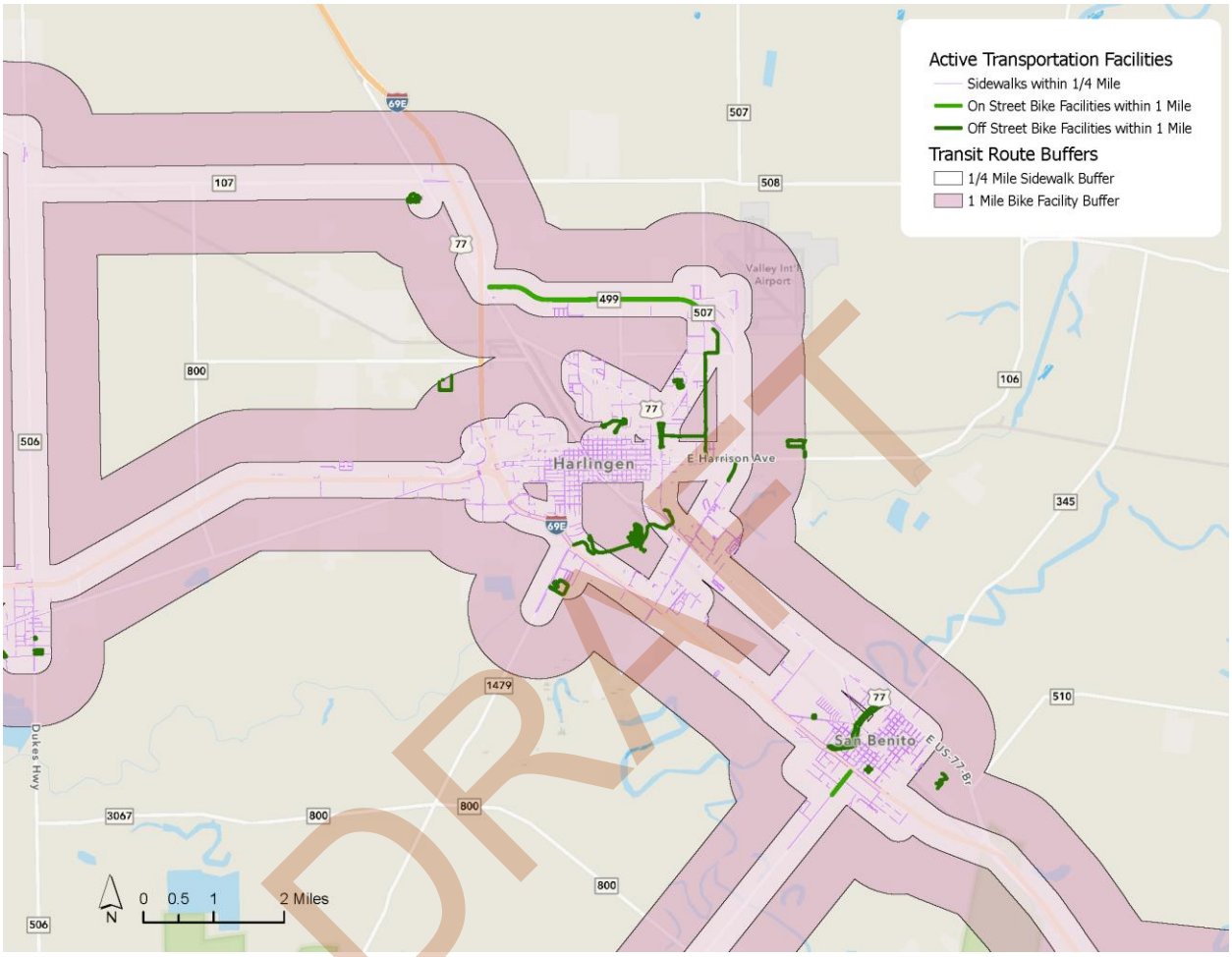
Figure C-26: Percent of Roadways within 1/2 Mile of Brownsville Provider Connections with Sidewalks Present



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HARLINGEN-SAN BENITO

Figure C-27: Harlingen-San Benito Active Transportation Facilities within Close Proximity of Transit Routes

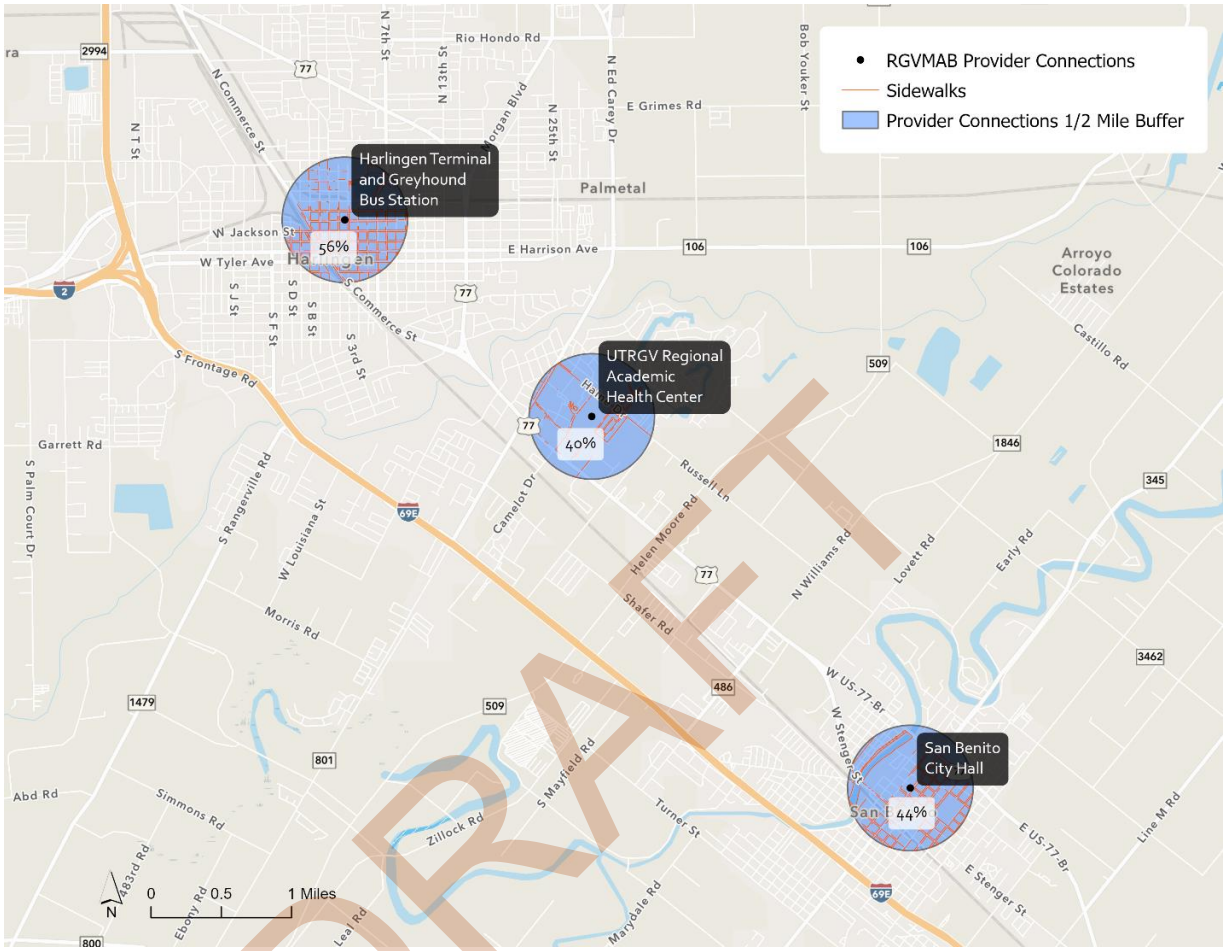


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Table C-21: Inventory of Harlingen-San Benito Sidewalk Facilities within 1/2 Mile of Provider Connections

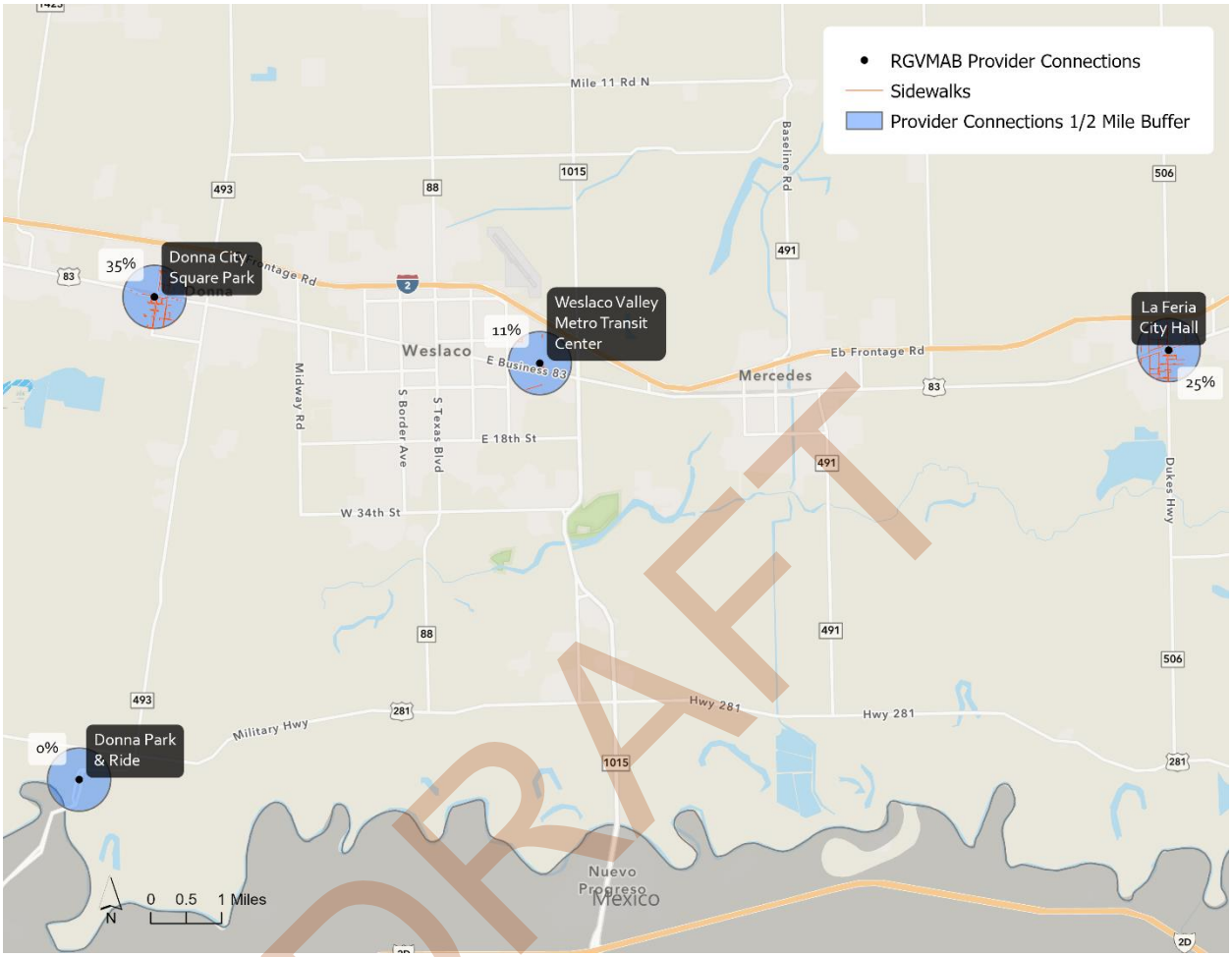
Provider Connection	Percent of Roads with Sidewalks	Road Distance with Sidewalks (miles)
Weslaco Valley Metro Transit Center	11%	0.5
La Feria City Hall	25%	3.1
Donna City Square Park	35%	4.7
UTRGV Regional Academic Health Center	40%	3.3
San Benito City Hall	44%	7.1
Harlingen Terminal and Greyhound Bus Station	56%	9.4

Figure C-28: Percent of Roadways with Sidewalks Present within 1/2 Mile of Harlingen Provider Connections



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Figure C-29: Percent of Roadways with Sidewalks Present within 1/2 Mile of Weslaco Provider Connections



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MCALLEN-EDINBURG

Figure C-30: McAllen-Edinburg Active Transportation Facilities within Close Proximity of Transit Routes

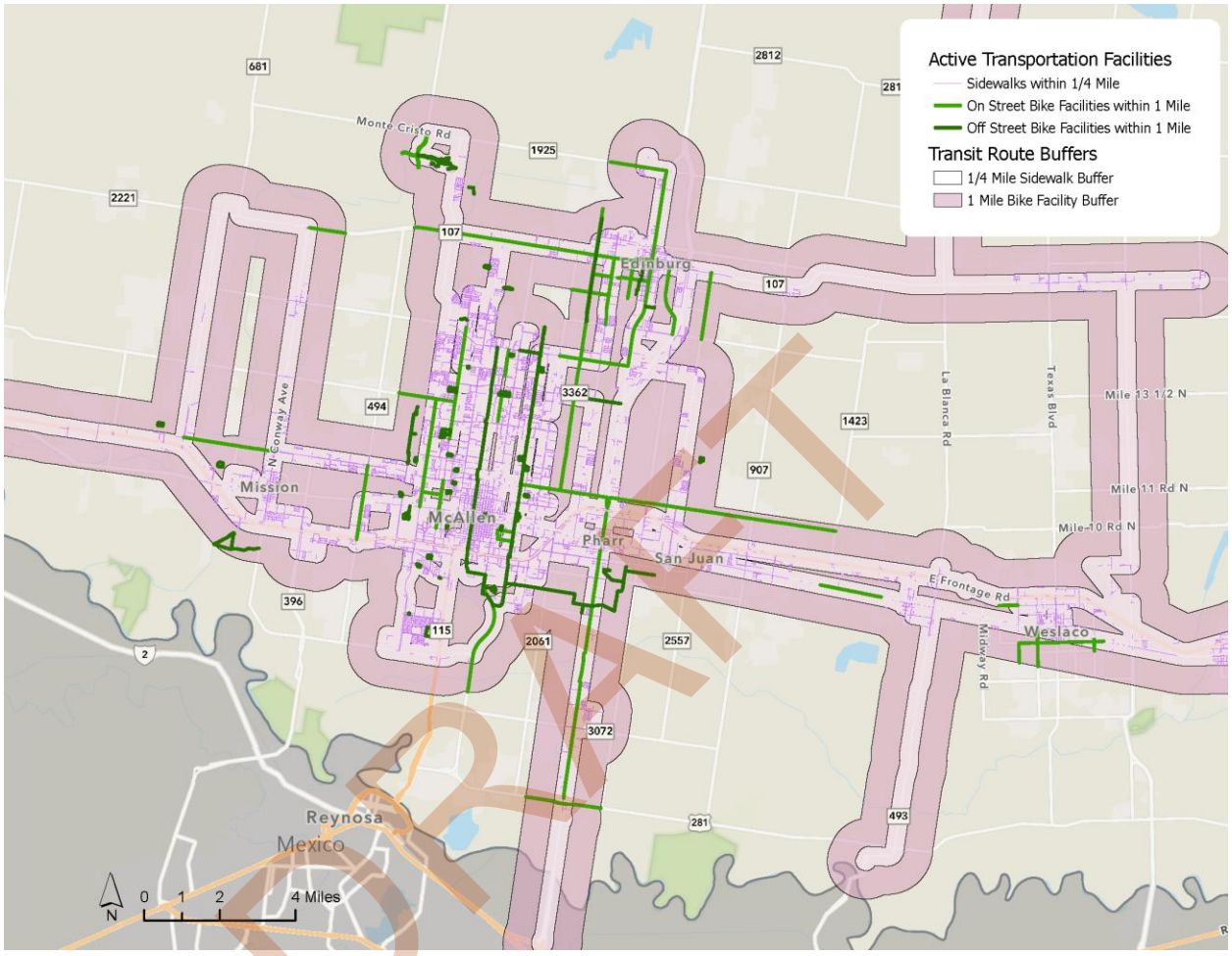
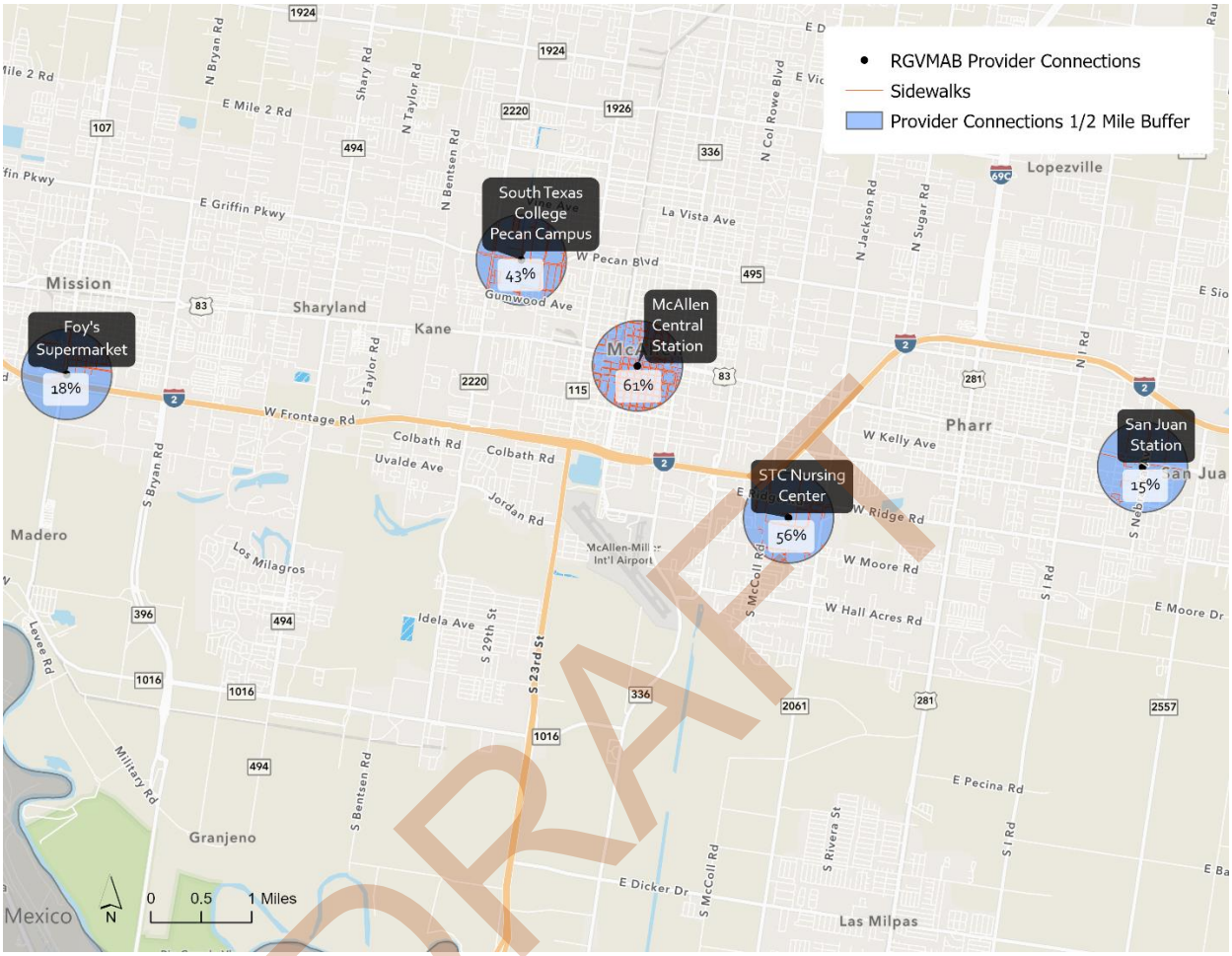


Table C-22: Inventory of McAllen-Edinburg Sidewalk Facilities within 1/2 Mile of Provider Connections

Provider Connection	Percent of Roads with Sidewalks	Road Distance with Sidewalks (miles)
San Juan Station	15%	2.0
Foy's Supermarket	18%	2.2
Edinburg Transit Terminal	35%	4.7
UTRGV Visual Arts Building	36%	3.2
UT Rio Grande Valley	42%	3.4
South Texas College Pecan Campus	43%	4.7
Hidalgo County Court	46%	8.3
STC Nursing Center	56%	2.9
McAllen Central Station	61%	11.0

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Figure C-31: Percent of Roadways within 1/2 Mile of McAllen Provider Connections with Sidewalks Present



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Figure C-32: Percent of Roadways within 1/2 Mile of Edinburg Provider Connections with Sidewalks Present



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Travel Patterns

Short trips, trips less than 2 miles, in urban areas can often be made by modes other than a car, such as walking, biking, or using transit. Most urban areas support these modes because of the dense land use that lends to shorter distances between trip origins and destinations, as compared to rural or suburban areas.

Methodology

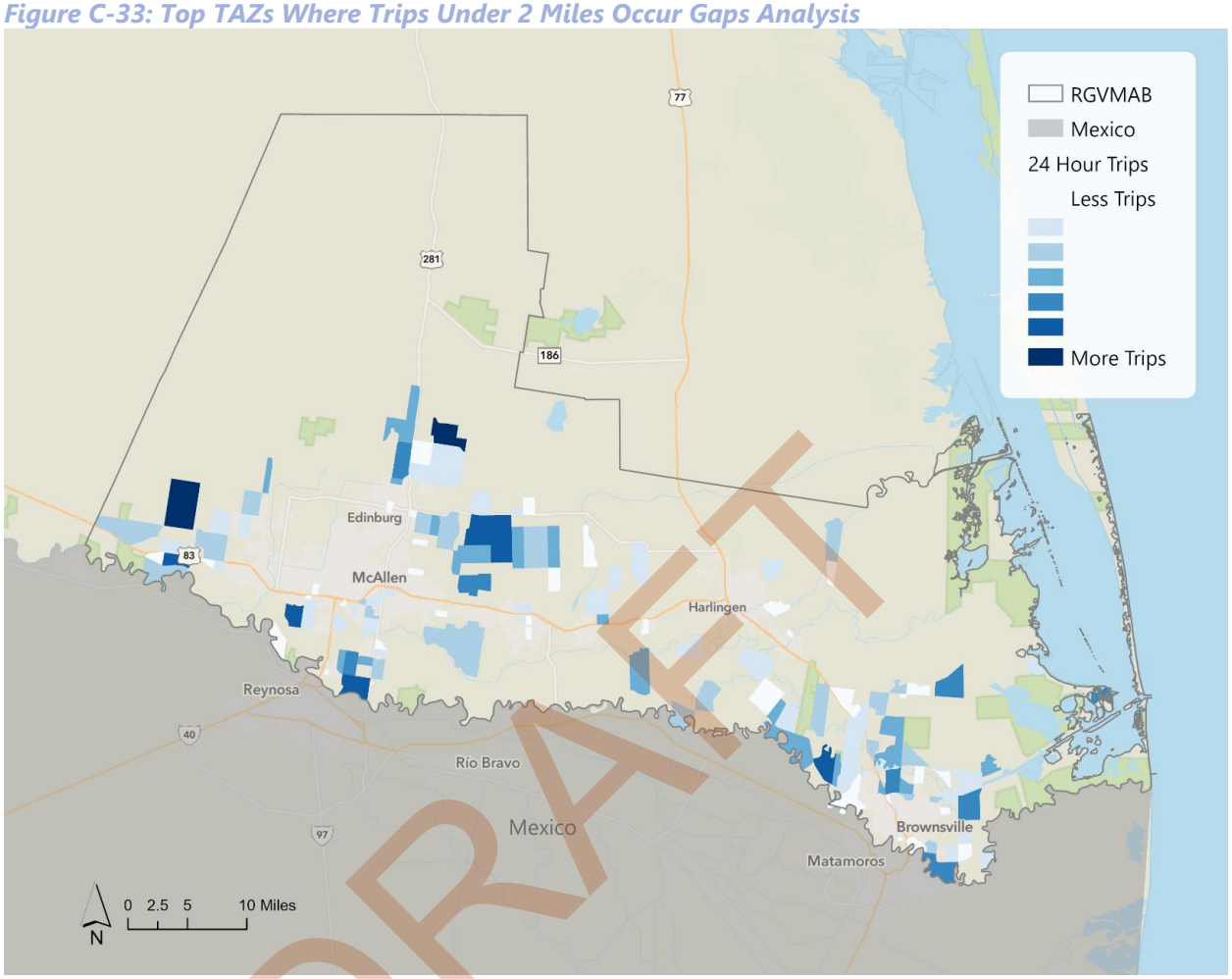
To see where short trips occur, the project team used RGVMPO travel demand model data for 24-hour trip estimates. The travel demand model does not capture trips made by active transportation modes. It only captures trips made in motorized vehicles. The unit of geography used in the TDM is a traffic analysis zone (TAZ). TAZs where the top 250 short trips under 2 miles occur were identified.

Results

Figure C-33 shows the location of top trip TAZs. The data points out that locations with the most trips under 2 miles occur predominantly outside of the urban areas within the RGVMAB. The analysis suggests two things. Firstly, facilities for walking and biking are relatively vacant from the top trip TAZs, so residents in those areas may not have any other mode choices than to use a personal vehicle. Secondly, while urban areas show fewer short top trip TAZs, this may signal that residents are able to use modes not captured in the travel demand model data. For example, McAllen and Brownsville have pockets in their densest areas where there are no top trip TAZs, however, these areas contain facilities for walking and biking to accomplish daily needs. In summary, those top trip TAZs may benefit from additional active transportation facilities to support short trips by active modes.

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Figure C-33: Top TAZs Where Trips Under 2 Miles Occur Gaps Analysis



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Gap Analysis

To better understand where disparities within the RGVMAB occur between demand and supply for active transportation facilities, a gap analysis was conducted. Current walking and biking facilities were overlaid with a map of relative demand, based on seven criteria described in the methodology below. Creating a comprehensive view of existing supply and demand for active transportation facilities allows gaps to be identified and discussed with the community, which provides solutions tailored towards community needs.

Methodology

Demand was determined using seven characteristics that are driving factors that indicate a need for trips using active modes, such as walking and biking. Data was collected from Longitudinal Employer-Household Dynamics data by the US Census (LEHD), CRIS, US Census 2019 American Community Survey data (ACS), ArcGIS Business Facilities Search Tool (ArcGIS), and TxDOT's GIS roadway inventory. **Table C-23** describes each of the seven factors.

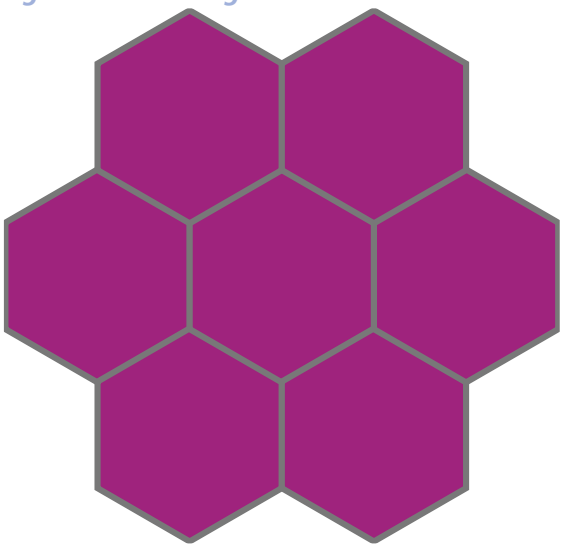
Table C-23: Gap Analysis Criteria

Criteria	Description	Geography	Data Source
Population & Employment	Total count of people and jobs per square mile.	Census Block Groups	ACS & LEHD
Population with a Disability	Percent of total population with a disability.	Census Block Groups	ACS
Population in Poverty	Percent of total population in poverty.	Census Block Groups	ACS
No Vehicle Households	Percent of total household without access to vehicle.	Census Block Groups	ACS
Crashes	Number of crashes	Point Data	CRIS
Key Destinations	Number of key destinations including: Schools, Grocery Stores, Medical Facilities, Civic Amenities, and Recreation Facilities	Point Data	ArcGIS
Intersections	Number of Intersections	Point Data	TxDOT

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To make it easier to draw uniform comparisons between these criteria the data was standardized. The first method for creating a standard unit of measurement was to develop one identical unit of geography as the analysis compares datasets with different geographies (i.e. polygon and point data). This step allowed the project team to locate active transportation gaps that may not appear only using census polygon geographies. For example, the needs of small communities located in rural areas may not be accurately represented within a large Census block group, and thus a gap may not be identified. One method of standardizing geography is to use hexagonal grids to aggregate and compare data. This helps reveal patterns in the data and is suitable for both shape-based and point-based data. For this analysis, the region was divided into hexagons that are 0.125 or 1/8th square miles each (**Figure C-34**).

Figure C-34: Hexagonal Grid

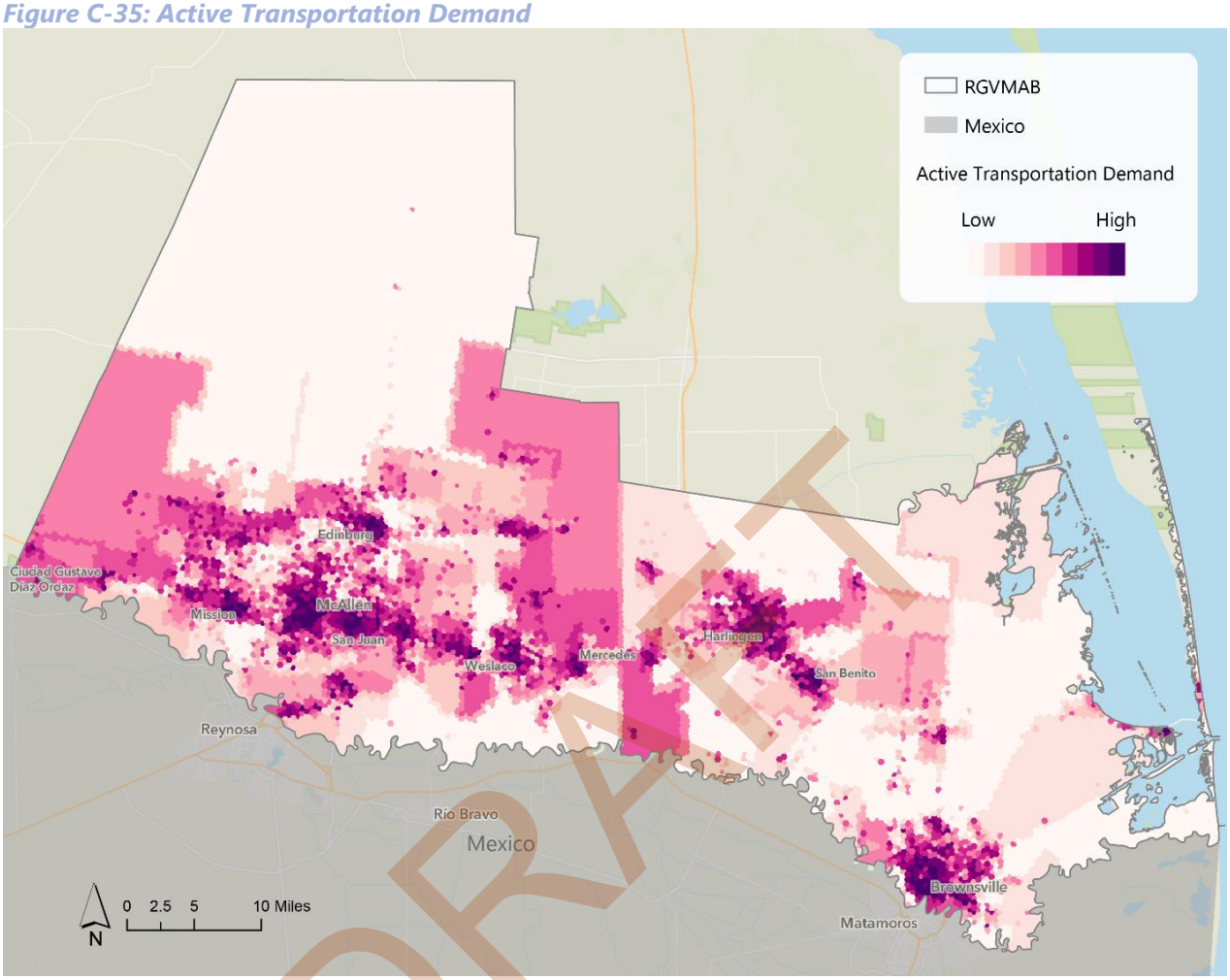


Each criterion was aggregated to the hexagonal grid, using a spatial join in GIS. For shape-based data like the Census block groups, a criterion was averaged where a hexagon overlapped more than one shape.

To finalize the standardization process, the project team converted the criteria to a 100-point scale. Each measure was normalized through scoring assignments based on a scale of 0 - 100 for each hexagon. Hexagons with the highest scores contain a value of 100, while the lowest contain a value of 0. For example, a hexagon with a value that is higher than 90% of other propensity hexagons is assigned a value of 90 out of 100. Once each measure was scaled from 0 -100, the measures were aggregated to generate final combined scores. Final scores were then normalized on a scale from 0 - 100. This final combined score indicates the relative demand for active transportation options occurring in each hexagon, based on the criteria. **Figure C-35** shows demand dispersed across the RGVMAB.

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Figure C-35: Active Transportation Demand

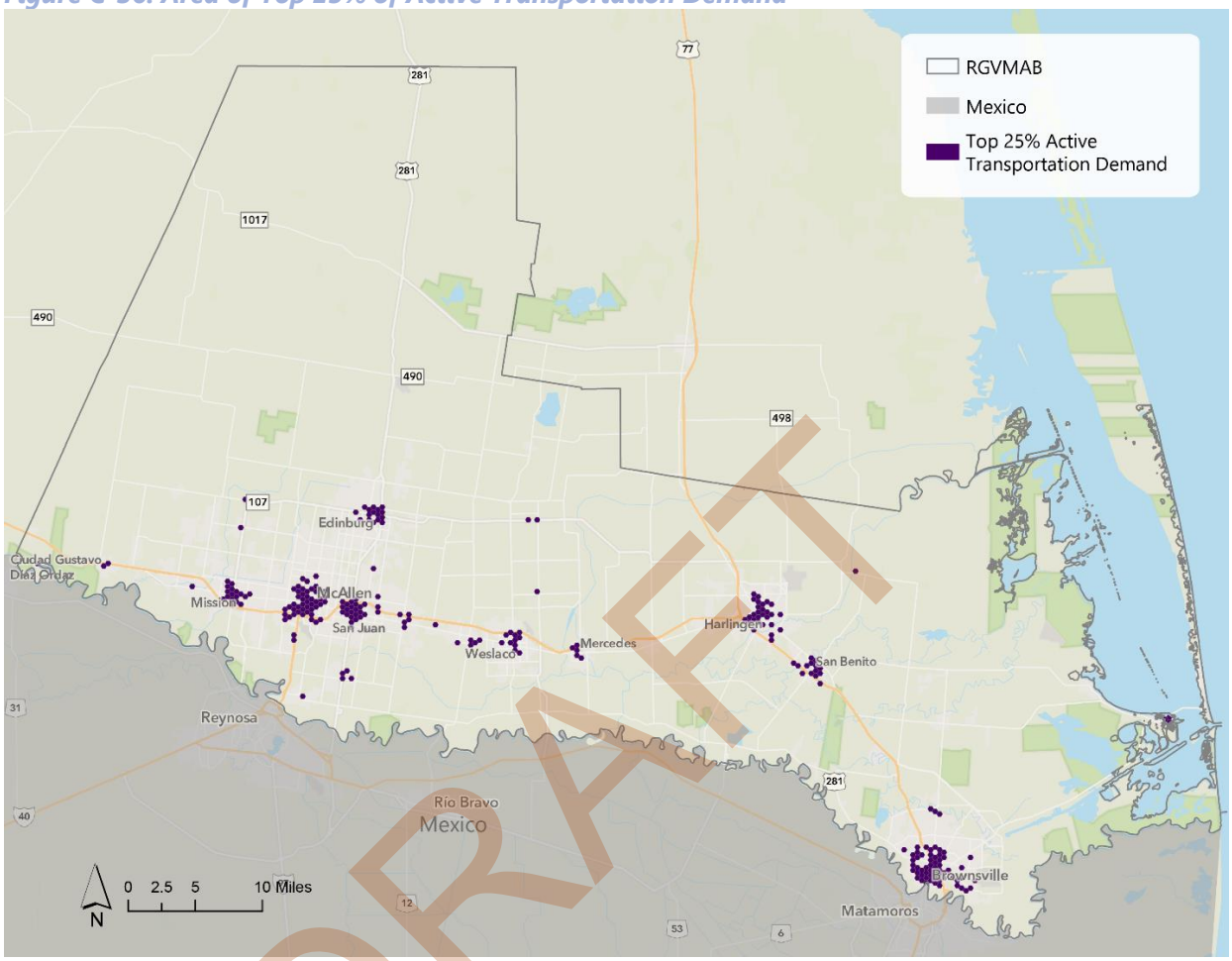


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Results

Current supply of active transportation facilities (sidewalks, bike lanes, and hike & bike trails) were overlaid on the top 25% of demand scores to identify where areas of high demand have insufficient facilities. Below, **Figure C-36** shows those areas with the top 25% of demand. The analysis showed many gap areas occurring in rural or semi-rural areas, many of which contain gridded street networks, but lack adequate sidewalk facilities. The section below summarizes four key gap areas.

Figure C-36: Area of Top 25% of Active Transportation Demand

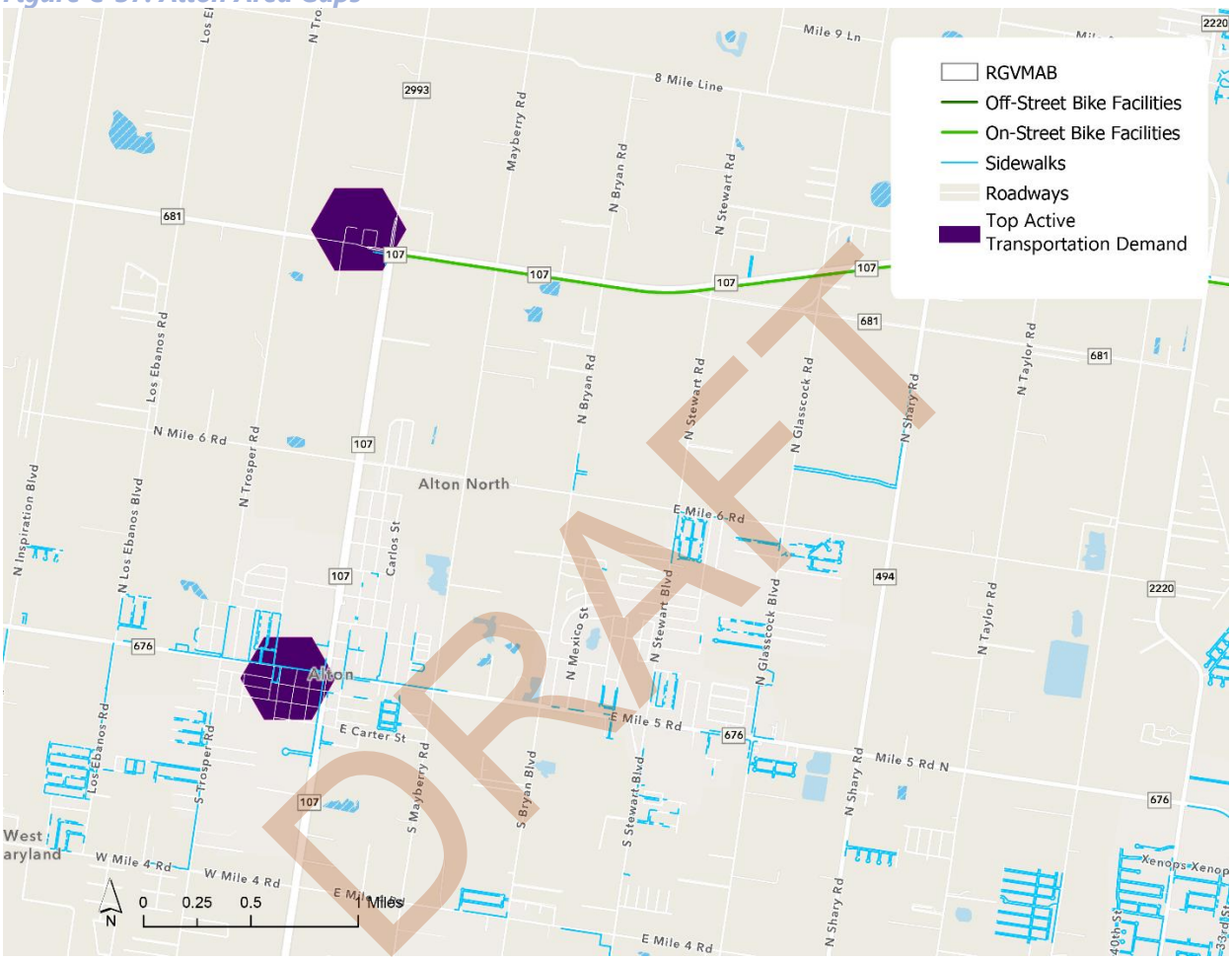


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ALTON

In **Figure C-37** the Alton community northwest of McAllen contains two high demand areas with very little access to sidewalks. A bike lane runs along SH 107; however, it may not be comfortable for all users due to traffic speed.

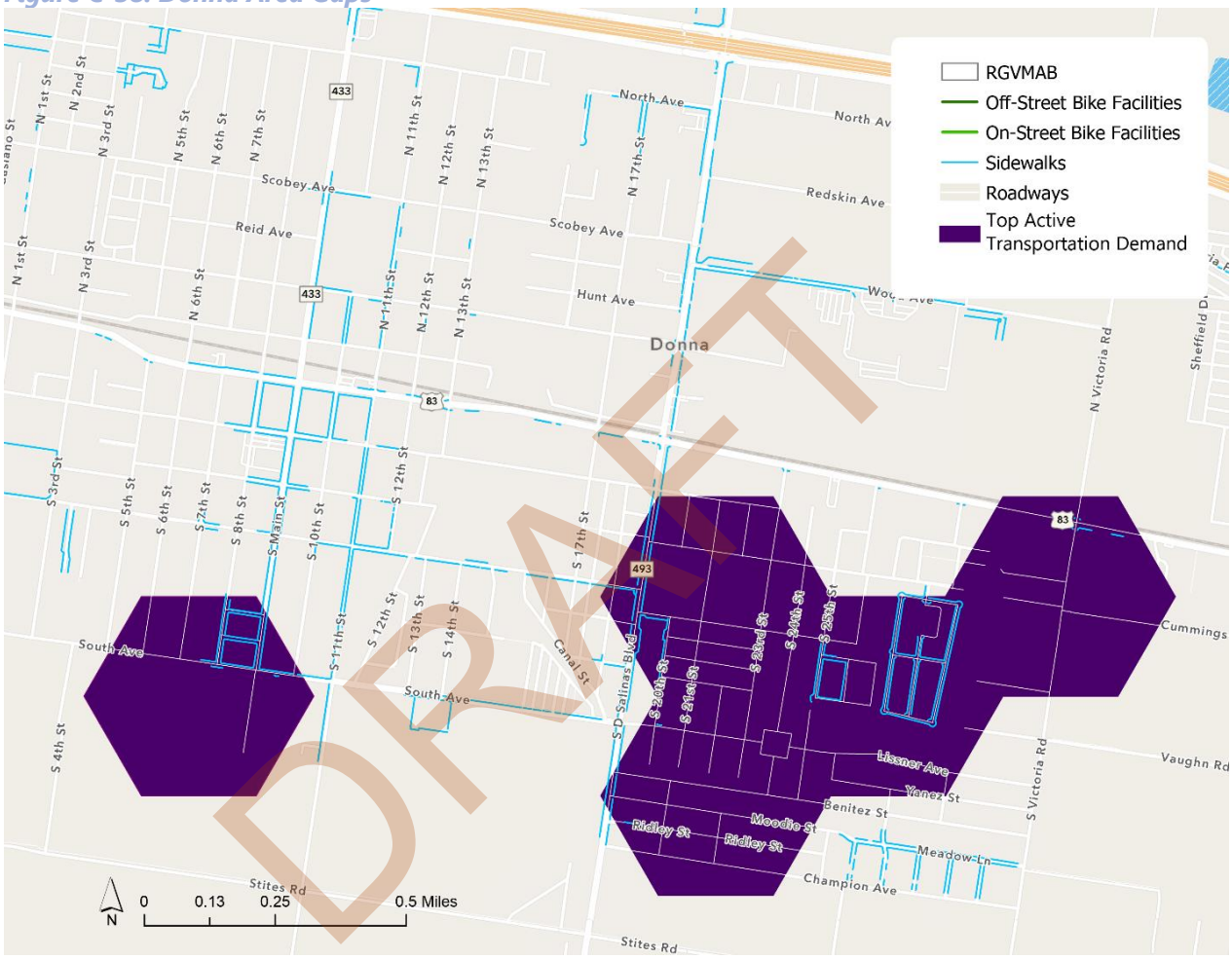
Figure C-37: Alton Area Gaps



DONNA

In **Figure C-38** the Donna area, south of SH 83 BUS, a pocket of high demand has no access to bicycle facilities and lacks complete sidewalks, despite a well-connected street network. Improved sidewalk connections could improve access to nearby sports parks, schools, and local businesses.

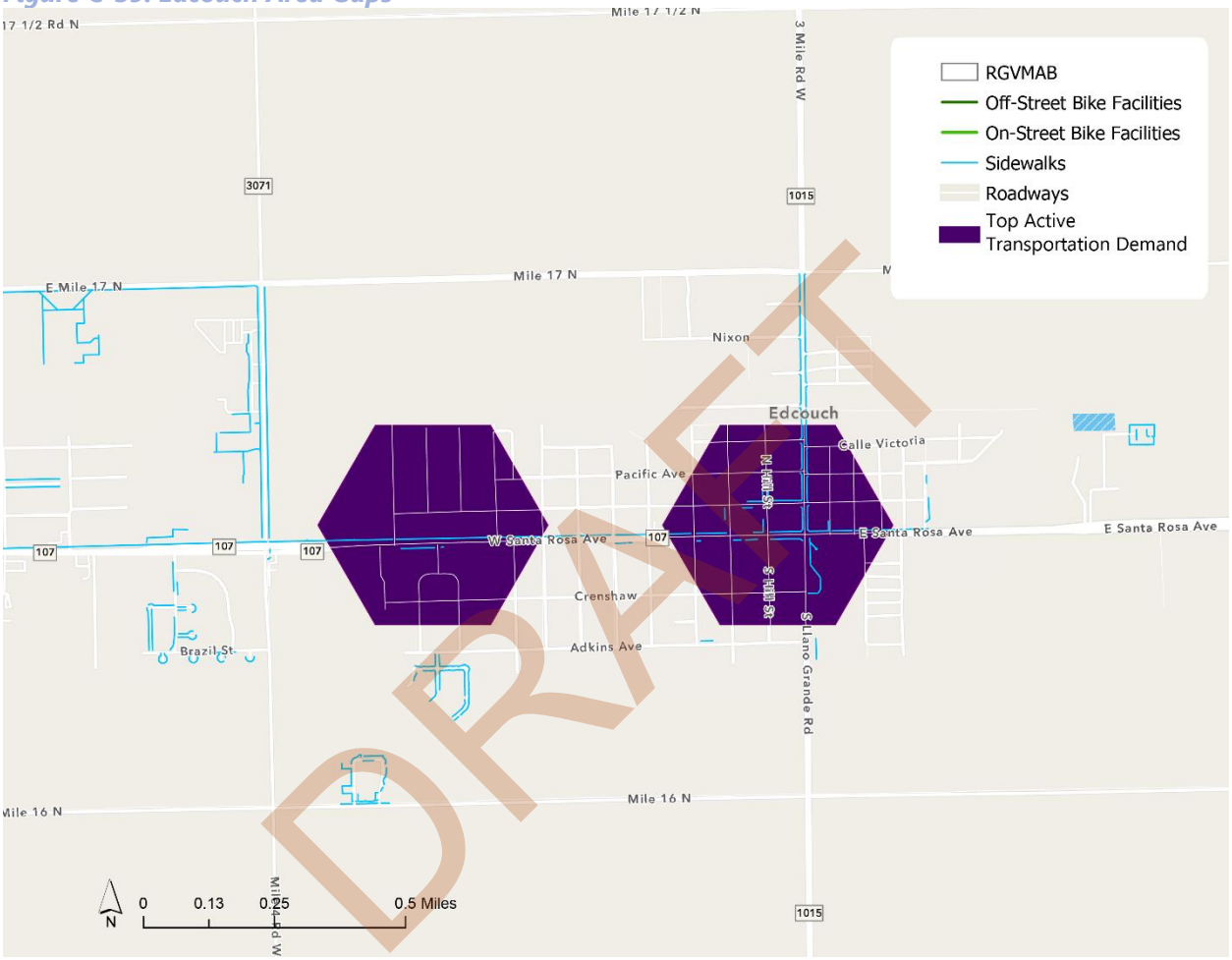
Figure C-38: Donna Area Gaps



EDCOUCH

In **Figure C-39** along the SH 107 corridor in the Edcouch area, two high demand hexagons have little access to sidewalk, except for along main thoroughfares. No bike facilities are present. Facilities to nearby Elsa may benefit residents in both communities.

Figure C-39: Edcouch Area Gaps

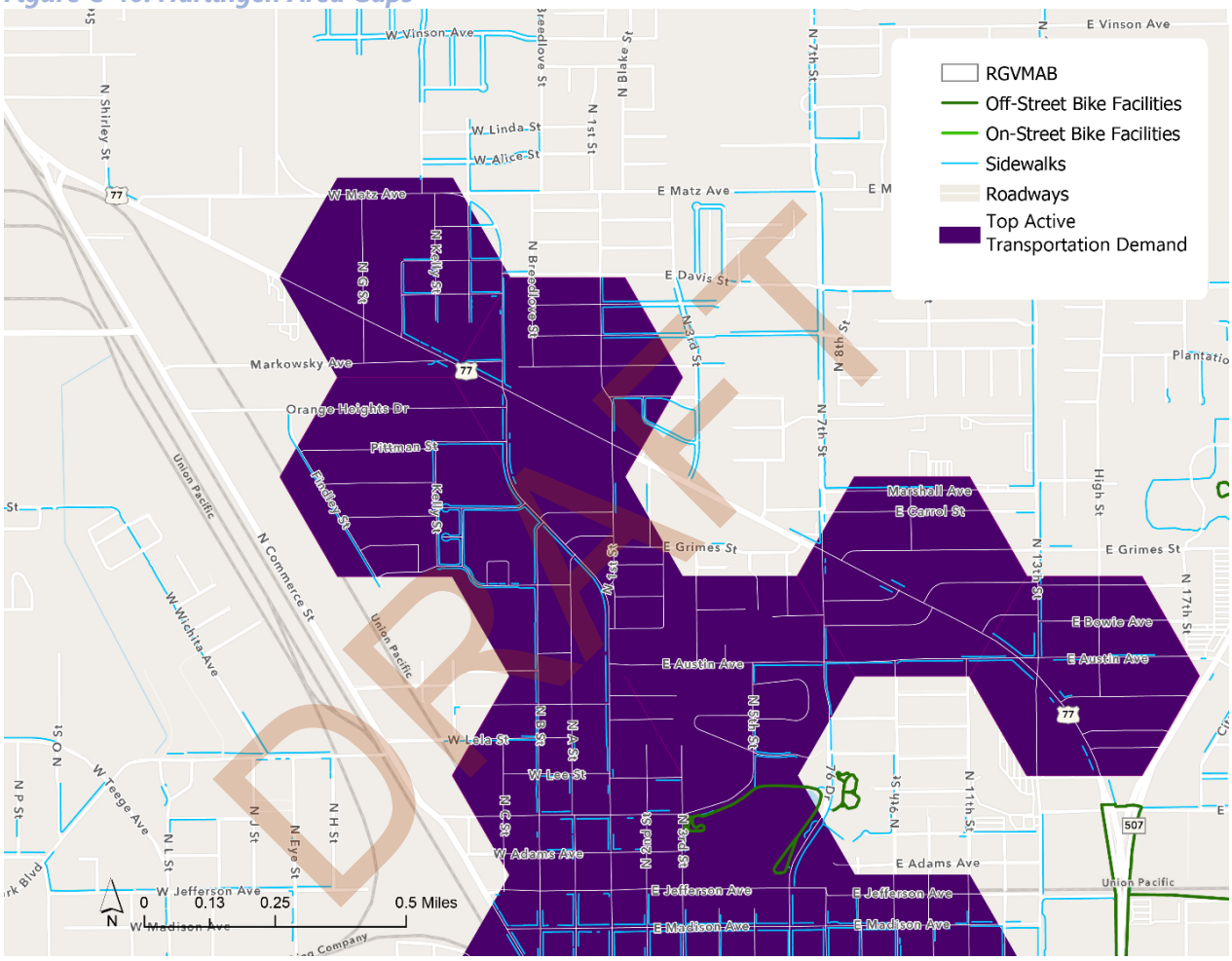


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HARLINGEN

In **Figure C-40,** on the north side of Harlingen on N. Commerce St. a large cluster of high demand areas lack complete sidewalk networks in residential areas and contains no bike facilities. Bike facility connections south may connect residents to downtown employment and amenities, while connections to the east may provide direct connection to Pendleton Park and Harlingen High School.

Figure C-40: Harlingen Area Gaps



CONCLUSION

The Rio Grande Valley is a rich and intricate region with a blend of urban and rural communities coming together to weave a unique experience, and set of needs, for those using, or wanting to use modes of active transportation. Whether that be for recreation, commuting, business, or sport.

To identify the current state of the transportation network for the people who walk and bike, a comprehensive analysis identified current conditions and need within the RGVMAB. This technical and data driven analysis is inclusive of all communities within the RGVMAB and aims to provide direction for prioritizing and implementing solutions that help residents improve their day to day lives.

Within the RGVMAB, many communities have well connected, gridded street networks that create an opportunity to implement or expand facilities for people to walk and bike. However, connections between communities that are comfortable for all users are more limited.

To summarize key takeaways from each analysis, findings have been listed below in

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Table C-24.

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Table C-24: Key Takeaways

Analysis	Key Takeaway
Policy Review	• Opportunities for additional policy and program elements can be made in all the major cities throughout the RGVMAB. • Consistent policy on safe passing is found in almost every city reviewed.

Safety	• AT crashes happen most often during PM peak travel times.
	• Although AT crashes make up only 1.6% of all crashes in the region for the five-year period, they comprise a much larger portion of all crashes that resulted in fatality or serious injury. This information implies that active transportation users bear a disproportionate amount of risk of injury or fatality and that planning for the safety of these users is of the utmost urgency.
	• The intersections with the most crashes were identified throughout the RGVMAB. The following were the highest two intersections:
	  ○ International Blvd. (SH 4) @ Southmost Blvd. (FM 1419)
	  ○ Spur 206 @ IH-69E

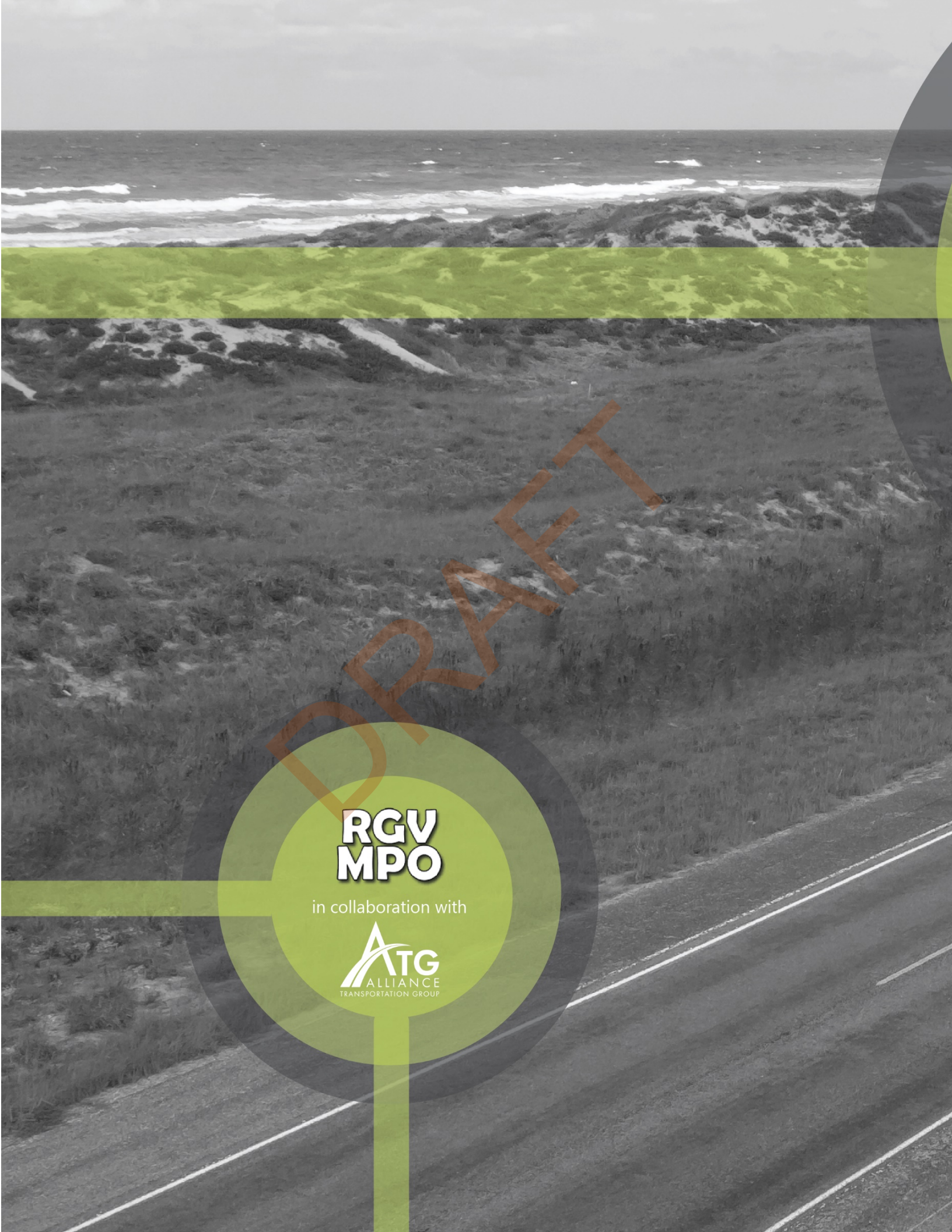
Bicycle Level of Stress	• Many urban areas in the RGVMAB have an array low stress roadway for all users, especially where the gridded roadway network is present. • Low stress connections between urban areas are limited, especially along major roadway thoroughfares, such as the I-2 corridor.
Pedestrian Accessibility	• Intersection Density supports walking propensity throughout the dense urban areas of the RGVMAB, as well as in several smaller communities with well-connected street networks.

Transit Proximity	• Identifies the transit Providers Connections in most need of additional sidewalk connections within ½ mile. The following Providers connections were identified as having the lowest sidewalk coverage.
	  ○ Weslaco Valley Metro Transit Center
	  ○ San Juan Station
	  ○ Foy's Supermarket

Travel Patterns	• The highest number of trips under 2 miles occurs in TAZs that are predominantly in rural areas. Those TAZ may benefit from increased facilities for walking and biking. • Travel demand model does not capture nonvehicle trips, which may not fully account for short urban trips made by active modes.

Gaps	• Demand for active transportation facilities through the RGVMAB was mapped and areas within the top 25% of demand were identified.
	• In the top demand areas, current active transportation facilities were lacking in the following areas:
	  ○ Alton
	  ○ Donna
	  ○ Edcouch
	  ○ Harlingen

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RGV
MPO
in collaboration with
ATG
ALLIANCE
TRANSPORTATION GROUP



RGV MPO

Transit Development Plan

DRAFT

December
2020

This document was prepared in cooperation with:

The Rio Grande Valley Metropolitan Planning Organization

and

The Texas Department of Transportation

The document was reviewed and approved by:

The Rio Grande Valley Metropolitan Planning Organization – Transportation Policy Board

On 12/10/2020

Rio Grande Valley Planning Organization (RGVMPO)

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Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d-1) and 49 CRF part 21; The Older Americans Act, as amended (42 U.S.C. 6101), prohibiting discrimination on the bases of age in programs or activities receiving Federal financial assistance; and Section 324 of title 23 U.S.C. regarding the prohibition of discrimination based on gender;

The RGVMPO is committed throughout the development of its plans and programs to ensure that no person on the grounds of age, gender, race color or national origin is excluded from participation in, denied the benefits of, or subjected to discrimination under any program receiving federal financial assistance. No plans, programs or policies developed or implemented by the RGVMPO will have a disproportionately high adverse human health or environmental effect on minority and low-income populations. The RGVMPO plans continue to work on improving the accessibility of employment to the identified protected populations. Further, many of the current MPO public meetings are held in minority and low-income communities in the region and are located near accessible public transit facilities. Funding is allocated as part of the Unified Planning Work Program for a Title VI Plan to maintain an analytical approach that produces procedures that meet Title VI requirements by ensuring that federally-funded transportation projects adequately consider effects on low-income and minority segments of the population.

In order to be processed, signed original complaint forms must be mailed or hand delivered to:

Rio Grande Valley Metropolitan Planning Organization ATTN: Title VI Coordinator 510 South Pleasantview Drive Weslaco, Texas 78596

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The RGVMPO follows the TXDOT DBE Plan. Funding is allocated as part of the Unified Planning Work Program to maintain an analytical approach that produces procedures that meet Environmental Justice requirements by ensuring that federally-funded transportation projects adequately consider effects on low-income and minority segments of the population.

Americans with Disabilities Act of 1990: The provision of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) and 49 CFR parts 27, 37, and 38; and Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794) and 49 CFR part 27 regarding discrimination against individuals with disabilities.

It is the policy of the RGVMPO to ensure that all agency programs and services are accessible to people with disabilities and are in compliance with the applicable regulations as a condition of receiving Federal financial assistance from the Department of Transportation. The RGVMPO will make reasonable accommodations to a qualified individual with a disability who attends on-site meetings and meeting facilities meet this requirement. Every effort is made to ensure that meeting facilities off-site are ADA accessible. A notice is published in advance of all MPO public meetings that reasonable accommodations will be provided for meeting locations on and off-site with a phone number and contact persons listed to provide assistance if needed. In addition, the RGVMPO staff is actively involved in various ADA-related initiatives which are being carried out as part of the Unified Planning Work Program including Elderly and Disabled Planning, the Job Access/Reverse Commute Program, and the review of ADA compliance documents developed by the region's transit and paratransit agencies, all of which focus on ensuring that transportation program and services across the region are accessible to those citizens with disabilities.

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Restrictions on influencing certain federal activities: CFR 29, Part 20;

It is the policy of the RGVMPO that no state or federal funds received by the agencies shall be paid to any person for the purpose of influencing the award of a federal contract, grant, or loan or the entering into of a cooperative agreement. NO state or federal funds received by the agencies shall be used directly or indirectly to influence any member of Congress, any member of the State Legislature, or any local elected official to favor or oppose the adoption of any prosed legislation pending before any federal, state, or local legislative body.

Credit/Disclaimer Statement

"The preparation of this report has been financed in part through grant[s] from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation, under the State Planning and Research Program, Section 505 [or Metropolitan Planning Program, Section 104(f)] of Title 23, U.S. Code. The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation."

Questions or other interest regarding the plan may be directed to:

Andrew Canon
Executive Director
acanon@rgvmpo.org

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1 TRANSIT EXISTING CONDITIONS ANALYSIS

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The newly formed RGVMPO is working collaboratively with regional transit providers to develop a Transit Development Plan (TDP) as a major component of the RGVMPO 2045 MTP. This section will help tell the transit story of the RGV community. The development and delivery of tools and strategies will empower the MPO and the regional transit providers to evaluate, coordinate, and deliver transit on behalf of the community. This will build on the recent and successful coordination efforts among all the project partners, such as the formation of the Lower Rio Grande Valley Regional Transit Advisory Panel (RTAP).

INTRODUCTION

As a major component of the RGVMPO 2045 MTP, the newly formed MPO is working collaboratively with regional transit providers to develop a Transit Development Plan (TDP). This plan will help tell the transit story of the RGV community. The development and delivery of tools and strategies will empower the MPO and the regional transit providers to evaluate, coordinate, and deliver transit on behalf of the community. This will build on the recent and successful coordination efforts among all the project partners, such as the formation of the Lower Rio Grande Valley Regional Transit Advisory Panel (RTAP).

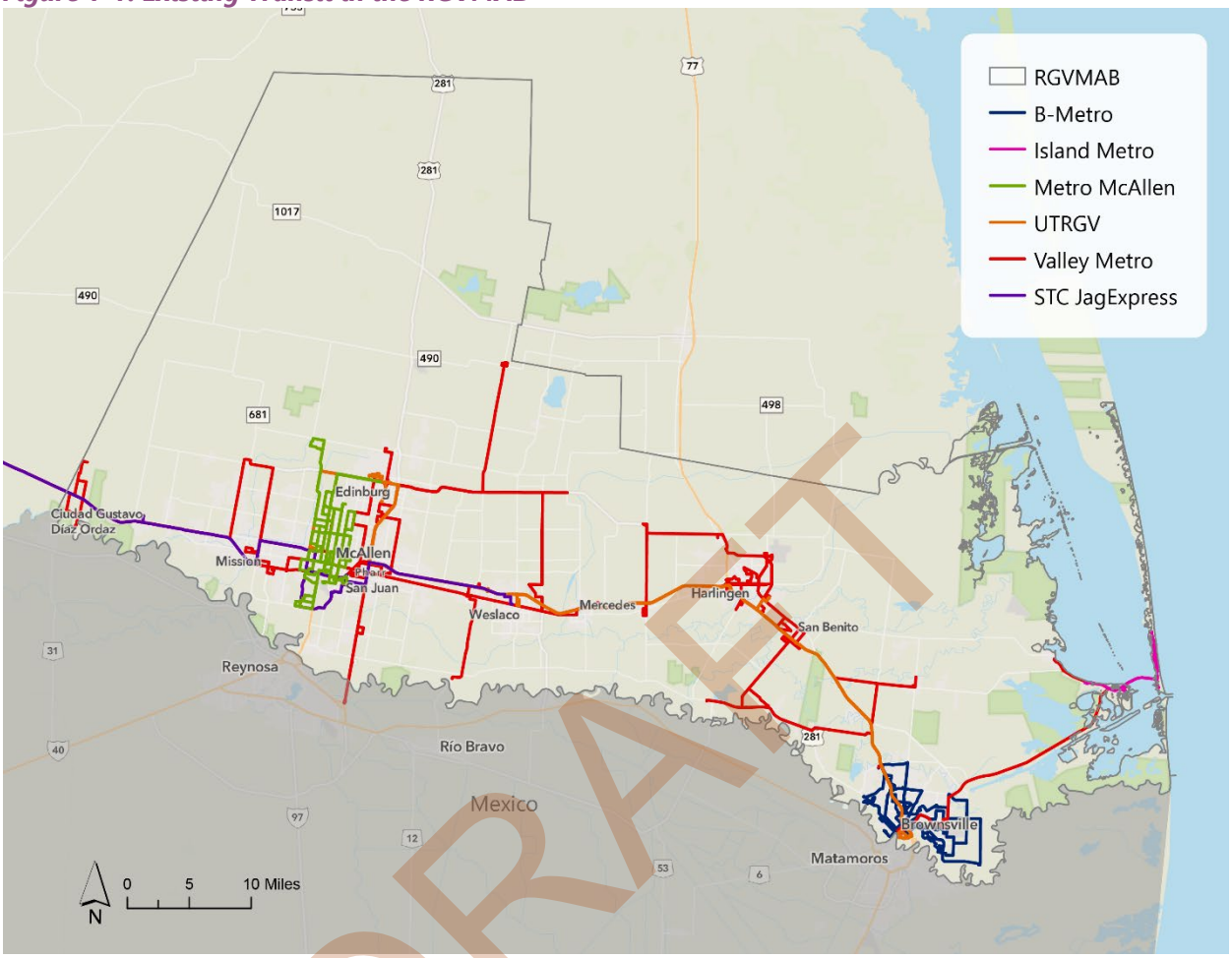
The plan will provide the following key components:

- Operational Analysis
- Market Analysis
- Origins and Destinations/Ridership Analysis
- Regional Service Standards
- Route and Service Recommendations
- Implementation Plan

The region for analysis is the Rio Grande Valley Metropolitan Area Boundary (RGVMAB), which consists of Cameron and Hidalgo Counties. The RGVMAB contains an intricate, interrelated transit system comprised of several different service providers and a wide variety of transit service options, shown in Figure 1. To identify system strengths and weaknesses, it is critical to create an inventory of current transit providers' services in the region. This level of understanding helps inform the processes and methodologies used to develop locally sensitive solutions that will address existing gaps and duplications in service. While the TDP analysis only considers data within the RGVMAB, project partners will be able to deploy these tools, solutions, and strategies wherever they provide service, even where this extends beyond the study area.

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Figure 1-1: Existing Transit in the RGVMAB



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OPERATIONAL ANALYSIS

The first step in developing the TDP is to establish a baseline and understand the state of transit as it operates today. Understanding the existing system will help establish thresholds used for the development of the regional service. The operational analysis also reveals what aspects of the existing transit system work well and identifies opportunities for improvements, which will in turn inform the development of recommendations such as route alignment modifications and service level adjustments. This process helps pinpoint the strengths and eliminate the weaknesses of the system in a manner that improves transit for existing passengers and positions it to attract new passengers.

Provider Profiles

The provider profiles below offer an introduction to the detailed operations for Valley Metro, Brownsville Metro, Metro McAllen, Island Metro, and Valley Metro's FTA-funded partnerships with University of Texas Rio Grande Valley (UTRGV) and South Texas College (STC).

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VALLEY METRO

SERVICE PROVIDER

The Lower Rio Grande Valley Development Council provides public transportation in urbanized and non-urbanized areas of the lower Rio Grande Valley through its transit department, Valley Metro. Valley Metro operates service in Hidalgo County, Cameron County, Willacy County, Starr County, and Zapata County.

ROUTES

Valley Metro funds and/or operates 36 routes and demand response services:

20 Valley Metro Routes
1 Metro Express Route
4 UTRGV Vaquero Express Routes
5 UTRGV VOLT Routes
1 UTRGV EVABL Route
3 South Texas College Routes
2 Demand Response Areas

PEAK VEHICLE

30 vehicles deployed at peak service times

SERVICE TYPES

Fixed route local bus, commuter bus, flexible transit service, demand response

OPERATING HOURS

Schedules vary by route

Monday - Saturday
6:00 am - 9:00 pm

Sunday
8:00 am - 6:00 pm

MAJOR DESTINATIONS

McAllen Central Station
UT Rio Grande Valley (Edinburg)
South Texas College Pecan Campus
UTRGV Academic Health Center
Valley International Airport
La Plaza Bownsville
UT Rio Grande Valley (Brownsville)
Brownsville SPI International Airport
Port Isabel

ANNUAL DATA

6,384,393 Passenger Miles
709,226 Unlinked Trips
2,195,682 Vehicle Revenue Miles
101,291 Vehicle Revenue Hours
0.3 Unlinked Trips/Revenue Mile
7.0 Unlinked Trips/Revenue Hour

OPERATING EXPENSES

$3.16 per Vehicle Revenue Mile
$68.41 per Vehicle Revenue Hour
$1.09 per Passenger Mile
$9.77 per Unlinked Passenger Trip

Funding Sources

	OPERATING	CAPITAL
Fares	$4,145	$5,912
Local	$1,741,959	$448,608
State	$1,255,988	$0
Federal	$3,946,253	$3,334,603
Total	$6,948,345	$3,789,123

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VALLEY METRO

SERVICE PROVIDER

Valley Metro

LEAVING FOR WORK

The most frequent times people leave for work are between:

1st 7:00am-7:30am

2nd 7:30am-8:00am

3rd 8:00am-8:30am

*within Cameron and Hidalgo Counties

TRAVEL TIME

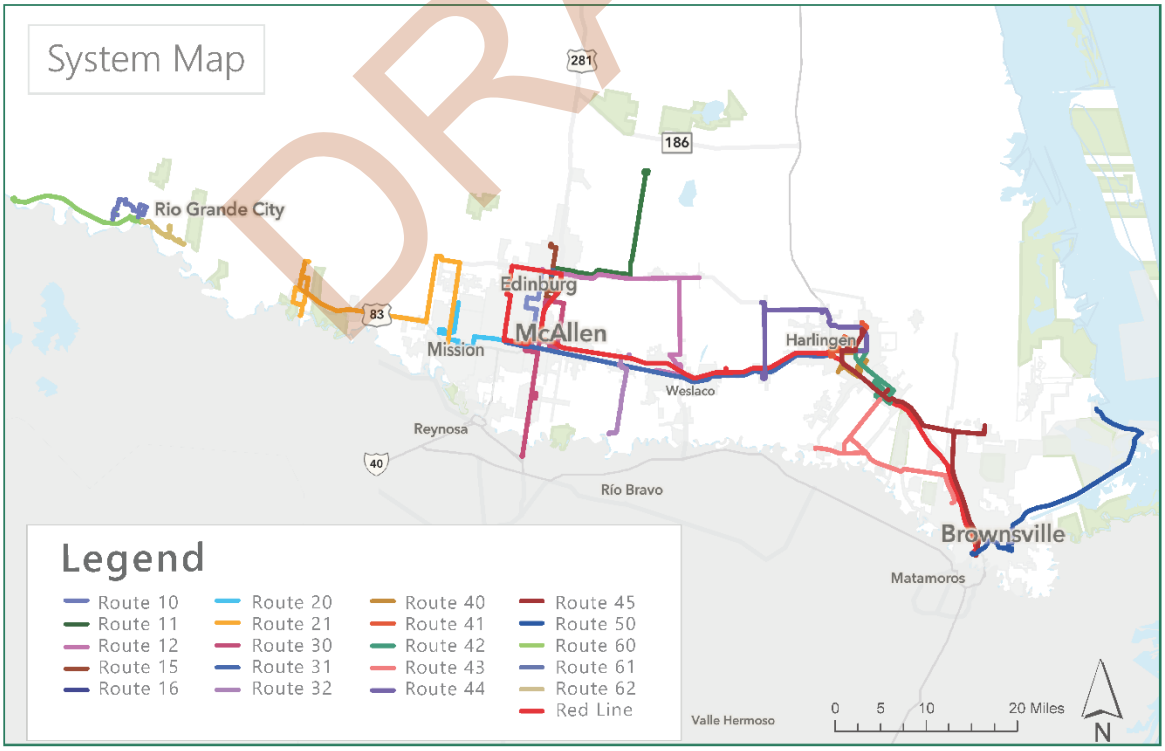
22.5% travel >30 minutes

3.6% travel >60 minutes

*of approximately 450,000 people surveyed within Cameron and Hidalgo Counties

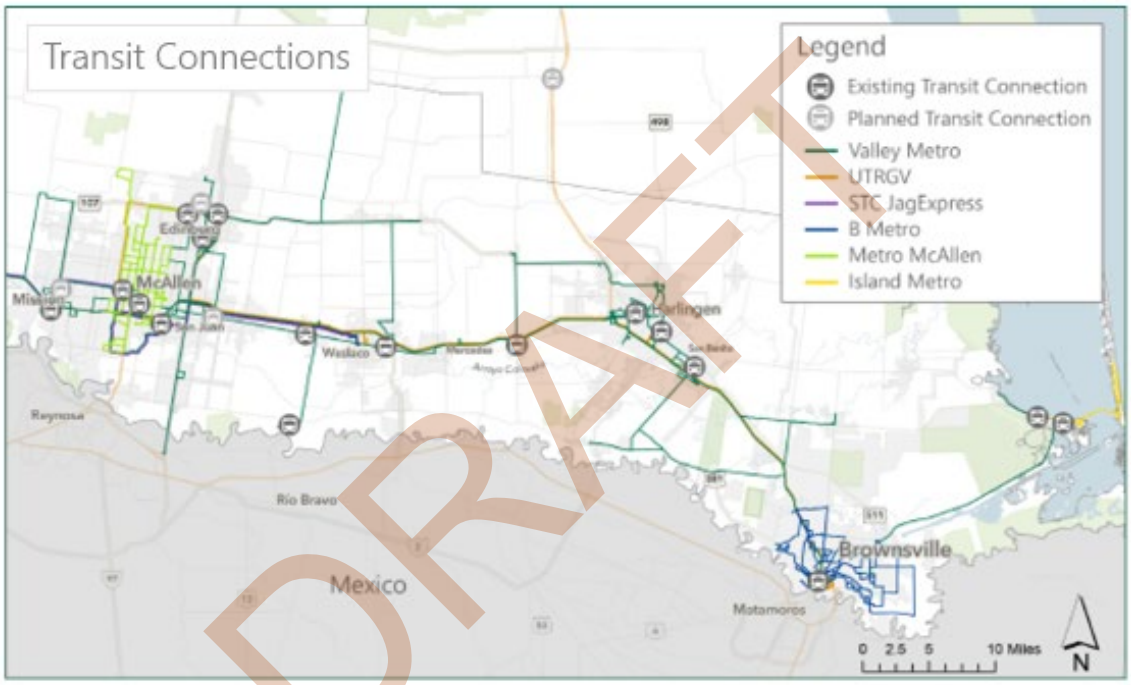
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System Map



VALLEY METRO

SERVICE PROVIDER



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Mission
Foy's Supermarket
Mission Station

McAllen/San Juan
South Texas College Pecan Campus
McAllen Central Station
STC Nursing & Allied Health Center
San Juan Station

Edinburg
UT Rio Grande Valley Visitor's Center
UTRGV Visual Arts Building
Hidalgo County Courthouse
Edinburg Transit Terminal

Donna/Weslaco
Donna City Square Park
Donna Park & Ride
Weslaco Transit Center

Harlingen/San Benito
Harlingen Transit Terminal & Greyhound Station
UTRGV Regional Academic Health Center
San Benito City Hall

Brownsville
La Plaza Terminal

South Padre Island
Port Isabel
Laguna Heights

Raymondville
Raymondville Park & Ride

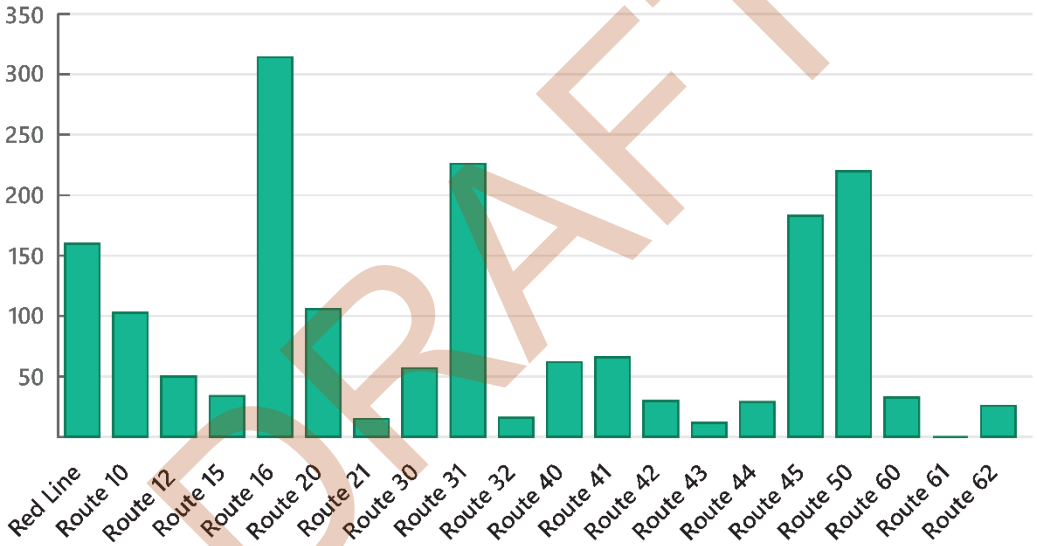
La Feria
La Feria City Hall

VALLEY METRO

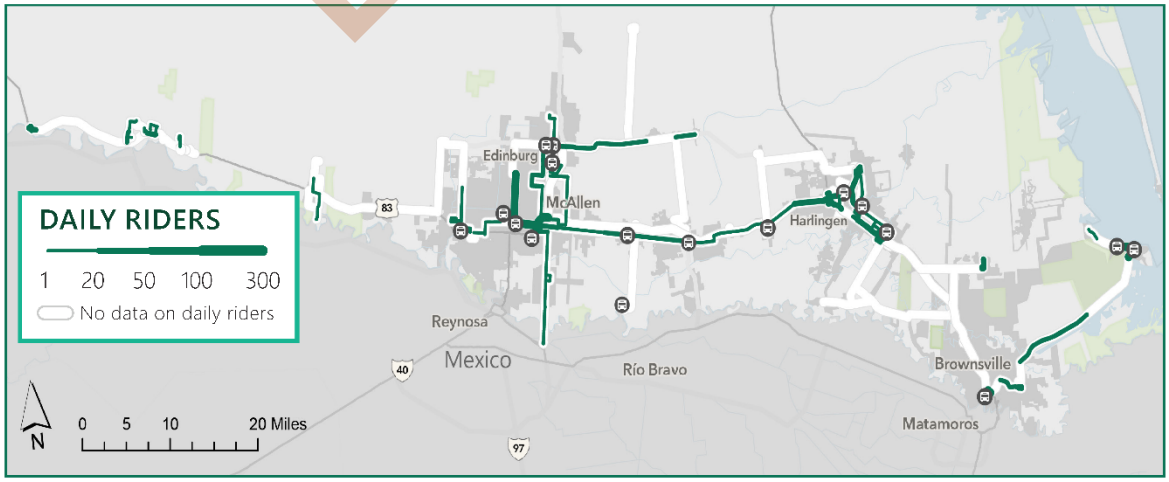
SERVICE PROVIDER

DAILY RIDERSHIP

1,759 Avg Daily Riders

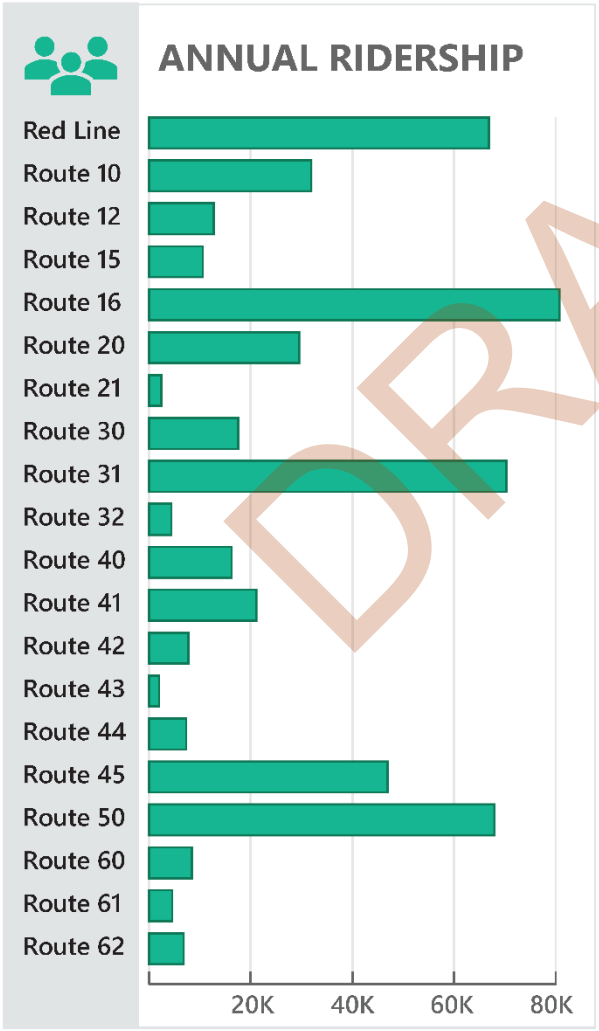


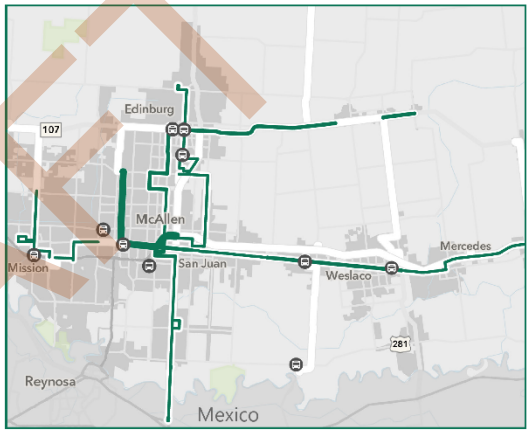
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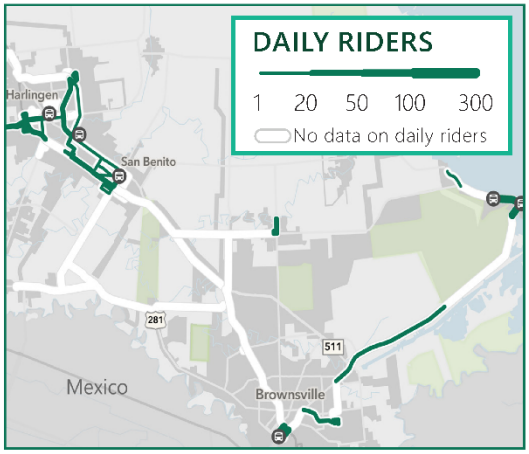


VALLEY METRO

SERVICE PROVIDER







515,900 Annual Riders

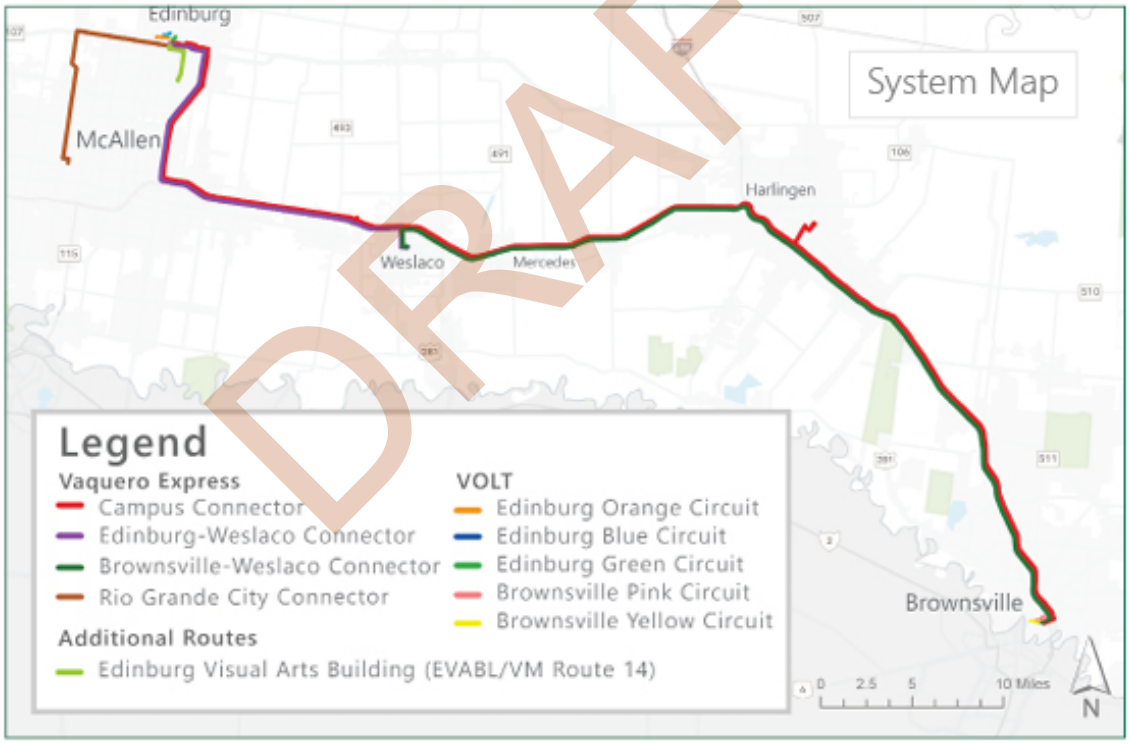
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UT RIO GRANDE VALLEY

SERVICE PROVIDER

The University of Texas Rio Grande Valley provides transit service to students, faculty, staff, and the general public through a partnership with Valley Metro. UTRGV receives FTA funding as a subrecipient of Valley Metro and operates a route system that links campuses across the Valley under the Vaquero Express brand. Additional intracampus transit is provided in Brownsville and Edinburg through electric transport carts running flexible routes under the VOLT brand. All routes operated by the University are free and open to the general public.

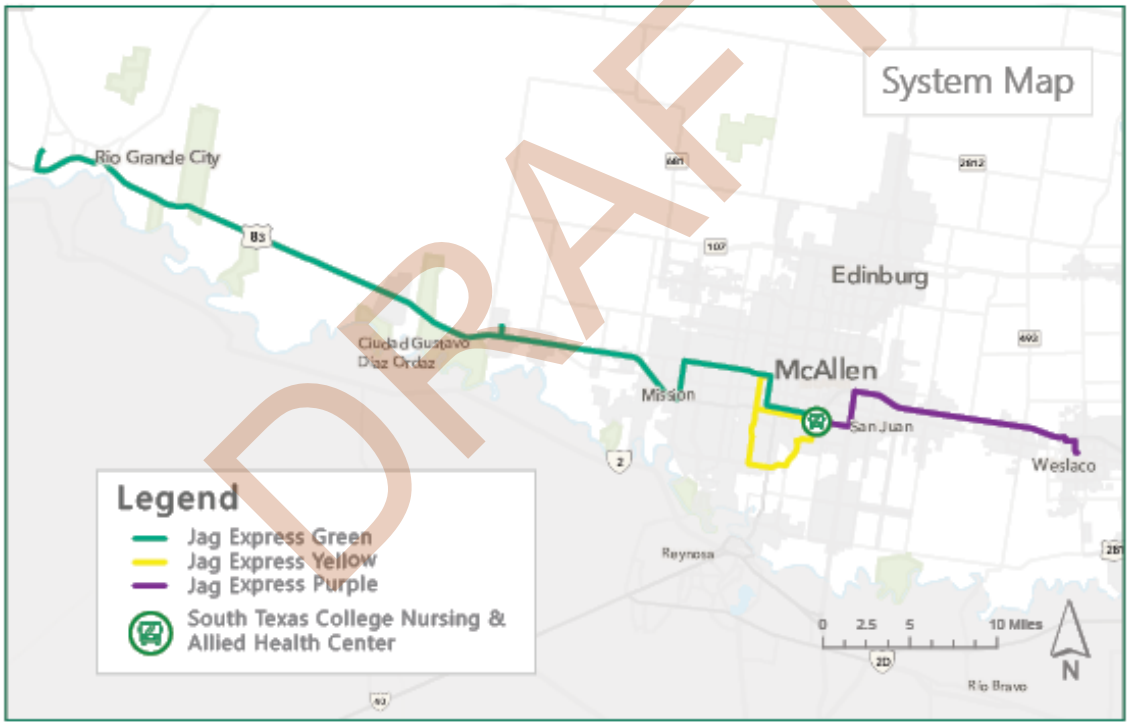
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JAGEXPRESS

SERVICE PROVIDER

South Texas College partners with Valley Metro to provide service to campuses. There are three routes that serve South Texas College which are branded as the JagExpress. In addition to serving the South Texas College campuses, the Jag Express connects nearby communities and resources.



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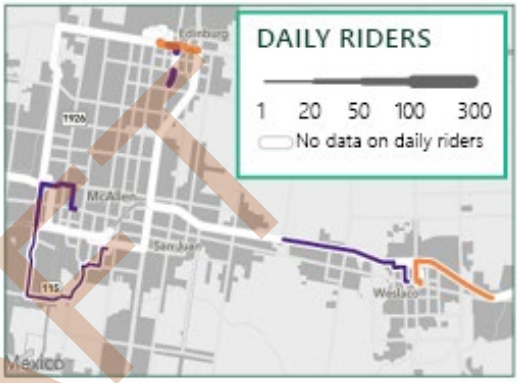
UTRGV AND STC

SERVICE PROVIDERS

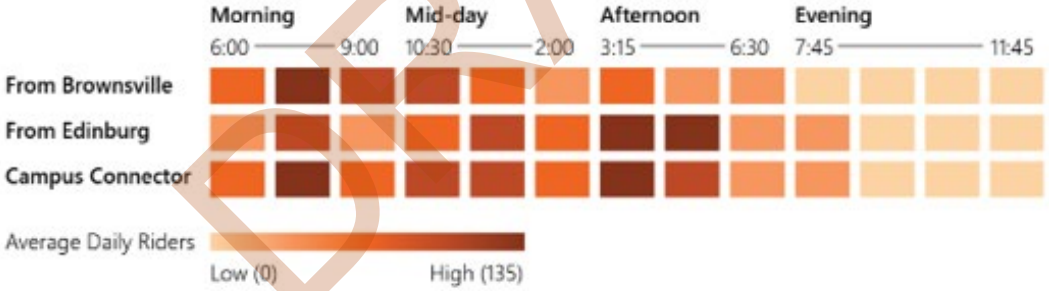
RIDERSHIP

UT Rio Grande Valley carries an average of **1,457** daily riders and **298,916** riders annually, **97%** of which are students.

South Texas College carries an average of **59** daily riders and **14,421** riders on the Jag Express annually.



UTRGV CAMPUS CONNECTOR TRIP RIDERSHIP





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B METRO

SERVICE PROVIDER

The City of Brownsville offers public transit through its provider, B Metro, operating within Cameron County. B Metro provides service within the Brownsville City limits, connecting at the primary multimodal terminal downtown called La Plaza, and a smaller secondary hub called the Northside Transit Station.

ROUTES

B Metro currently operates 13 routes in addition to a paratransit demand response service.

Route 1 Westend
Route 2 Jefferson/Central
Route 3 Rockwell
Route 5 Alton Gloor
Route 6/6A Southmost
Route 7 Billy Mitchell
Route 8 Lemon
Route 9 Austin
Route 11 Old Port Isabel
Route 13 Pablo Kisel
Route 14 Scorpion Connector
Route 20 North
Route 30 Southeast

MAJOR DESTINATIONS

Brownsville SPI International Airport
Olivieira Arnulfo Memorial Library
Sunrise Mall
Gateway International Bridge
Gladys Porter Zoo
Valley Baptist Medical Center
Valley Regional Medical Center
Valley Grand Manor Nursing Home
Wal-Mart Supercenter

TRAVEL TIME



22.0% travel >30 minutes



3.1% travel >60 minutes

*of approximately 85,300 people surveyed within the City of Brownsville

LEAVING FOR WORK

The most frequent times people leave for work are between:

1st 7:30am-8:00am
2nd 7:00am-7:30am
3rd 8:00am-8:30am

*within the City of Brownsville

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B METRO

SERVICE PROVIDER

OPERATING HOURS

Schedules vary by route

Monday - Saturday
6:00 am - 8:15 pm

SERVICE TYPES

Fixed route local bus,
demand response paratransit

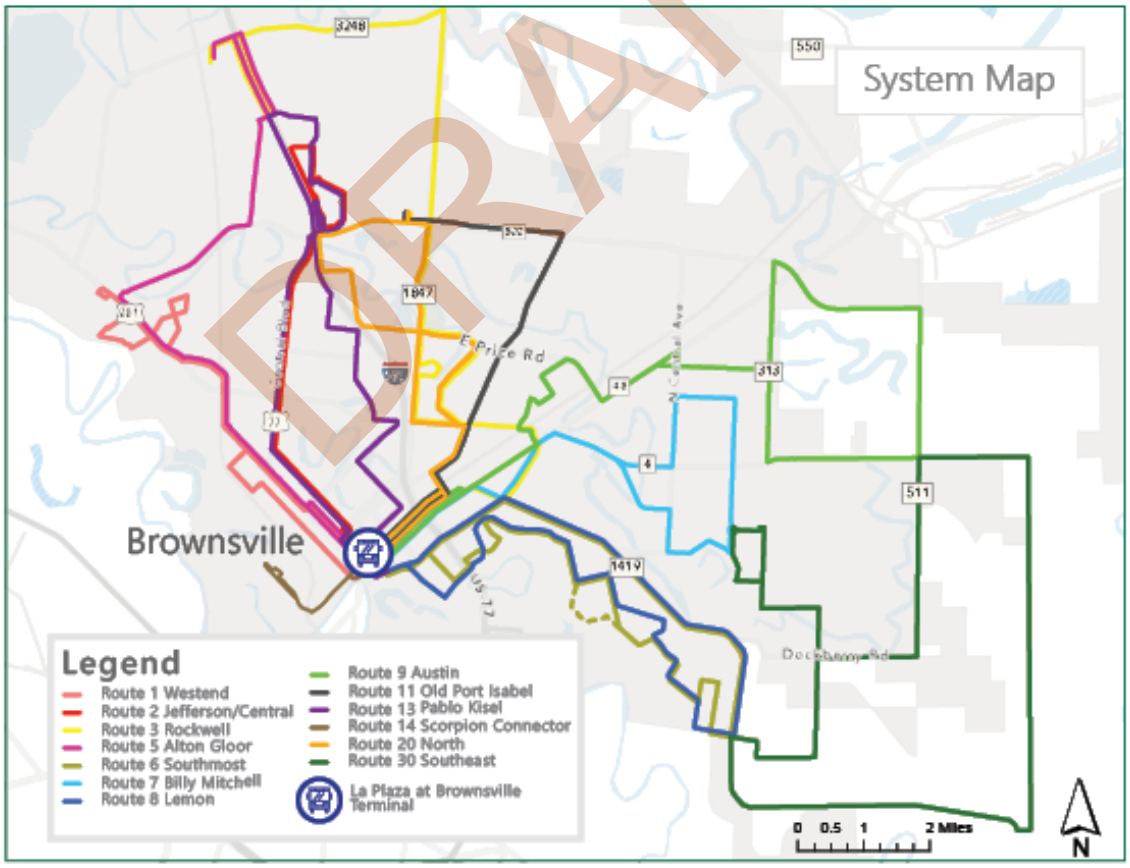
CONNECTIONS

Valley Metro

43 San Benito - Brownsville
45 Cameron Career Connection
Blue Line/Route 50 Brownsville-Port Isabel
Metro Express Red Line

PEAK VEHICLE

17 vehicles deployed at peak times



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B METRO

SERVICE PROVIDER

ANNUAL DATA

12,504,691 Annual Passenger Miles
1,582,769 Unlinked Trips

1,543,303 Vehicle Revenue Miles
93,844 Vehicle Revenue Hours

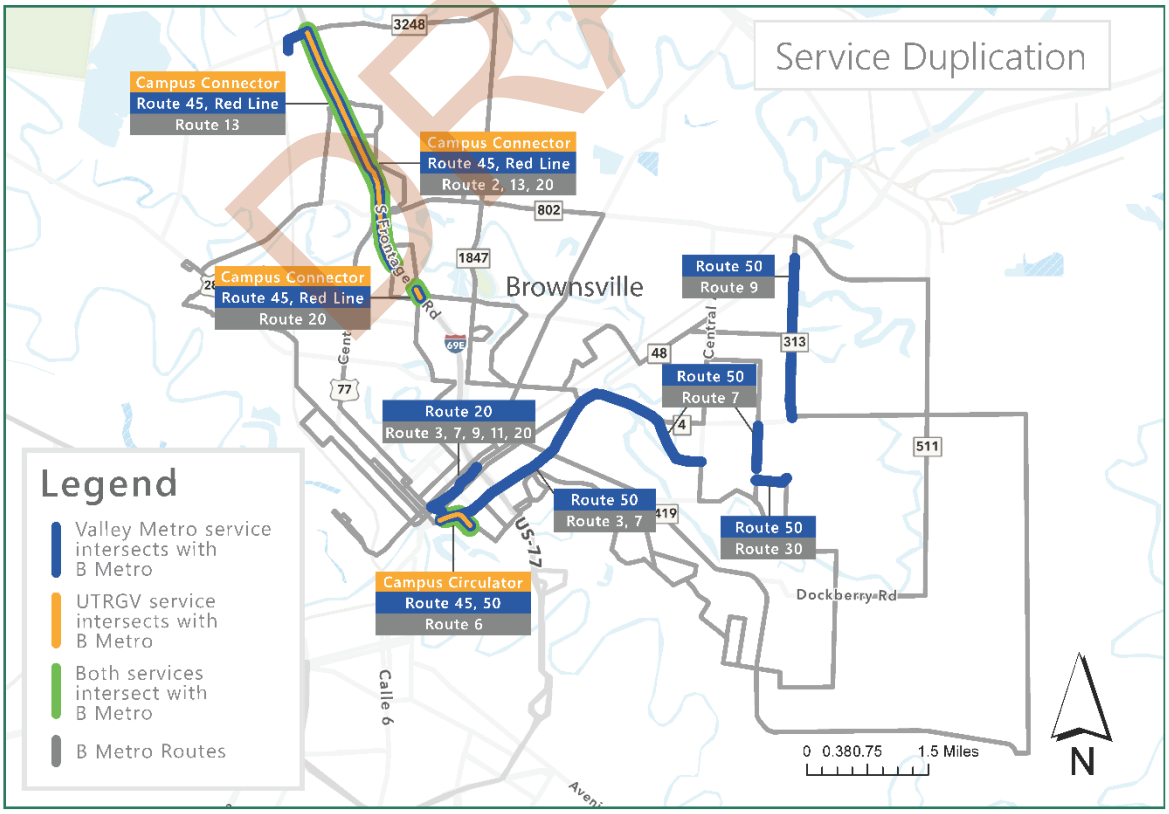
1.0 Unlinked Trips/Revenue Mile
16.9 Unlinked Trips/Revenue Hour

EXPENSES

$5.12 per Vehicle Revenue Mile
$84.23 per Vehicle Revenue Hour
$0.63 per Passenger Mile
$4.99 per Unlinked Passenger Trip

Funding Sources

	OPERATING	CAPITAL
Fares	$2,062,024	$178,113
Local	$2,190,626	$82,446
State	$563,947	$0
Federal	$3,087,997	$9,597
Total	$7,904,594	$270,156



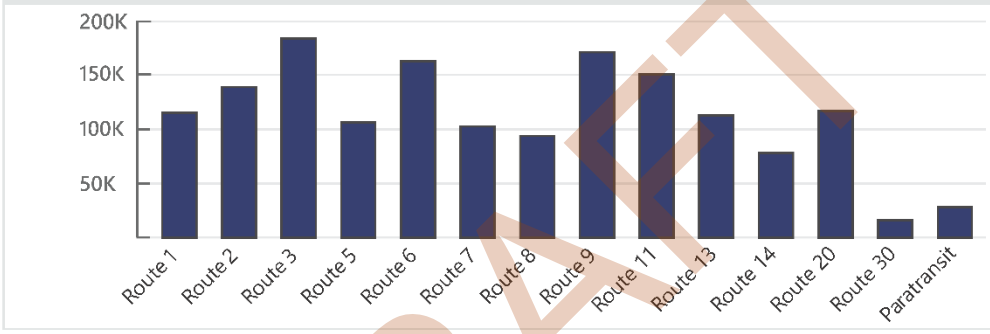
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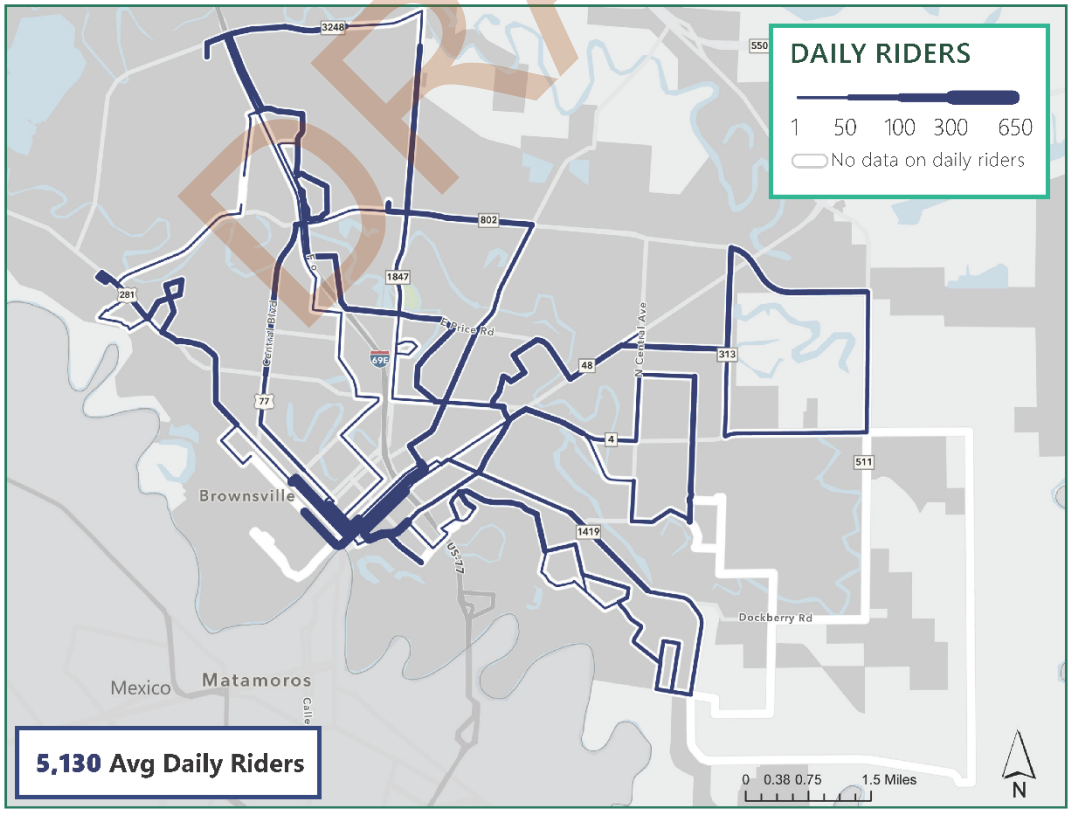
B METRO

SERVICE PROVIDER

ANNUAL RIDERSHIP

1,578,247 Annual Riders





5,130 Avg Daily Riders

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METRO MCALLEN

SERVICE PROVIDER | *SUBRECIPIENT OF LRGVDC VALLEY METRO*

The City of McAllen's Transit Department was created in 2001 in order to manage and maintain Central Station, the City's International Transit Terminal Facility. Metro McAllen currently operates nine (9) intracity bus routes and a paratransit bus service for eligible patrons. The bus system hub is the downtown terminal facility, Central Station, where passengers can connect to an array of international, national, regional and intracity destinations. McAllen is a community characterized by land use and destinations that support transit with multiple universities in the service area, a well defined urban core, and access to regional, national and international connectivity at the Central Station and the International Airport.

ROUTES

Metro McAllen currently operates 9 routes:

- Route 1
- Route 2
- Route 3
- Route 4
- Route 5
- Route 6
- Route 7
- Route 8
- Route 9

MAJOR DESTINATIONS

- McAllen Miller International Airport
- South Texas College Main Campus
- UTRGV Edinburg Campus
- Texas A&M Higher Education Center
- New Hope Children's Center
- McAllen Heart Hospital
- Cornerstone Regional Hospital
- McAllen Medical Center
- Life Care Hospitals of South Texas
- HEB Plus
- Wal-Mart Supercenter

TRAVEL TIME



74.6% travel >30 minutes



40.9% travel >60 minutes

*of approximately 85,500 people surveyed within the City of McAllen

LEAVING FOR WORK

The most frequent times people leave for work are between:

1. 7:30am-8:00am
2. 7:00am-7:30am
3. 8:00am-8:30am

*within the City of McAllen

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METRO MCALLEN

SERVICE PROVIDER

metro

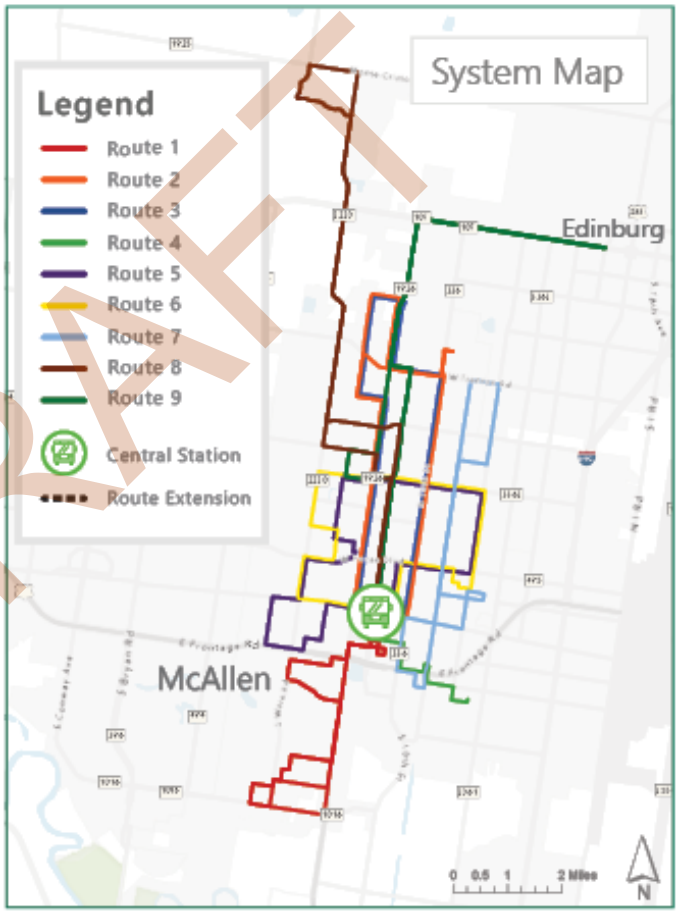
HOURS
Schedules vary by route
Monday - Saturday
6:00 am - 9:00 pm
Sunday
8:00 am - 6:00 pm

SERVICE TYPES
Fixed route local bus, circulator, commuter bus, paratransit

PEAK VEHICLE
8 vehicles deployed at peak service times

CONNECTIONS
Valley Metro
10 Edinburg-McAllen
20 Mission-McAllen
31 Business 83
Metro Express Red Line

Valley Metro does not stop in McAllen other than at Central Station and the South Texas College campus.



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METRO MCALLEN

SERVICE PROVIDER

ANNUAL DATA

617,926 Unlinked Trips
544,510 Vehicle Revenue Miles
39,284 Vehicle Revenue Hours

1.1 Unlinked Trips/Revenue Mile
15.7 Unlinked Trips/Revenue Hour

EXPENSES

$4.02 per Vehicle Revenue Mile
$55.73 per Vehicle Revenue Hour

$3.54 per Unlinked Passenger Trip

Funding Sources

	OPERATING	CAPITAL
Fares	$348,733	$0
Local	$843,540	$20,523
State	$315,500	$0
Federal	$681,667	$778,079
Total	$2,189,440	$798,602



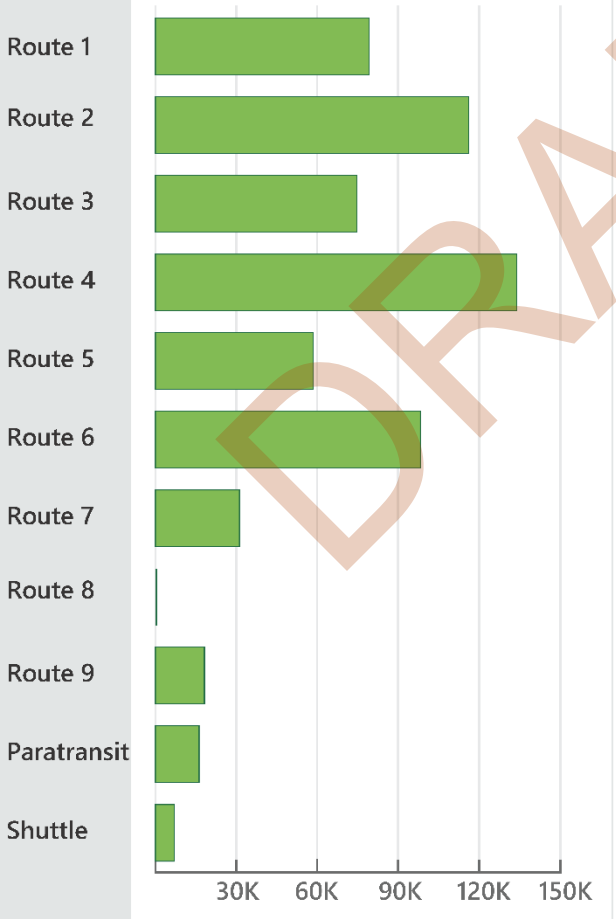
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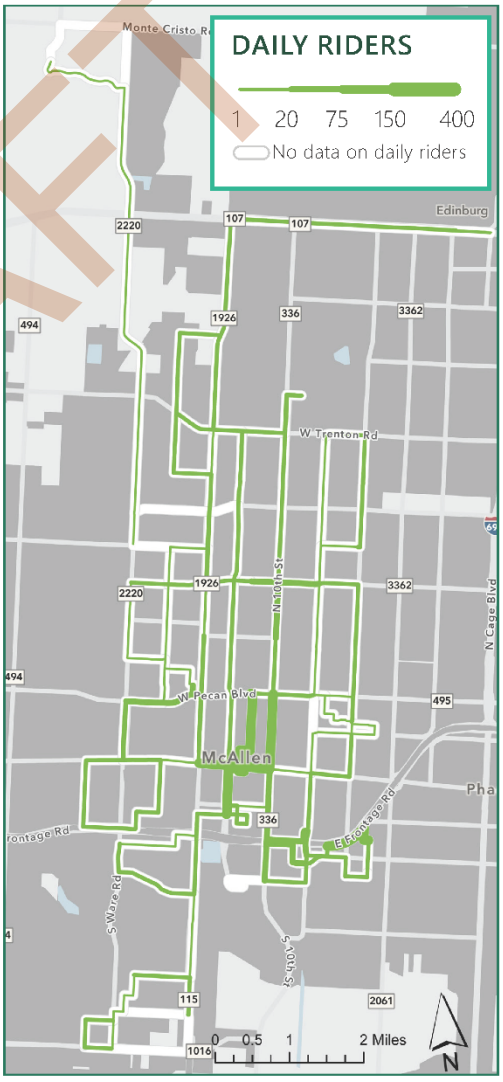
METRO MCALLEN

SERVICE PROVIDER

metro

ANNUAL RIDERSHIP





3,300 Avg Daily Riders

633,495 Annual Riders

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ISLAND METRO

SERVICE PROVIDER

Island Metro is a free fixed route system that operates within the City of South Padre Island and Port Isabel, developed by the South Padre Island City Council. The fare-free system operates seven days per week and is funded by the Texas Department of Transportation section 5311 Rural Transit Program, the City of South Padre Island, and the City of Port Isabel Economic Development Corporation.

ROUTES

Island Metro operates **4** routes in Port Isabel and South Padre Island:

Route 1 P.I. / N-Gulf / S-Padre
Route 2 P.I. / N-Gulf / S-Padre
Route 3 P.I. / Laguna Heights
Route 4 S.P.I. / N-Padre / S-Gulf

MAJOR DESTINATIONS

South Padre Island City Office
Queen Isabella Memorial Park
SPI Convention Center
Port Isabel Museum
Las Palmas Shopping Center
HEB
Wal-Mart Supercenter

TRAVEL TIME



80.5% travel >30 minutes



19.3% travel >60 minutes

*of approximately 4,800 people surveyed within the Cities of South Padre Island and Port Isabel

LEAVING FOR WORK

The most frequent times people leave for work are between:

1st 8:00am-8:30am
2nd 7:00am-7:30am
3rd 9:00am-10:00am

*within the Cities of South Padre Island and Port Isabel

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ISLAND METRO

SERVICE PROVIDER

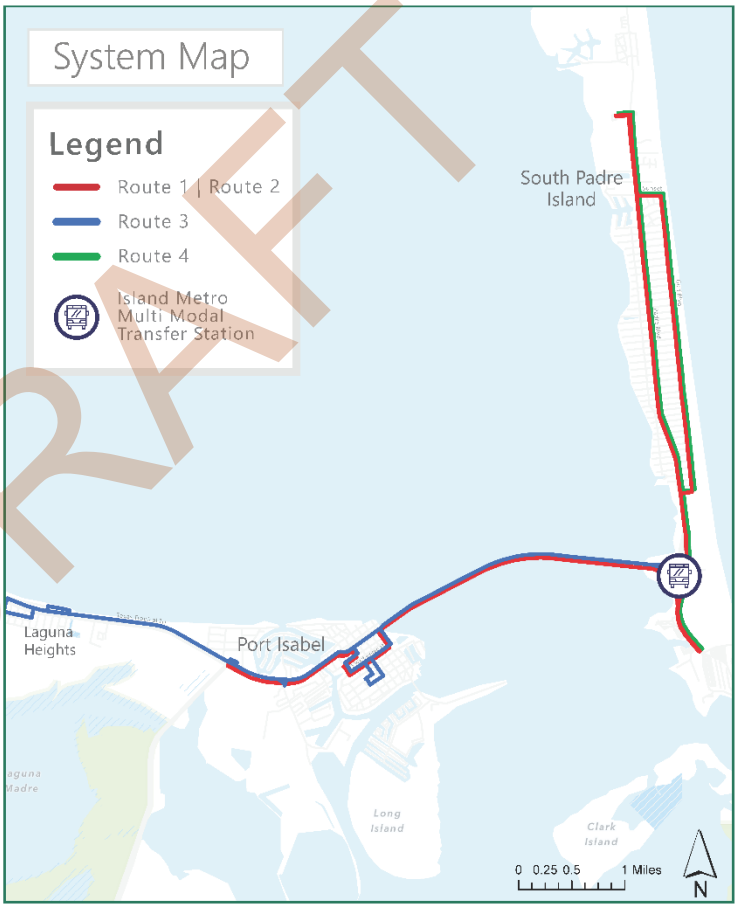
HOURS
Schedules vary by route

Monday - Sunday
7:00 am - 9:00 pm

PEAK VEHICLE
9 vehicles deployed
at peak service times

SERVICE TYPES
Fixed route local bus

CONNECTIONS
Valley Metro
50 Brownsville Port Isabel
Metro Express Blue Line



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ISLAND METRO

SERVICE PROVIDER

ANNUAL DATA

417,009 Unlinked Trips

360,723 Vehicle Revenue Miles

20,434 Vehicle Revenue Hours

1.2 Unlinked Trips /Revenue Mile

20.4 Unlinked Trips /Revenue Hour

EXPENSES

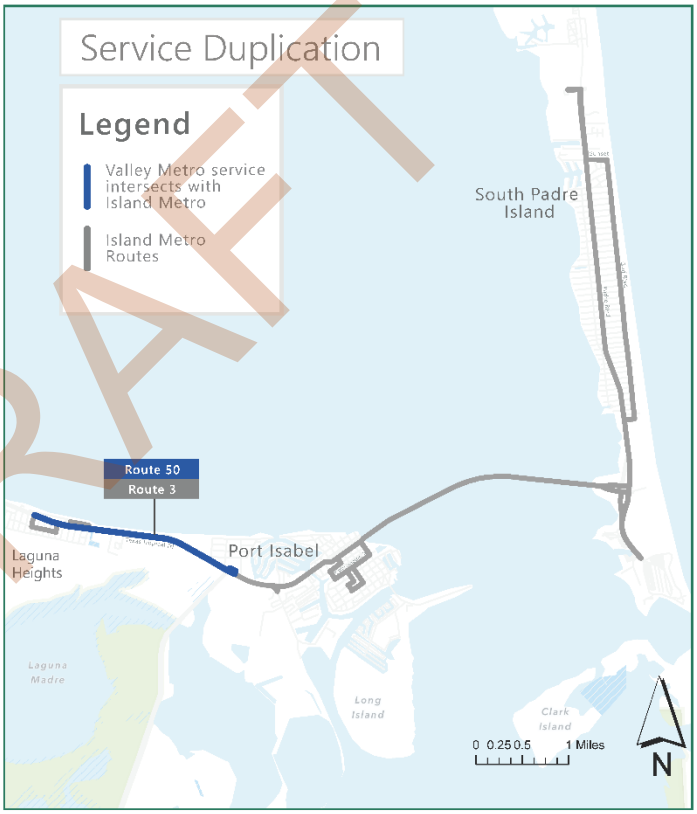
$3.93 per Vehicle Revenue Mile

$69.30 per Vehicle Revenue Hour

$3.40 per Unlinked Passenger Trip

Funding Sources

	OPERATING	CAPITAL
Fares	$0	$0
Local	$295,082	$4,186
State	$432,719	$110,233
Federal	$688,278	$944,017
Total	$1,416,079	$1,058,436



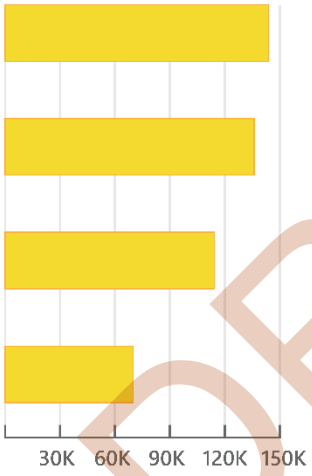
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ISLAND METRO

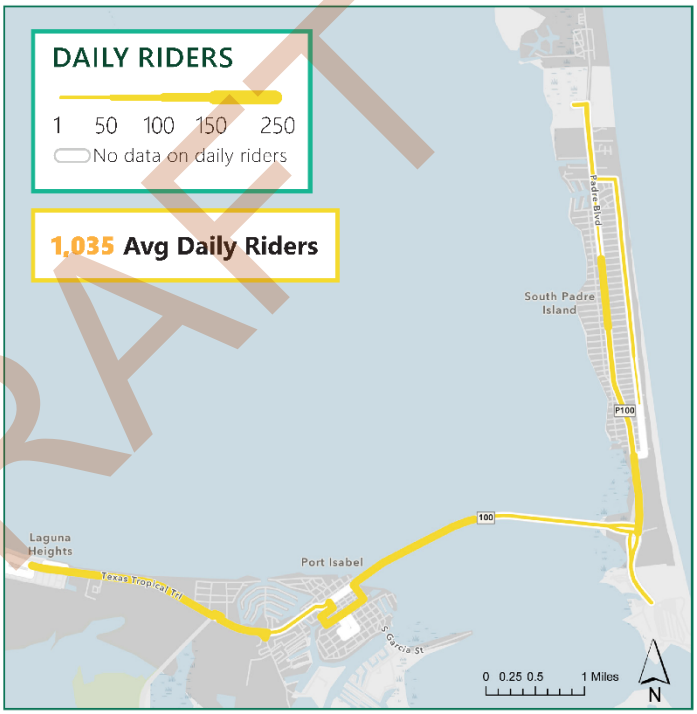
SERVICE PROVIDER

island metro

ANNUAL RIDERSHIP



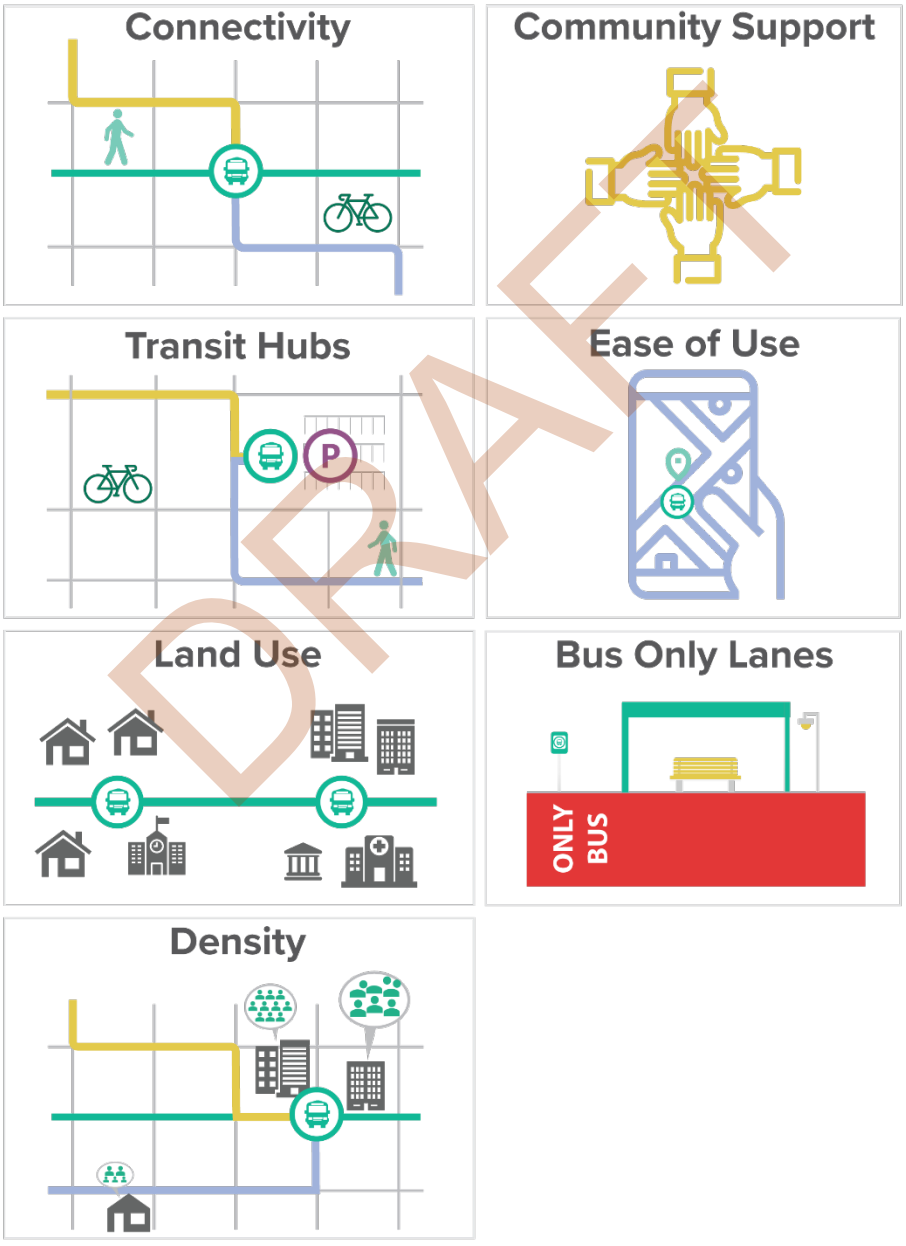
463,926 Annual Riders



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MARKET ANALYSIS

Understanding how transit service operates throughout the region is only part of the transit story. It is just as important to understand the community that transit serves. Transit is most successful when the community it operates in is comprised of transit-supportive land uses with dense populations of people who are compelled or need to use transit. It is important that the road network is also designed and built to support transit vehicles and foster multimodal connectivity, and that areas with active transportation networks compliment transit and help to provide seamless transitions between modes.



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Transit passengers are normally characterized as either choice or captive riders. As the name implies, a choice rider is defined by the fact that they choose to ride transit even though they have the option of another viable mode by which to travel, normally a car. Captive riders represent a group whose only viable option is to use transit. This term often carries a negative connotation, as it implies riding the bus is something a person is forced into doing and that if given the opportunity, they would likely choose another mode.

The problem with viewing transit through this lens is that the resulting analysis and recommendations usually end up falling into similar categories. Analyses focused on captive riders will look at where the 'need' or 'dependence' in the community is concentrated by identifying population groups characterized by low income, the elderly, or people with disabilities, while analysis that focuses on choice riders will isolate the population and employment densities so that they can maximize the greatest 'potential' or 'propensity.' When recommendations are formed in a mindset that distinguishes between these two groups, questions of prioritizing efficiency vs. coverage often arise. Solutions with choice riders in mind tend to be more focused on efficiency, which may be characterized by frequent routes running intuitive alignments, while conclusions about captive riders may lead to higher-coverage solutions, such as less frequent circulator routes that serve a larger area.

The market analysis and subsequent recommendations of this plan will not fall into one specific category. Instead, they are based on a holistic look at the community and an understanding of all the micro markets that drive transit, whether they be from need or potential. This regional market analysis will help tell the transit story of the RGV and inform recommendations that will make transit better for everyone in the community. By developing an in-depth understanding of all the markets in the region, the project team will be able to develop tailored solutions that match service delivery tools with the appropriate markets.

By reviewing the region in layers made up of transit potential, need, and destinations, the project team provides a better understanding of the Transit Market. The following section describes the methodology used by the project team to identify the Transit Markets of the RGVMAB.

The final product provides transit market scores found within the RGVMAB that help the team understand which areas support and need transit. Market scores consist of individual scores provided to demographic subgroups which represent areas in need of transit service or service improvements. All data was derived from the 2018 American Community Survey (ACS) database. Each demographic subgroup was analyzed by density per square mile to create a standardized scale for scoring. The following subsections discuss the transit measures comprising the scoring method.

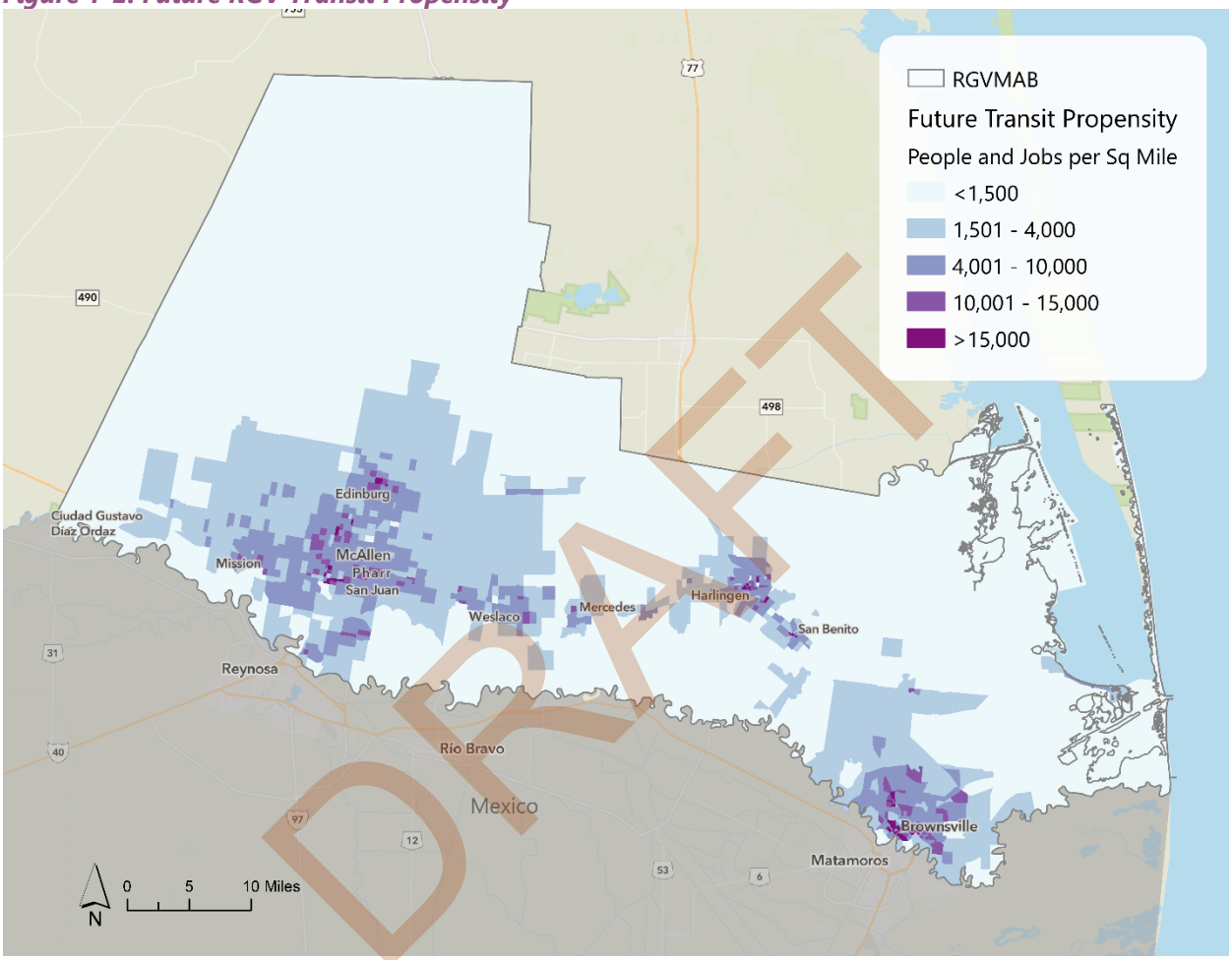
Transit Potential

The RGVMAB is a fast-growing region with expected sustained economic and population growth. Development and land use that has a mix of jobs, retail, and housing indicate areas with high activity and potential for supporting transit use. This highlights existing and future areas that have the potential to generate high ridership as people need to travel between places they live, work, shop, and conduct any recreational activities. One method for identifying transit potential is looking at locations that could support transit service. For this study, transit potential is identified through examining population and employment density or transit propensity. Transit propensity is displayed at the traffic analysis zone (TAZ) level using a

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per square mile measurement. Milestone year (2019) and forecast year (2045) RGVMPO TDM outputs for population and employment were analyzed to represent current and future transit potential in the study area. Areas with higher transit propensity can be indicative of development and land uses that support transit use, presented in Figure 2.

Figure 1-2: Future RGV Transit Propensity



Transit Need

Transit need represents citizen groups who may require special accommodations when it comes to transportation. This includes measuring population densities of those in the non-driving age population, with limited English-speaking proficiency (LEP), people representing minority populations, people with disabilities, and those with low income/under the poverty line. The consideration of these populations creates a robust understanding of existing transit need in the RGVMAB.

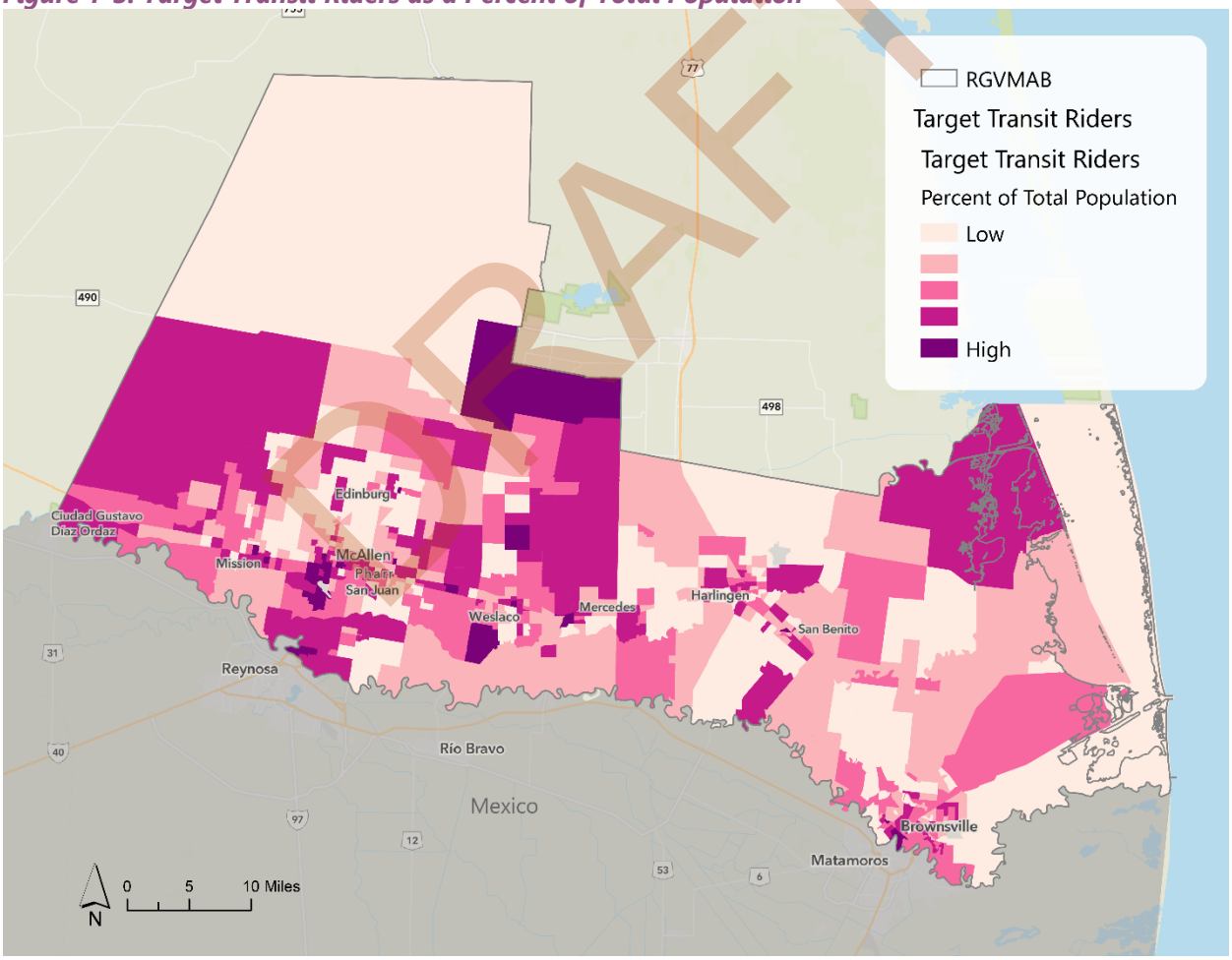
An analysis of target transit riders can help to identify the locations which have a higher need for transit service and help to prioritize transit adjustments to better support the community. A target transit rider (TTR) includes the following demographic subgroups:

- Non-driving population (youth under 18, and elderly over 65)
- Population with limited English proficiency (LEP)

- Minority populations
- Populations with disabilities
- Population living in poverty, and
- Population without access to a personal automobile.

It is generally assumed that individuals in these demographic subgroups are more likely to rely on public transportation for their mobility needs. Locating the areas in which these subgroups are concentrated can help ensure that the people with the highest need for services have access to reliable and effective transit. It should be noted that a person might be counted in more than one category of need. For example, someone who is 16 years of age, speaks limited English, and lives in a household without a vehicle would be counted in three of the demographic subgroups. This inclusion of individuals in multiple categories benefits the analysis because it ensures that locations with people who have multiple factors limiting their mobility are highlighted prominently in the analysis. A graphic representation of the analysis of TTR for the region is presented in Figure 3.

Figure 1-3: Target Transit Riders as a Percent of Total Population



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Transit Destinations

The analysis of existing conditions considered access to destinations, especially key destinations by transit within the RGVMAB. A total of 32,149 businesses were identified in the RGVMAB. From this total, roughly 44% could be categorized for this analysis.

Accessibility to many amenities can ensure that residents who rely on transit are able to access the basic goods and services for "daily" life. The following major categories were used to organize the destinations dataset:

- Government and Public Services: post offices, libraries, food banks, homeless shelters, government offices, community centers, etc.
- Healthcare Facilities: physicians, pharmacies, dentists, clinics, childcare, hospitals, etc.
- Grocery Stores: major grocery stores, convenience stores, food markets, and health food stores.
- Schools: nurseries, public schools (K-12), colleges and universities, and tutoring services.
- Financial: banks, financial planning, tax return preparation services, accountants, etc.
- Retail: locations for shopping and running errands including clothing, general retail, sporting goods, electronics, beauty salons, pet care, etc.
- Social and Recreational: movie theaters, restaurants, bars, hotels, campgrounds, etc.

Although it is important for transit riders to have access to many goods and services throughout their communities, some services are essential for "daily" life. There are 895 key destinations identified in the RGVMAB, including:

- Government Facilities: community and recreation centers, post offices, libraries, and social service and welfare
- Hospitals and Medical Centers
- Major Grocery Stores
- Public Schools and Colleges

Distribution of Destinations

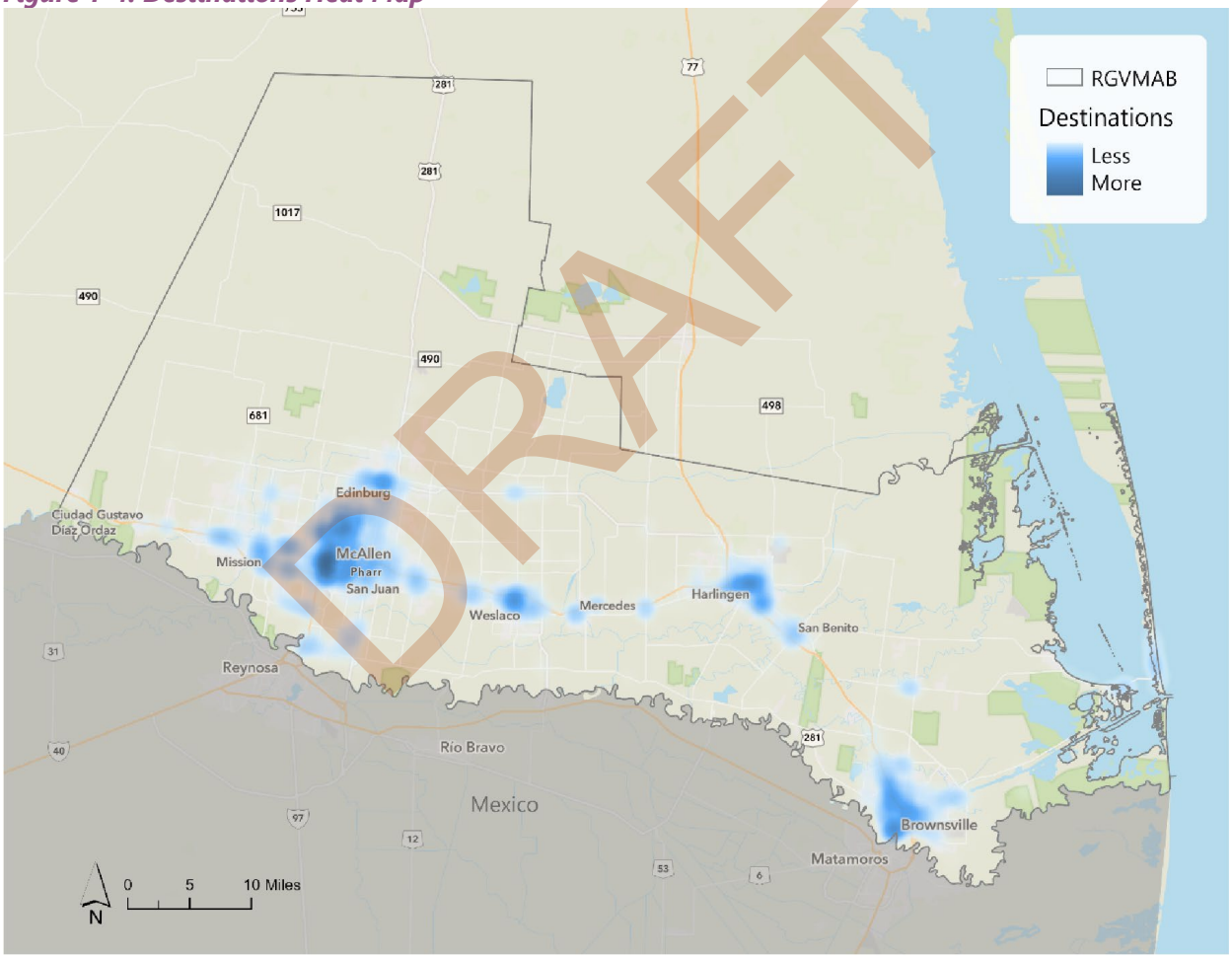
The distribution of destinations in the region can provide insight into areas that require transit services. Many of the businesses in the region are concentrated in the major urban areas or along major corridors within the RGVMAB, presented in Figure 4. Among the types of destinations, most are within the 0.25-mile walkshed to a regional transit route. Healthcare, financial services, retail, and locations for social and recreational activities are highly accessible with more than 80% of destinations in the RGVMAB within access to a transit route, shown in Table 1.

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Table 1: Regional Transit Coverage of Destinations by Category

Destination Category	RGVMAB	Within Regional Transit Walkshed	% Covered by Transit
Government	577	438	76%
Healthcare	2,074	1,754	85%
Grocery Stores	599	432	72%
Schools	643	351	55%
Financial	1,909	1,632	85%
Retail	3,599	3,013	84%
Social and Recreational	2,593	2,123	82%

Figure 1-4: Destinations Heat Map



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A Region in Layers – Transit Market

Locations of people and jobs which have the potential to support transit, populations in need of transit, and desirable destinations to be served by transit all indicate and contribute to the market for transit in the region. Identifying locations that have high potential markets and inadequate transit supply can assist in the prioritization of future transit investments. For this part of the analysis, criteria from the previous sections were selected, standardized, and scored to provide a cumulative look at transit demand in relation compared to the transit supply. This identifies gaps where demand is not currently met and will help with route design in future stages of the Transit Development Plan (TDP).

Two criteria were identified from each of the three analyses of the transit market (potential, need, and destinations). The criteria selected from the existing conditions analysis are shown in Table 2.

Table 2: Transit Market Score Criteria

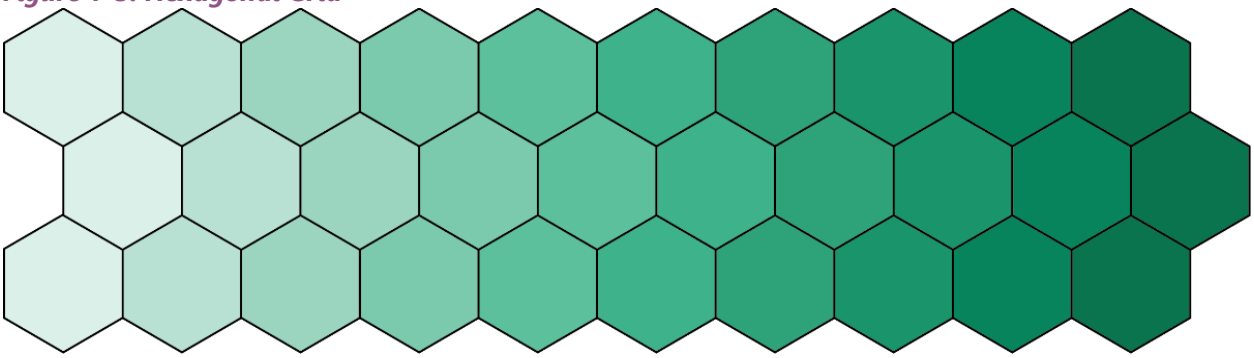
	Criteria	Description	Geography
Transit Potential	Propensity	Estimated number of people and employment per square mile in 2019	Traffic Analysis Zones (TAZ)
	Future Propensity	Forecasted number of people and employment per square mile in 2045	Traffic Analysis Zones (TAZ)
Transit Need	Target Transit Riders (TTR)	Percent of estimated target transit riders relative to total population	Census Block Groups
	TTR Subareas	Comparison of the relative need of the highest need locations	Census Block Groups
Transit Destinations	Destinations	Location of all destinations including schools, shopping, healthcare, banks, social and recreational, and tourism related locations.	Point Data (X and Y)
	Key Destinations	Location of "essential" locations only, or those more crucial to transit riders as described in the destinations section	Point Data (X and Y)

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The criteria were standardized in order to make it easier to draw comparisons. The first method for creating a standard unit of measurement was to develop one identical unit of geography, as each of these datasets have different geographies (TAZ, Census block groups, point data). One method is to use hexagon grids to aggregate and compare data. This helps reveal patterns in the data and is suitable for both shape-based and point-based data. For this analysis, the region was divided into hexagons that are 0.25 square miles each, shown in Figure 5.

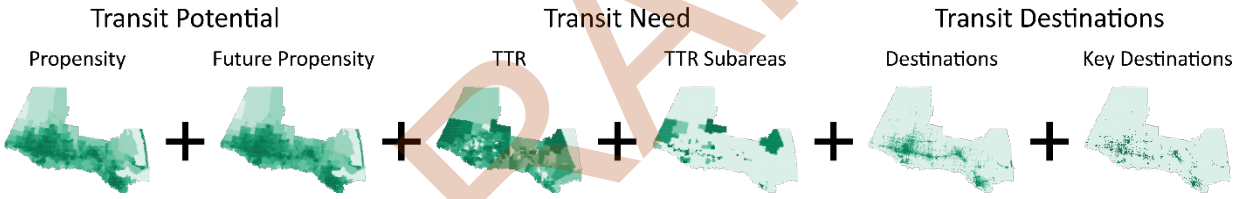
Each criterion was aggregated to the hexagonal grid using a spatial join in GIS. For shape-based data like the TAZ and Census block groups, a criterion was averaged where a hexagon overlapped more than one shape.

Figure 1-5: Hexagonal Grid



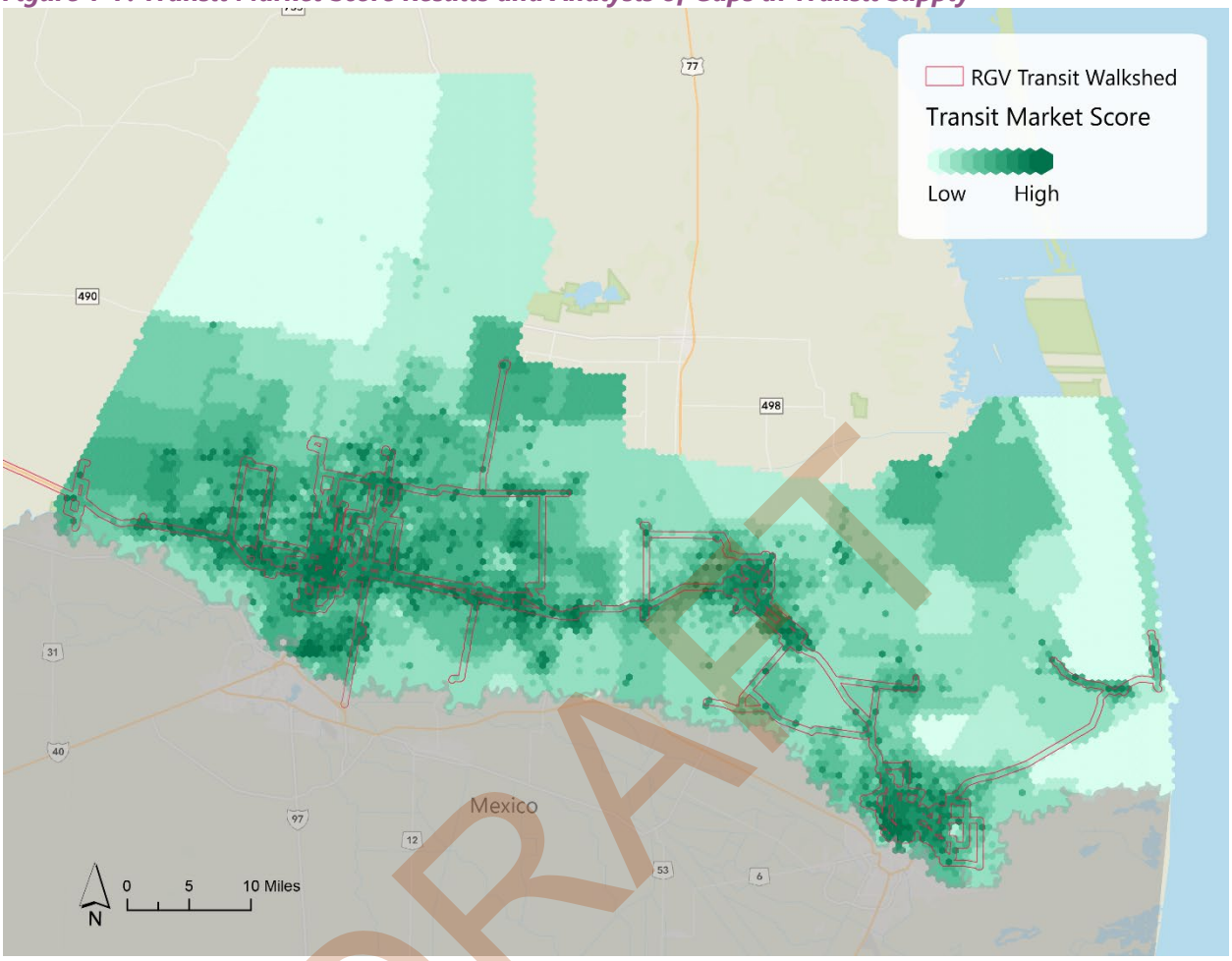
To finalize the standardization process, the project team converted the criteria to a 100-point scale. Each measure was normalized through scoring assignments based on a scale of 0 - 100 for each hexagon. Hexagons with the highest scores contain a value of 100, while the lowest contain a value of 0. For example, a hexagon with a propensity value that is higher than 90% of other propensity hexagons is assigned a value of 90 out of 100. Once each measure was scaled from 0 -100, the measures were aggregated to generate final combined scores, shown in Figure 6. Final scores were then normalized on a scale from 0 - 100. This final combined score is a transit market score which indicates the demand for transit based on the cumulation of these measures, shown in Figure 7.

Figure 1-6: Development of Transit Market Score



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Figure 1-7: Transit Market Score Results and Analysis of Gaps in Transit Supply



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RGVMAB Key Findings

The following lists key findings resulting from a GIS spatial analysis conducted on the finalized transit market scores for the RGVMAB:

- High scoring block groups tend to be settled around the main urban areas of the RGVMAB.
    - McAllen, Edinburg, Harlingen, San Benito, and Brownsville
- High scoring block groups also tend to be in smaller area cities, especially along interstate/highway infrastructure, namely I-2.
    - Mission, Pharr, San Juan, Alamo, Donna, Weslaco, and La Feria
- The spatial distribution of market scores puts emphasis on the need for interagency coordination.
    - To achieve a regional voice, agencies will need to collaborate to create an effective and efficient transit system.
    - Accordingly, local transit systems must meet their needs internally and provide connections to regional service (Valley Metro)
- Regional service needs to extend to smaller municipalities lacking local services using regional transportation infrastructure.
- Regional connectivity between smaller urban areas and larger municipal amenities (e.g. healthcare, higher education, etc.) needs to increase.

Sub-Region Findings

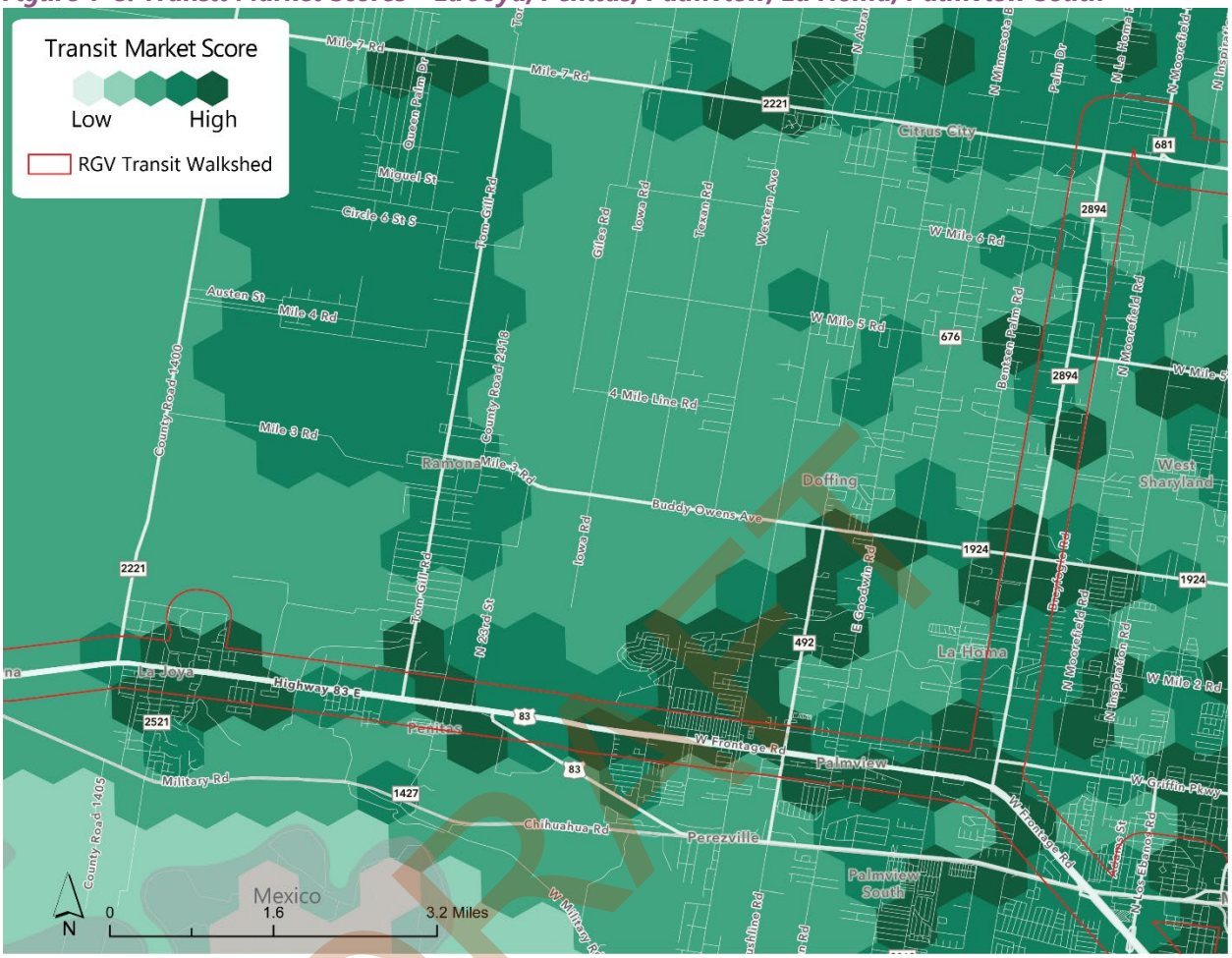
The following sections will provide more detail on the GIS analysis for specific sub-regions of the RGVMAB.

Hidalgo County I-2/I-69C Corridors

West Hidalgo County contains high-scoring hexagons along the US 83/I-2 corridor intersecting La Joya, Penitas, and Palmview. High-scoring hexagons deviate to the north and south near La Homa and Palmview South (Figure 8).

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Figure 1-8: Transit Market Scores – La Joya, Penitas, Palmview, La Homa, Palmview South



The area extending from Mission to Alamo (west to east) and Edinburg to Pharr (north to south) displays a zone with contiguous high-scoring hexagons, suggesting a mixture of transit potential and need in the area, shown in Figure 9 and Figure 10. The following describes key findings for McAllen, Mission, Pharr, and Edinburg, shown in Figure 9, and the key findings for Donna, Weslaco, and Mercedes, shown in Figure 10.

McALLEN

The City of McAllen displays transit markets extending north from FM 1016 to West Trenton Road near Tuscan Estates. As the most expansive transit potential/needs area (based on market scores) within the I-2 and I-69C corridors, the area effectively encapsulates the following municipal districts:

- La Paloma
- McAllen Historic Business Redevelopment zone
- De Palmas Historic District
- Westway Avenue
- Las Villas/Emerald Point
- Tuscan Estates

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It is important to note the presence of a strong existing transit service provider in Metro McAllen. Moving forward, it will be important to emphasize connectivity with regional services such as Valley Metro to support the RGVMPO's regional vision.

MISSION

Areas with high market scores in Mission exist throughout the municipal boundary, including Mission City Hall, the Mission Police Department, and the Mission Housing Authority.

PHARR

High scoring hexagons tend to cluster along the US 281 corridor. The contiguous area extends north from Ridge Road to FM 3461 and contains destinations such as Liberty Middle School, PSJA Stadium, Food Bank of the Rio Grande Valley, and HEB Plus. The second cluster is located south of downtown Pharr.

EDINBURG

Edinburg presents high-scoring hexagons just west of the central business district (CBD), including Altamira West Number 2 Colonia and Wood Colonia. Specific destinations include the University of Texas Rio Grande Valley (UTRGV) – Edinburg, the W. University Drive Walmart Supercenter, and Region One Education Center. Other areas of high potential/need include hexagons containing the Hidalgo County Courthouse, Apollo Park and the Sacred Heart Catholic Church, and the area surrounding I-69C south of E. University Drive containing Lyndon B. Johnson Elementary.

DONNA

The City of Donna contains two significant clusters regarding transit potential and need. The first occurs west of central Donna and spans from I-2 to South Avenue, and contains destinations such as Big Valley Trailer Park, HEB, and the Holy Cross Center. The second exists southeast of the Hooks Avenue and S FM 493 intersection and contains St. Joseph Catholic Church, Guzman Elementary School, Kwik Pantry Food Mart, Dolphin Motel and RV Park, and Boyce Memorial Park.

WESLACO

High-scoring hexagons exist between E. Business 83 and I-2 and contain major retail centers and destinations such as Weslaco High School, South Texas College – Mid-Valley Campus, and HEB. High-scoring areas also extend south of E. Business 83 along S. Texas Boulevard and contain destinations such as Knapp Medical Center and Weslaco East High School.

MERCEDES

The majority of West Mercedes contains high scoring transit potential/need hexagons. The Rio Grande Valley Premium Outlets are also located east of FM 491 along I-2 and should be considered for future transit improvements.

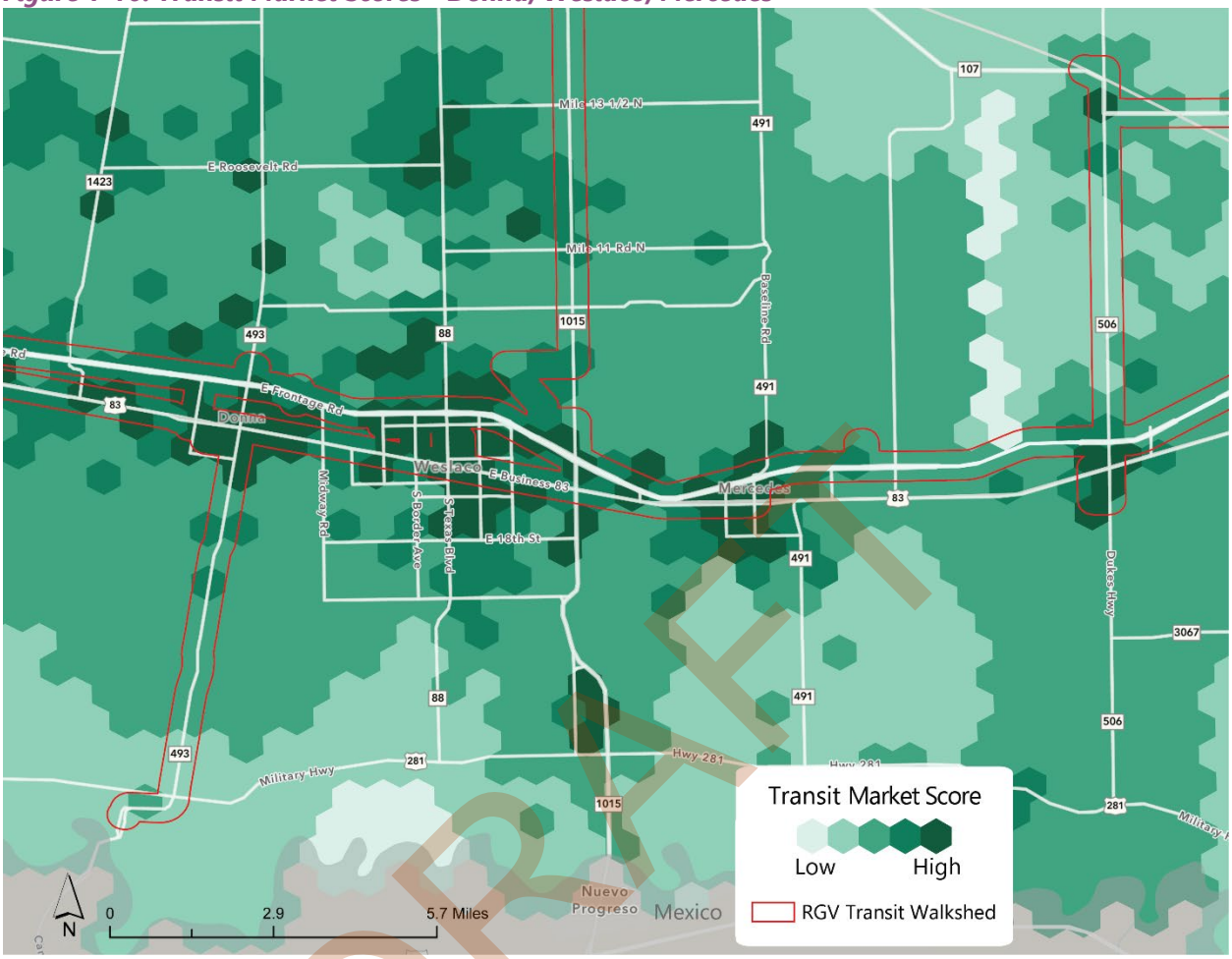
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Figure 1-9: Transit Market Scores - Mission, McAllen, Edinburg, Pharr



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Figure 1-10: Transit Market Scores - Donna, Weslaco, Mercedes

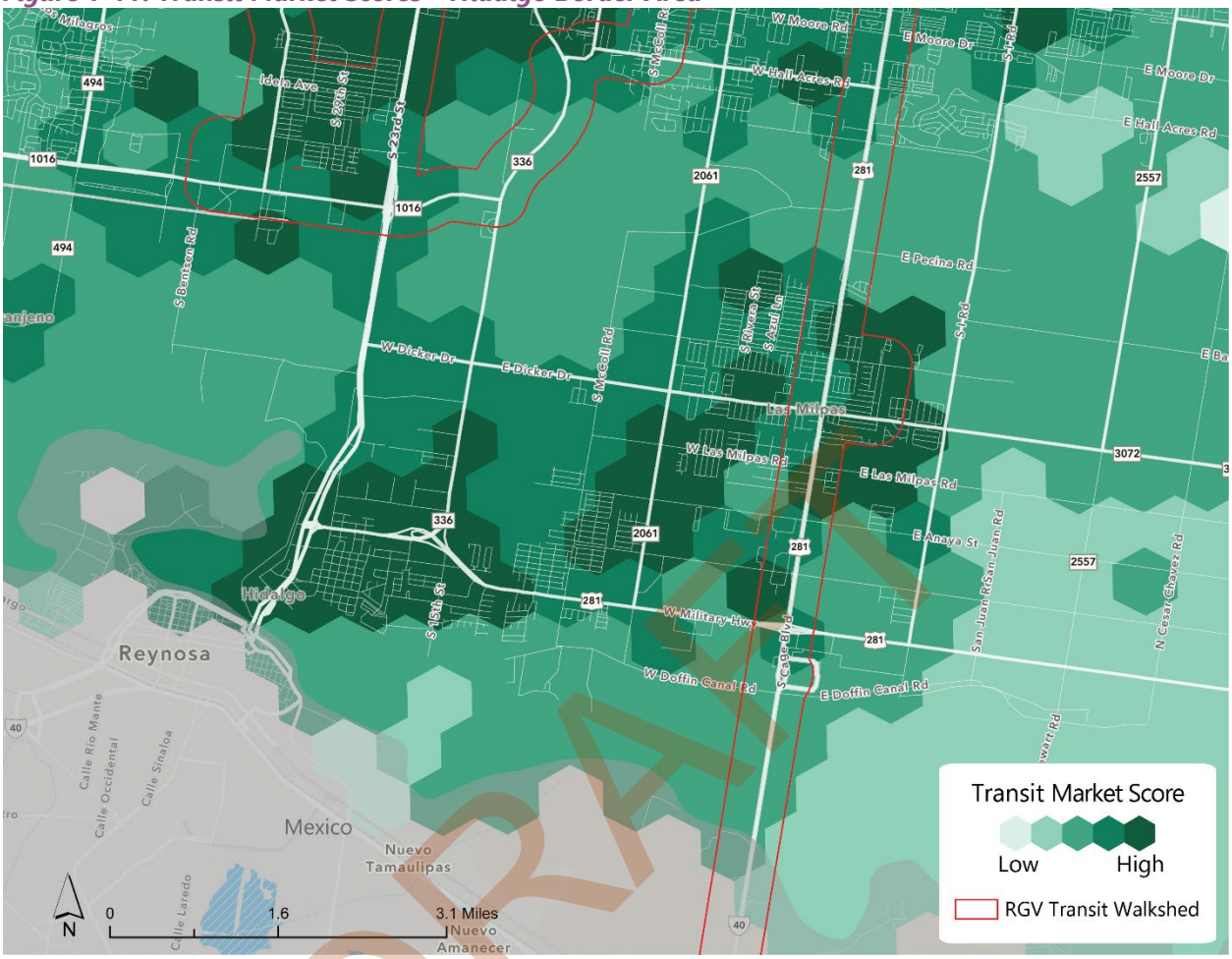


Hidalgo Border Area

The Hidalgo border area, anchored by the McAllen-Hidalgo International Bridge, contains dense clusters of transit potential/need directly along the border, along the US 281 corridor, and surrounding Las Milpas. This is an important area for consideration as it borders the dense city of Reynosa, Mexico, and provides an opportunity to provide critical connections to established transit systems such as Valley Metro and Metro McAllen. Currently, jitney service is currently provided by private agencies connecting the cities of Hidalgo and McAllen, and Valley Metro provides a vehicle to Hidalgo for elderly transportation. See Figure 11.

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Figure 1-11: Transit Market Scores – Hidalgo Border Area

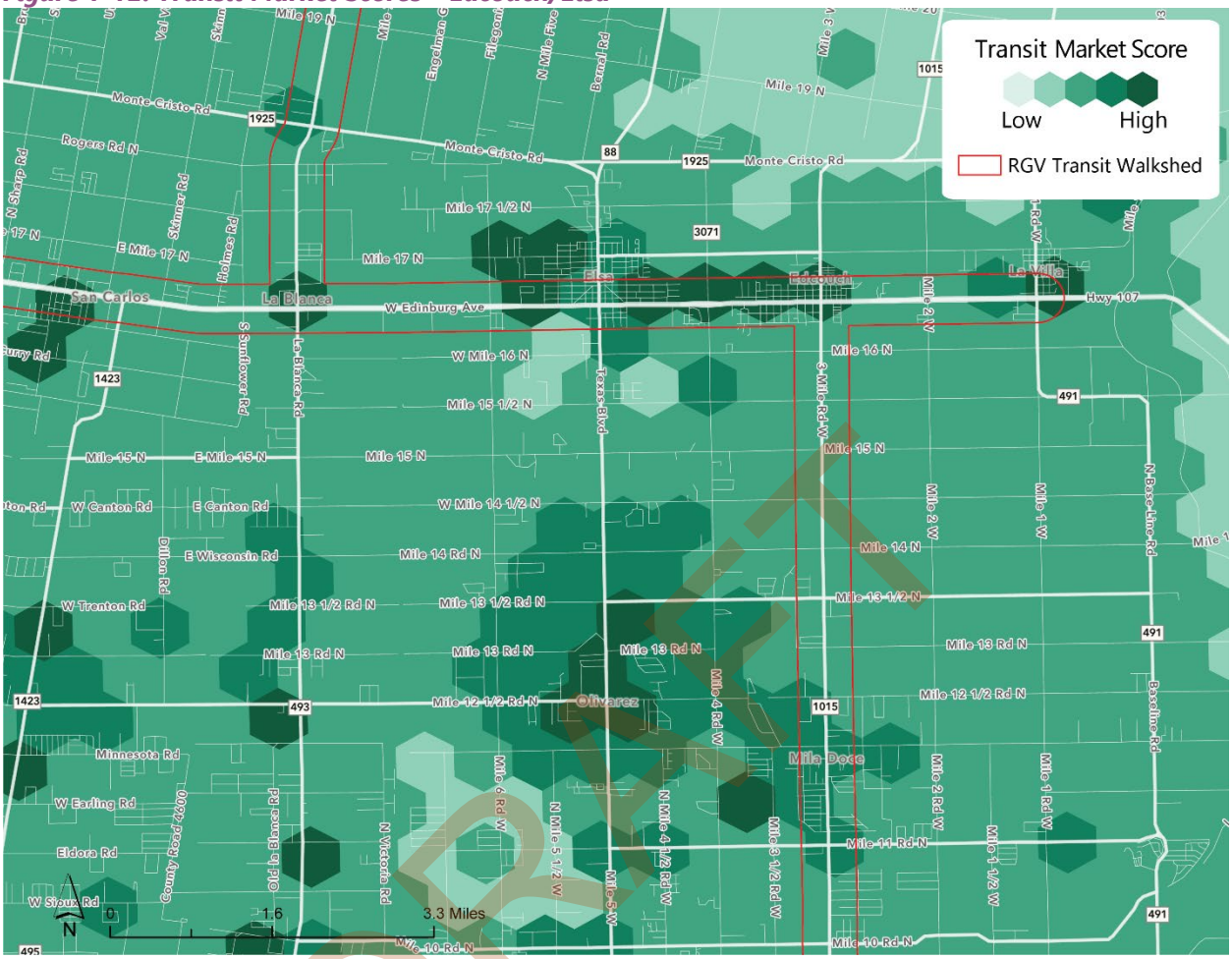


Edcouch/Elsa Area

While scores in this area are not as densely clustered as other major municipal areas, the Edcouch/Elsa municipal area is important to consider for potential transit moving forward, shown in Figure 12. While population and employment densities are generally lacking in comparison to other regional jurisdictions, contiguous high-scoring hexagons in the area tend to be in municipal areas and along rural highways and major arterials. This suggests that these areas contain significant transit needs populations (i.e. elderly, disabled, impoverished, etc.). To create a thriving region, consideration must be made for more rural areas.

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Figure 1-12: Transit Market Scores – Edcouch/Elsa



Harlingen/San Benito Area

The Harlingen municipal area contains critical interstate and highway infrastructure for the RGVMAB, as well as the Valley International Airport (VIA) which contributes to the movement of people and goods throughout the area. It also represents an area with high population and employment densities bridging the gap between McAllen and Brownsville, shown in Figure 13. Because of this, it is critical for the RGVMPO TDP to emphasize both regional and local transit services.

HARLINGEN

Like McAllen, the Harlingen municipal area contains contiguous hexagons containing high scores, extending northeast along I-69E and US 77. The following areas should be considered highly when creating transit alternatives:

- The area adjacent (east) of I-69E containing the Central Park shopping mall, serving as a major commercial hub for the region.
    - This is also adjacent to the Valle Vista Mall, Walmart Supercenter, and Bass Pro Shops.
- Central Harlingen, surrounding the commercial and residential areas located along Harrison and Tyler Avenues, which contains local business district Jackson Avenue.

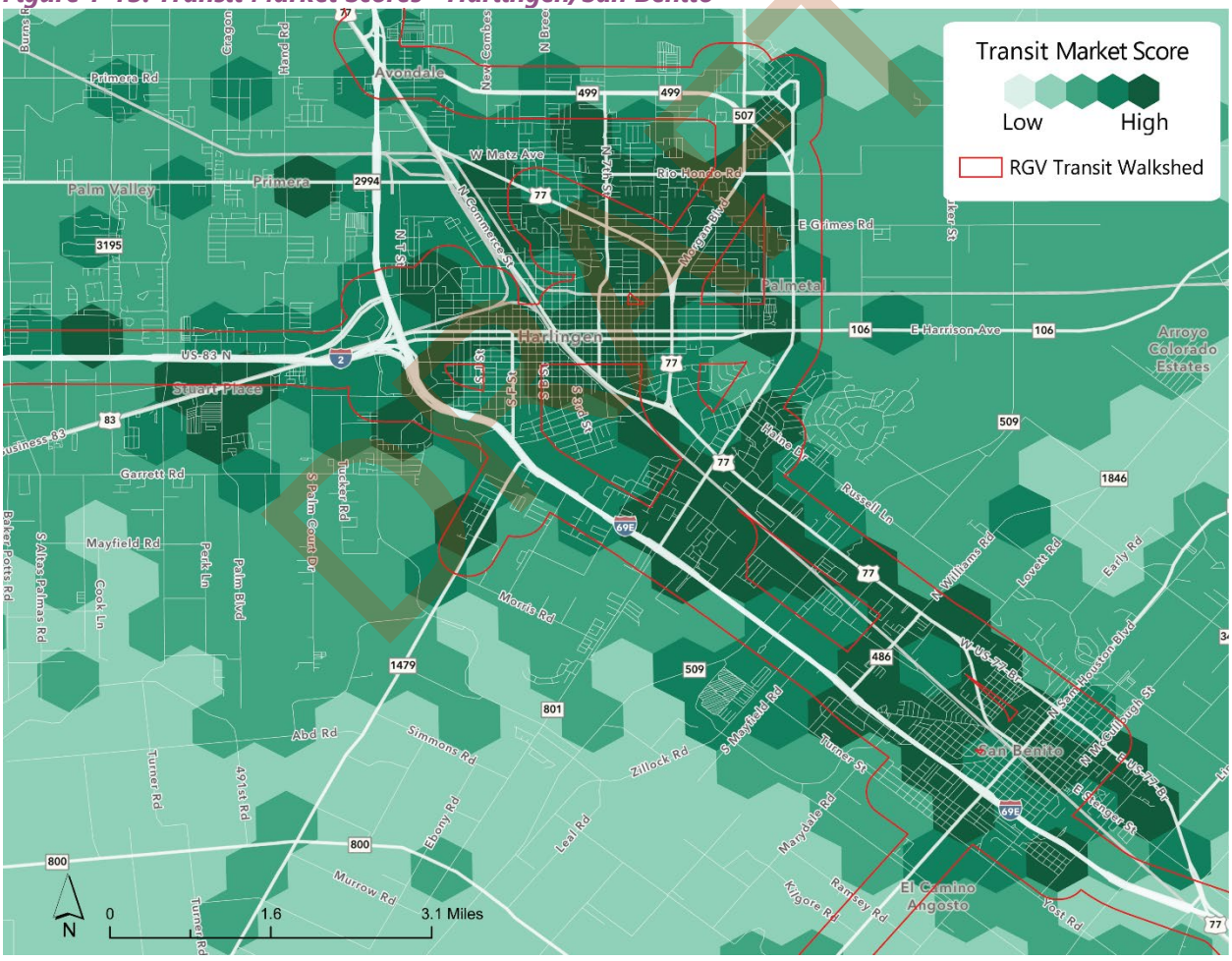
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- North Harlingen extending northeast from north Commerce Street and Business Hwy 77 (Sunshine Strip).
    - This includes Zavala Elementary School, the Texas Department of Public Safety (DPS), Harlingen High School, Jane W. Long Elementary School, and the Keys Academy.
- Valley International Airport (VIA) and its surrounding area.
- Block groups south of Arroyo Colorado, including destinations such as Rangerville Park, Bee First Primary Home Care and Hospice, Harlingen Nursing and Rehabilitation Center, Valley Baptist Medical Center – Harlingen, and Harlingen Medical Center.

SAN BENITO

- The City of San Benito contains clusters of high-scoring hexagons surrounding downtown San Benito and just east/northeast of the city center across from the Heavin Resaca Trail. The highest scoring areas tend to surround I-69E and US 77 and lead into the Harlingen municipal area.

Figure 1-13: Transit Market Scores - Harlingen/San Benito



Brownsville/Cameron Park Area

The Brownsville/Cameron Park area presents a unique opportunity for transit as it shares a border with the city of Matamoros, Mexico, and has dense development patterns radiating out from the Gateway International Bridge Port of Entry (POE). Accordingly, these locational characteristics and land use

development trends generate dense areas of transit potential and need throughout the region, shown in Figure 14.

BROWNSVILLE

Brownsville contains dense development of both population and employment, containing local businesses, large commercial developments, higher education facilities, and healthcare facilities. At a high level, hexagons with significant scores vary throughout the Brownsville municipal boundary, extending north from the US–Mexico border to FM 802 and east to west from roughly El Paso Road to the Brownsville-SPI International Airport. The following areas should be considered as high priority areas moving forward:

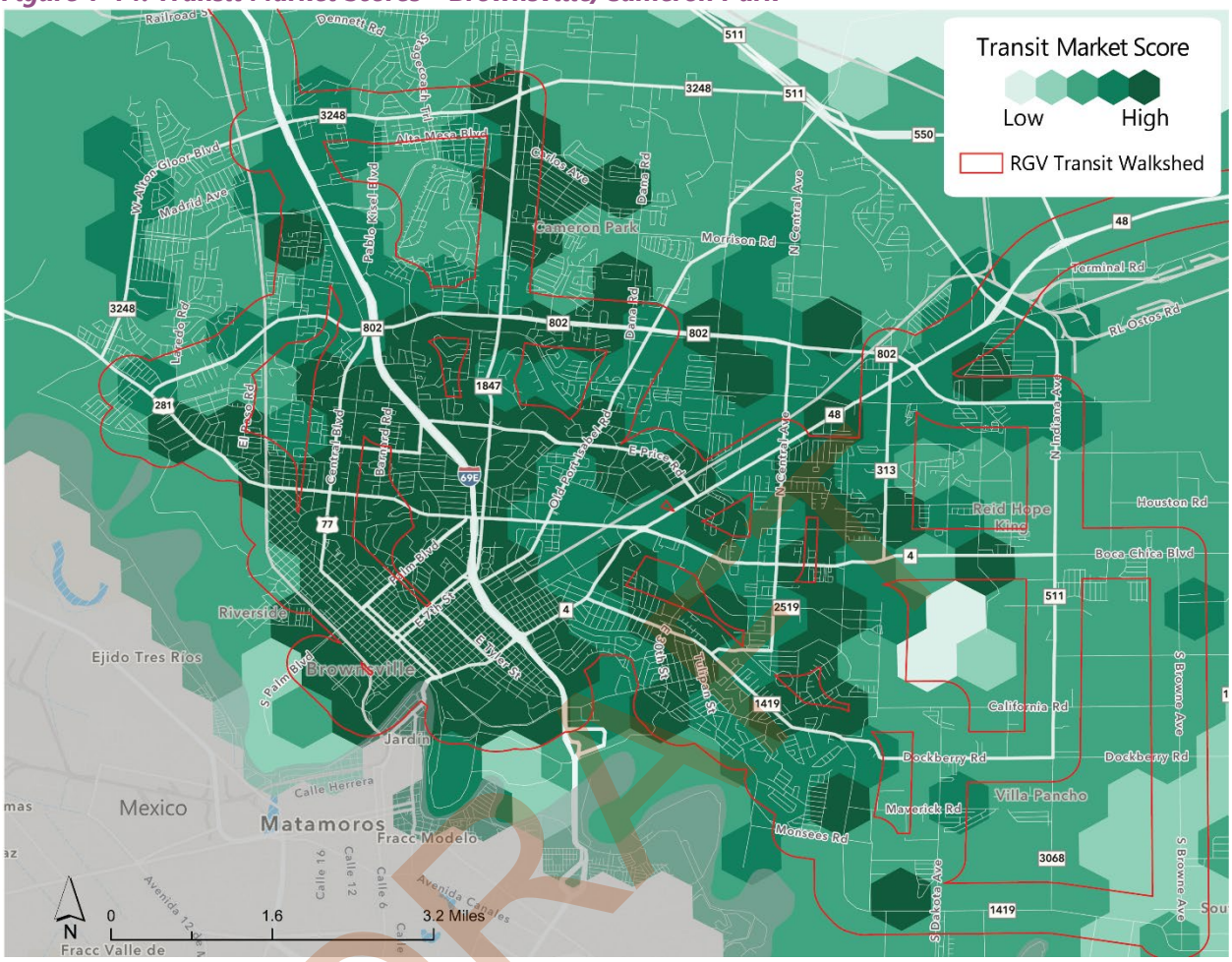
- Downtown Brownsville and the Brownsville border area.
- The immediate area northwest of downtown, containing destinations such as Sams Memorial Stadium, Valley Baptist Medical Center – Brownsville, Adult Continuing Education, and Central Middle School.
- The immediate area northeast of downtown, containing dense residential development, Cameron County Detention Center, Cameron County Courthouse, and Southern Pacific Linear Park.
- The area extending southeast between Tyler Street and UTRGV – Brownsville, containing Longoria Elementary School and UTRGV Casa Bella Apartments.
- The Southmost Blvd. region of the City of Brownsville, specifically following 14th Street/Southmost Boulevard containing a mixture of residential and commercial land uses, including HEB.
- North Brownsville east of I-69E, containing Rockwell Manor Apartments, La Villita Apartments, Rockwell Grocery, and Perez Elementary School. This area is also adjacent to retail development including Sunrise Mall, Las Tiendas Plaza, and the Walmart Supercenter.
- Hexagons surrounding Boca Chica Boulevard and Billy Mitchell Boulevard with destinations such as Waterside Apartments, Boca Palma Townhomes, and Conquistador Apartments
- Northeast Brownsville, which is largely residential and contains Perkins Middle School and Sunset Palms RV and Mobile Home Park.

CAMERON PARK

Cameron Park is a colonia not annexed by the City of Brownsville that contains largely residential developments and is seeing growth (Figure 14). Large subdivisions surrounding FM 1847 display high transit market scores and should be considered throughout the TDP process.

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Figure 1-14: Transit Market Scores – Brownsville/Cameron Park

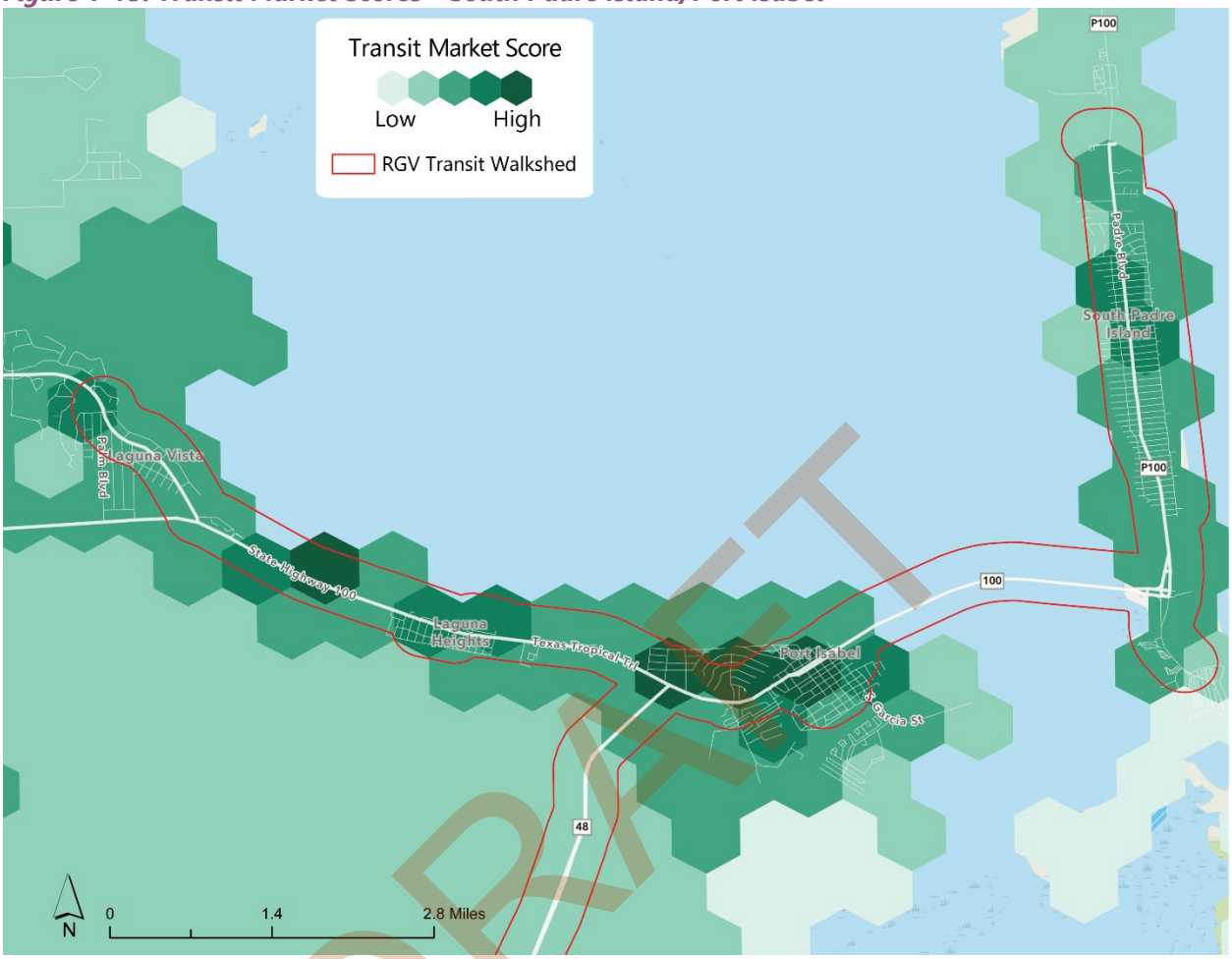


South Padre Island/Port Isabel

Clusters of transit potential and need follow the SH 100 corridor, showing prominent transit market scores in Laguna Vista, Laguna Heights, Port Isabel, and north South Padre Island, shown in Figure 15.

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Figure 1-15: Transit Market Scores – South Padre Island/Port Isabel



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Border Crossings

The RGVMAB contains 11 border crossings (including roadway, railway, and ferry infrastructure) that facilitate the movement of goods and people between the region and Mexico. Due to the large quantity of border crossing assets, as well as proximity to densely populated cities in Mexico, the RGVMAB serves as a critical region for border transportation activity.

Accordingly, it is important to understand current conditions of the RGVMAB's border crossing facilities as border movement presents an opportunity to provide public transportation and increase accessibility and mobility throughout the RGVMAB. Table 3 below presents border crossing modes from the 2019 TxDOT-TPP Texas-Mexico International Bridges and Border Crossings Study.

Table 3: RGVMAB Border Crossing Modes and Change in Truck Volume (2008 to 2018)

Border Crossing	POV	Ped	Bus	Rail	Truck
Texas-Mexico Border Region	X	X	X	X	X
Los Ebanos Ferry	X	X			
Anzalduas Int. Bridge	X		X		
McAllen-Hidalgo Int. Bridge	X	X	X		
Pharr-Reynosa Int. Bridge	X	X	X		X
Donna Int Bridge	X				
Weslaco-Progreso Int. Bridge	X	X	X		X
Free Trade Bridge	X	X	X		X
Brownsville West Rail Bridge				X	
B&M Bridge	X	X			
Gateway Int. Bridge	X	X	X		
Veterans Int. Bridge at Los Tomates	X	X	X		X

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Out of the 11 total border crossings in the RGVMAB, seven allow bus traffic and eight allow pedestrian crossings. In 2018 alone, the Rio Grande Valley border crossing region experienced 65,876 passenger bus crossings, along with 7.2 million pedestrian crossings. Further, TDM outputs show high daily trip counts crossing the border (to and from the RGVMAB) in the Hidalgo/Reynosa and Brownsville/Matamoros border crossing areas (see the Desire Line Analysis section below), suggesting cross border travel to be a prominent daily activity in the region.

Railroad Network

RGV's inland and border location creates opportunity for the region, as the area has become a crossover station for both international and domestic rail freight traffic (specifically east-west traffic in the United States), shown in Figure 16. Both the Union Pacific Railroad (UP) and BNSF Railway (BNSF) connect with the Ferrocarril Mexicano Railroad (FXE) in Ciudad Juarez and Chihuahua, Mexico, producing 11% of all border crossing rail freight in Texas annually. Two bridges exist on either side of the Paso Del Norte Border Crossing Bridge. While both train traffic volume and loaded container counts have decreased significantly overall since 2007, both measures have steadily increased over the last 5-6 years.

The RGV region contains roughly 535 miles of railroad facility, 8 miles of rail bridges, and 6 railyards. The UP line stretches throughout the RGVMAB, with the Sunset route connecting the region to Southern California, Houston, Dallas, and Chicago. The BNSF facility begins in the RGV and extends north into New Mexico, where a terminal exists to direct traffic further north or onto an east-west route. Most of the freight that passes through the RGV is directed outside of the region, primarily to the west coast (90%). It is important to take stock of these facilities as the region becomes more 'transit-ready' and begins exploring High Capacity Transit (HCT) options.

Figure 1-16: RGVMPO Railroad Assets



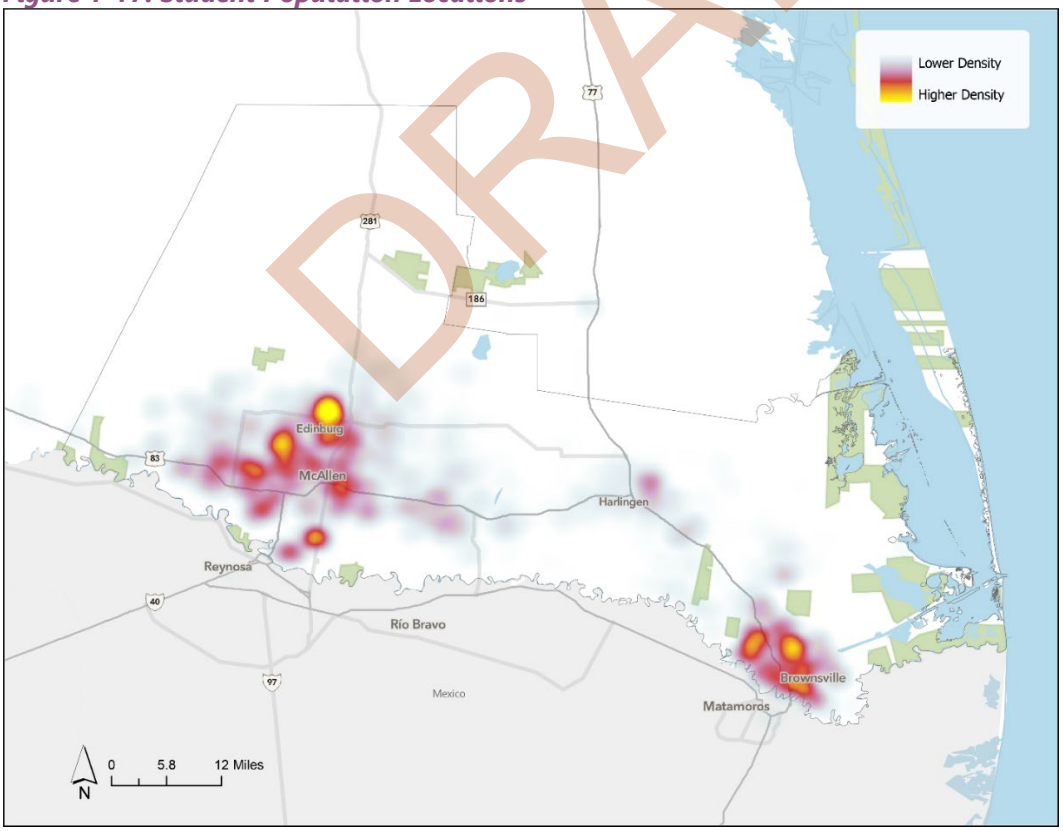
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University Markets

The RGV region is also home to several colleges and universities, including the University of Texas Rio Grande Valley. With nearly 33,000 students and six campuses, UTRGV is one of the larger branches of the UT system. The RGV student population is a considerable demographic that overlaps with many of those that are used to define transit dependence and need as described above. Students often do not own their own cars, and many are employed off-campus full- or part-time. Additionally, given that there are multiple campuses throughout the region, it is not uncommon for students to regularly commute between locations in different cities. Student housing conditions reflect this, and are unique in that residences are largely dispersed, the pattern of which is geographically consistent with the transit demand analysis in the previous section.

For these reasons, it is important to consider how the regional transit system serves students and ways it can be made more accessible to them. The student demographic was used in developing the Transit Market scores described previously. As the regional transit system evolves, particular attention may be paid to connection points between Valley Metro, UTRGV, and South Texas College transit services, other partnerships such as the one between B Metro and Texas Southmost College, as well as to areas with higher densities of the student population. These areas are shown in Figure 17, which will be used to inform route and service level recommendations to ensure that system improvements increase connectivity and minimize students' commute times.

Figure 1-17: Student Population Locations



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Desire Line Analysis

The most common transportation mode in the RGV is the automobile. Understanding where most of the population in the RGV is traveling will reveal the most heavily used travel patterns or 'desire lines' in the region. Identifying these desire lines will allow the project team to develop route recommendations that mimic this behavior and position the system to attract new passengers and cause a mode shift toward transit usage. The RGVMAB desire line analysis is shown in Figure 18.

At the regional level, the desire lines show the strongest attractions in the McAllen area. Figure 18 shows the regional relationship between the Harlingen and Brownsville subareas.

Figure 20 shows a more localized desire line example and shows the heavily utilized travel pattern between South Padre Island and Laguna Heights.

Figure 1-18: RGVMAB Desire Line Analysis

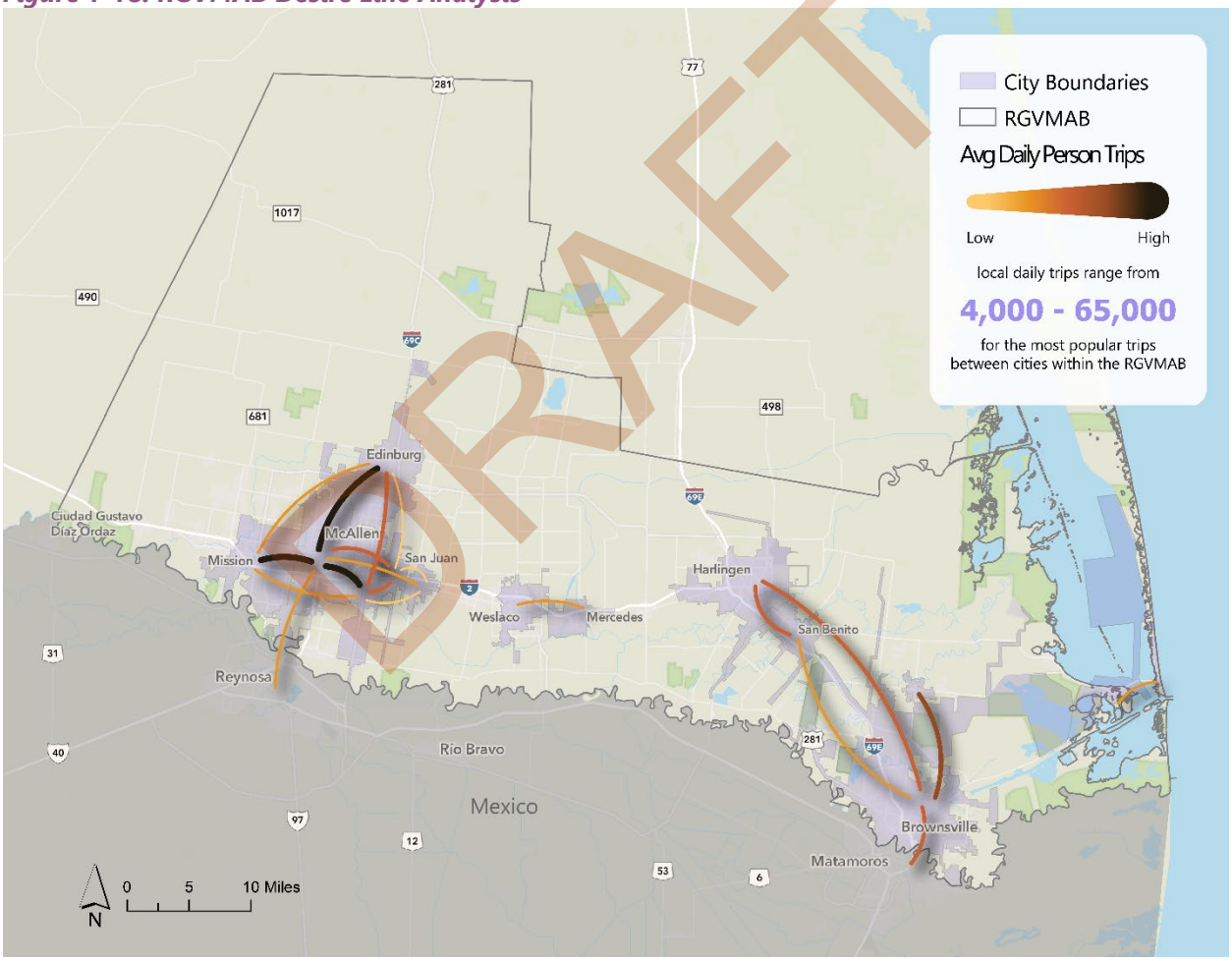
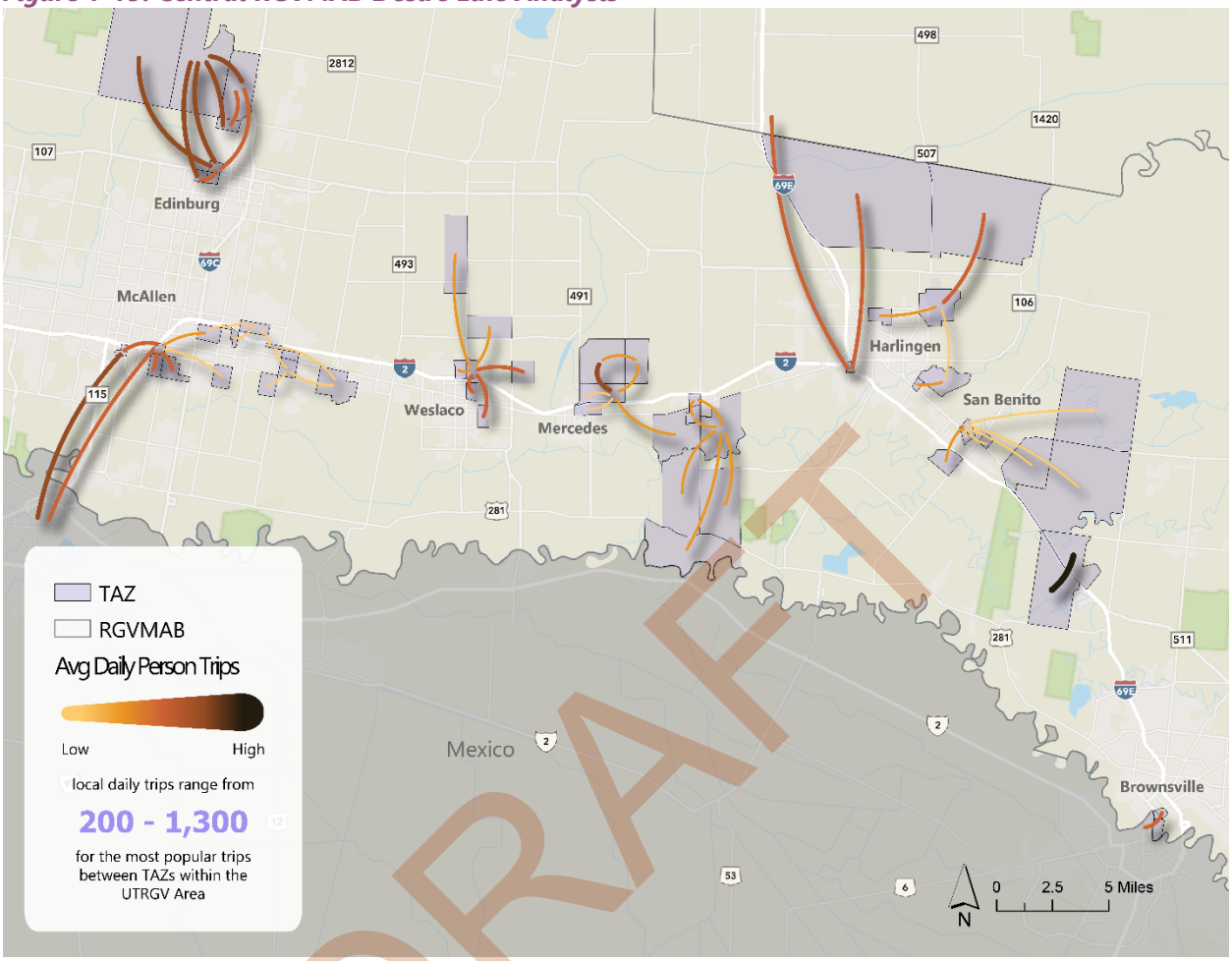
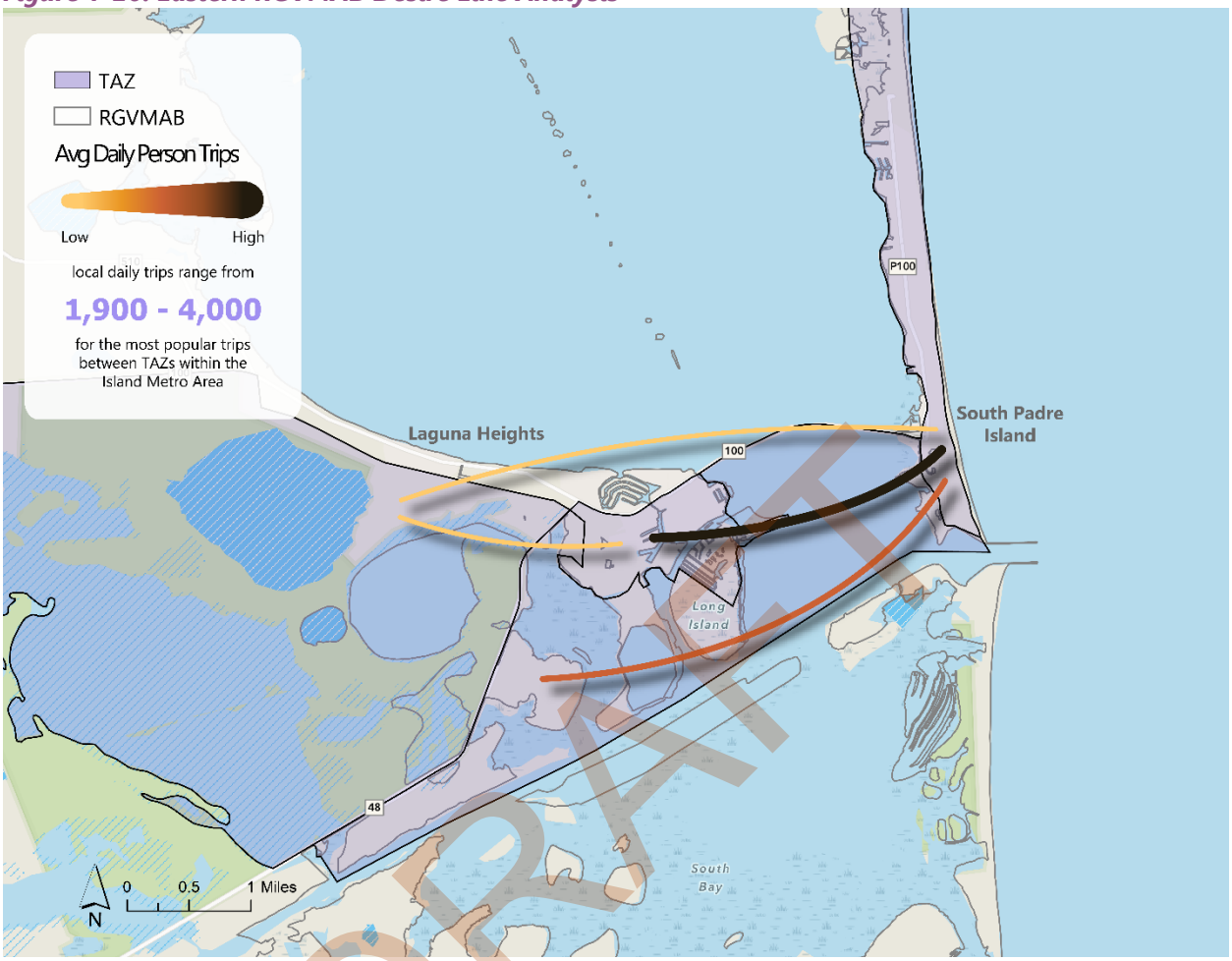


Figure 1-19: Central RGVMAB Desire Line Analysis



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Figure 1-20: Eastern RGVMAB Desire Line Analysis



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ORIGINS AND DESTINATIONS/RIDERSHIP ANALYSIS

Dikita conducted rider surveys of the six transit providers operating in the RGVMAB: Valley Metro, which also works with the UT Rio Grande Valley and South Texas College transit services; Metro McAllen; B Metro; and Island Metro. Transit agencies typically conduct these surveys to gather travel pattern information about their passengers. The RGVMPO requested two types of these surveys, a boarding and alighting counts (B&A) survey and an onboard origin and destination (OD) survey. The B&A and OD surveys were completed simultaneously by teams of one counter and one-to-three interviewers. Both surveys were completed between February 17 and March 12, 2020.

The boarding and alighting survey counted the number of passengers boarding and exiting the bus at every stop for each original trip where interviews transpired. The origin and destination onboard survey instrument was a series of questions administered via personal interviews using tablet computers. One-to-three surveyors boarded buses at the beginning of trips, randomly chose passengers to interview, and interviewed those that were willing to participate. Over the course of the project, a total of 3,007 surveys were collected. After processing, 2,146 (71%) of those surveys were deemed valid.

Ridership Analysis

To provide a closer approximation of the responses from surveys in terms of ridership, the origin and destination survey data was expanded to an estimate of average daily riders using the ridership provided for February 2019 – 2020 provided by each agency. This process contributes to an understanding of where riders are traveling in the region. Also, this allowed for the project team to estimate ridership by segment which were mapped in the provider and route profiles.

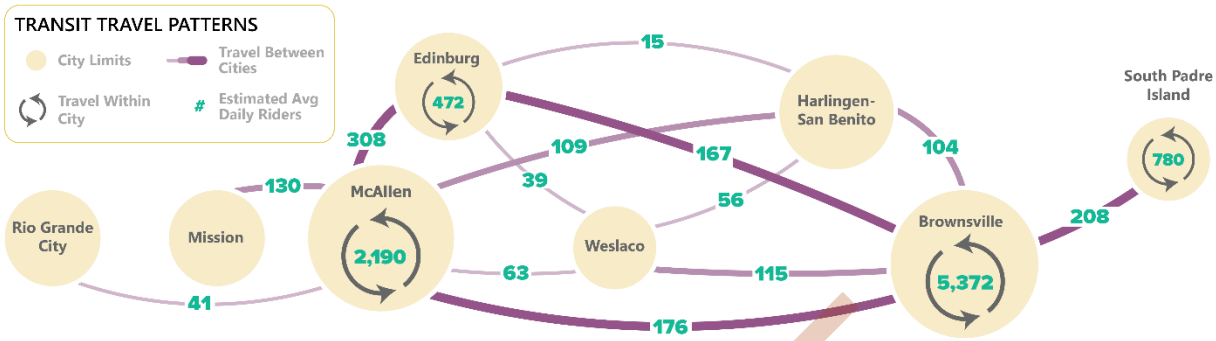
Regional Travel Patterns

The origin and destination data set, which was expanded into estimates of average daily riders can help to identify the current regional transit travel patterns (Figure 21). The location of the start of a rider's trip (origin) and end of their trip (destination) were summarized at the city level. Cities were combined with nearby cities to demonstrate travel to areas within the region. Travel desire lines between cities were included if there were at least 10 daily riders making a trip between the urban areas. Travel within cities were shown for the top 4 urban areas. The following urban areas are summarized and combined in Figure 21:

- **Rio Grande City (RGC)**: Roma, Rio Grande City, Sullivan City, and La Joya
- **Mission**: Palmhurst, Mission, Alton, and Granjeno
- **McAllen**: McAllen, Pharr, San Juan, Alamo, and Hidalgo
- **Edinburg**: Edinburg and La Villa
- **Weslaco**: Donna, Weslaco, Mercedes, La Feria, and Progreso
- **Harlingen-San Benito (HSB)**: Harlingen and San Benito
- **Brownsville**: Rancho Viejo, Brownsville, Los Fresnos
- **South Padre Island (SPI)**: Port Isabel and South Padre Island

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Figure 1-21: Regional Transit Travel Patterns



For a more detailed understanding, we can look at the number of riders traveling to (origin) vs from (destination) each city or area in the region. For instance, on average, 176 riders travel between McAllen and Brownsville daily. However, 140 of those riders are traveling to McAllen, while only 36 are traveling to Brownsville. Between Edinburg and McAllen, 221 riders travel from Edinburg, while 87 travel from McAllen. The daily travel by origin and destination cities are presented in Table 4.

Table 4: Regional Travel Patterns by Origin and Destination City

		Destination (Traveling to)							
	City	RGC	Mission	McAllen	Edinburg	Weslaco	HSB	Brownsville	SPI
Origin (Traveling From)	RGC	**77**	5	35	-	-	-	-	-
	Mission	-	**16**	50	4	-	-	-	-
	McAllen	6	81	**2,190**	87	25	75	36	-
	Edinburg	-	-	221	**472**	-	3	76	-
	Weslaco	-	-	38	39	**19**	12	115	-
	HSB	-	-	34	12	43	**109**	76	-
	Brownsville	6	6	140	91	-	28	**5,372**	132
	SPI	-	-	-	-	-	-	76	**780**

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Rider Characteristics

Another result of the origin and destination survey are responses that can provide more context into the types of transit riders being served in the RGVMAB. It is important to study the demographics and travel behaviors of transit riders. This can help to identify the needs of current riders and guide the recommendations. In particular, the project team was interested in:

- Trip Purpose: where riders are traveling to (home, work, shopping, etc.)
- Accessing Transit Stops: mode used in the first and last mile of a trip
- Alternative Mode: how would a rider make the trip if transit were unavailable
- Demographic Characteristics: Age, Gender, Driver's License, Language, Household Income, and Time Using Transit

TRIP PURPOSE

Asking transit riders about their purpose for making a trip, or what their destination is, helps to identify the ways people are currently using transit in the region. The most common purpose for trips taken on transit for the surveyed riders in the RGVMAB are trips home (24%) and to work (23%). Riders also commonly use transit for shopping (15%), to get to a K-12 school or college (14%), for personal business (8%), and for recreation (7%). Medical appointments, sightseeing, childcare, and other trip purposes were less common on transit (3% or less).

There are some noticeable differences in the destinations for trips when looking at the different providers in the region. The most common trips taken on the regional service provider, Valley Metro, are often trips to home (28%) and to work (28%). The other main types of trips taken on Valley Metro are recreation (11%), personal business (11%), to college (10%), or shopping (8%). Trips taken using Metro McAllen are commonly to home (32%), shopping (22%), or work (17%). B Metro trips are most often taken to work (24%), home (23%), shopping (16%), and to K-12 schools and colleges (15%). Island Metro trips are often to work (29%), shopping (22%), sightseeing (20%), and personal business (15%).

ACCESSING TRANSIT STOPS

How people access their transit stop in the first and last mile of a trip is an important measure in determining the connections between transit and other modes. In the RGVMAB, 80% of surveyed riders walked to their stop to get on the bus, and 89% walked from where they got off the bus to their destination. The other ways in which riders reached their stop in the first mile included dropped off or carpooled (15%), drove alone and parked (3%), used a rideshare service (1%), or used a bike or scooter (1%). In the last mile, or where they got off the bus, the use of other modes were similar – dropped off or carpooled (6%), drove alone and parked (3%), used a rideshare service (1%), or used a bike or scooter (1%). For the regional transit provider, Valley Metro, most transit users walk to the location where they get on the bus (71%) and to their destination when they get off the bus (77%). The other common methods used to access a stop for boarding included dropped off or carpool (17%) or drove alone (7%). When alighting the bus, about 8% of riders carpooled, 7% drove alone, 3% used rideshare, 3% used a bike or scooter, and 2% used a mobility aid or wheelchair to reach their destination.

Within each agency in the region, there were some differences in the modes commonly used to access transit stops in the first and last mile of a trip, but most riders walked to and from their transit stops. Metro McAllen had the largest percentage of riders that carpooled or were dropped off at their stop (28%). On B

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Metro, 91% of riders walked to their stop and 97% walked to their destination when they got off the bus. For Island Metro, 97% of riders walked to or from their transit stop.

ALTERNATIVE MODES

Passengers were also asked what alternative mode they would have used to make their trip in the instance that transit was not available. 32% of respondents reported that that they would have been driven and dropped off at their destination by someone else. Other common alternatives included walking with 18%, carpooling with 17%, using rideshare with 11%, driving alone with 8%, and using a bike or scooter with 5%. Additionally, 9% of riders would not have made the trip at all if transit were unavailable. B Metro and Metro McAllen had the highest portion of riders who would have been dropped off by someone else, with 37% and 38% respectively. Island Metro had the highest number of respondents that would have driven alone with 18%, compared to 4% of Valley Metro riders, 7% of B Metro riders, and 5% of Metro McAllen riders. Riders surveyed on Valley Metro were most likely to have used a rideshare service as an alternative, with 17% responding that they would choose this option. Notably, only 5% of respondents across all providers reported that they would have used a bike or scooter in the absence of transit.

Responses about alternative mode choices suggest that many current transit riders do not have reliable access to a personal vehicle and need access to transit to be able to get around. When these findings are considered in tandem with responses about trip purpose, it can be concluded that users in RGV require transit service to accomplish many tasks in daily life.

AGE

The data collected showed that the most prominent age group for transit riders in the RGV was 41-64 years old. 45% of Valley Metro riders, 25% of B Metro riders, 42% Metro McAllen riders, and 48% Island Metro riders are in this group. The second highest age group was found to be 25-40 years old. 20% of Valley Metro riders, 21% of B Metro riders, 22% of Metro McAllen riders, and 17% of Island Metro riders make up this group. These two age groups represent the core riders for transit service in the RGVMAB.

It is also important to consider the riders that may have limited access to a vehicle due to age or ability. Across all transit service within the RGVMAB, 28% of riders were either under 18 years old or above 65 years old. Survey participants in these age groups comprised 16% of the surveys for Valley Metro, 35% for B Metro, 24% for Metro McAllen, and 31% for Island Metro. This demographic is often heavily reliant on transit service and is shown in the results of this survey to represent almost a third of transit ridership in the region.

GENDER

The rider survey in the RGVMAB found that 54% of the survey participants were female. By provider, Valley Metro riders were 42% female, B Metro riders were 54% female, Metro McAllen riders were 57% female, and Island Metro riders were 65% female.

DRIVER'S LICENSE

Respondents were also asked if they have a driver's license. Across the RGVMAB, 71% of participants do not have a driver's license. Though it has become more common for younger people to not obtain a driver's license as soon as they turn 16 and opt for other transportation options, this result likely expands beyond those individuals who could drive but choose not to and may reflect lack of access to personal vehicles among transit riders. The number of survey participants who responded that they do not have a driver's license was 69% for Valley Metro, 80% for B Metro, 73% for Metro McAllen, and 42% for Island Metro.

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HOUSEHOLD LANGUAGE

Among all survey participants, a majority primarily speak Spanish at home. This trend is reflective of the large Hispanic/Latino community living in the valley. Respondents from B Metro reported the largest number of Spanish speakers, with 90% answering that it is their primary household language, followed by Metro McAllen with 75% and Valley Metro with 51%. Only 40% of Island Metro respondents responded that Spanish is their primary language, a disparity that can likely be explained by the high concentration of tourists that travel from other parts of Texas, many of which have a smaller Hispanic/Latino demographic than the RGV, and utilize the transit system in South Padre Island and Port Isabel. When respondents were asked if they were visitors to the RGV region, 50% of Island Metro riders answered yes, compared to only 20% of the respondents on all systems.

INCOME

Survey participants were asked to choose the range in which their annual household income falls. Among all participants, 72% earn less than $35,000 per year, while 10% earn more than $35,000. Though 18% of respondents declined to answer this question, the trend is similar across respondents from all four transit providers. 80% of B Metro riders, 75% of Valley Metro riders, 66% of Metro McAllen riders, and 43% of Island Metro riders reported earning less than $35,000 per year.

The median household incomes for Cameron and Hidalgo Counties are approximately $37,100 and $38,300, respectively,[1] meaning the data collected indicates that many transit riders in the RGV earn less than the median household income. This finding is significant, as it is more common for lower income families not to own a personal vehicle and instead rely primarily on public transit for daily travel. Individuals in this demographic represent the transit need of the market, which, as described in previous sections, are an important part of the holistic process of planning for a system that suits the needs of the community.

TIME USING TRANSIT

Survey results depicted that 49% of surveyed riders had been using the transit service for more than 2 years. Of that 49%, there were 19% of participants who stated that they had been using the service for more than 5 years. By provider, the portion of riders surveyed who used transit for more than 2 years was 58% from Valley Metro, 48% from B Metro, 45% from Metro McAllen, and 43% from Island Metro.

Though having dedicated riders who use the service regularly is an important quality of a transit system, it is just as important to attract new riders and provide service that can easily be used by occasional riders when they need or want to use it. Survey results showed that B Metro and Metro McAllen had the largest number of newer riders. 32% of riders surveyed on B Metro and 35% of riders surveyed on Metro McAllen had used the service for 6 months or less, compared to 16% of Valley Metro riders and 18% of Island Metro riders. These results may be due to recent investments and improvements in transit services within the City of Brownsville and the City of McAllen. It is also notable that 35% of Island Metro participants described themselves as not using transit regularly, compared to only 1% on the other systems. This trend is likely related to the 50% of Island Metro respondents who reported being visitors to the region and who are likely using Island Metro while away from their vehicle.

[1] census.gov/quickfacts/cameroncountytexas; census.gov/quickfacts/hidalgocountytexas

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2 REGIONAL SERVICE STANDARDS

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A goal of the RGVMPO Transit Development Plan is to establish guidelines that help the six independent transit providers in the region collaborate effectively and promote a connected regional transit system. The RGV Regional Service Standards provide baseline recommendations and evaluation metrics that focus on aligning and improving existing and future service to better serve the community in the RGVMAB.

INTRODUCTION

As the RGVMAB grows, it is crucial that transit service is continually evaluated to ensure it is meeting the needs of the community. A successful transit system will help mitigate traffic congestion and connect people to destinations and resources throughout the region. While each of the transit providers in the RGVMAB has independent leadership, policies, and procedures, when a passenger is traveling from point A to point B, they are often less concerned with who is providing the trip then they are with making it to their destination in a safe and timely manner. The interconnected socioeconomic and cultural landscape of the RGVMAB and cities therein make it important to approach system evaluation and planning from the perspective of the region as a whole.

Service standards are areas of focus for transit providers to consider when evaluating service performance and setting goals for future improvements. While not exhaustive, these standards provide guiding recommendations that outline goals for the regional transit service. A core set of standards will allow providers to ensure consistent, high-quality service throughout the regional transportation network.

Progress towards meeting and exceeding service standards may be assessed in different ways. Key Performance Indicators (KPIs) are metrics that may be applicable in measuring a provider's adherence to a service standard. These targets are quantifiable and may be set based on service type. Recommendations are actionable steps that, when implemented, help the transit provider meet one or multiple standards.

Purpose

The regional service standards below have been developed for the RGVMAB as part of the 2030 Transit Development Plan. Currently, there are six transit providers operating in the region, each with distinct service types, administrative procedures, and planning goals. The list of standards and accompanying evaluation metrics are intended to create a unified approach and shared best practices that will bring consistency to the regional transit system. They are rooted in nationwide best practices for transit service planning and adapted to meet the needs of the local context in the RGVMAB, offering a unique set of service provision types, technology standards, and system designs that can be implemented throughout the region. Existing transit service by all providers in the region should be measured on an annual basis to track progress towards a system that complies with these standards.

The following sections detail the Rio Grande Valley regional service standards and provide specific measures and recommendations for each. It should be noted that these represent minimum standards that providers should aim to achieve, and that it is possible that parts of existing service meet or exceed these targets. The service standards offer a guide to make high-quality transit present throughout the RGVMAB. It is also important to understand that all targets represent goals for peak hour service. Standards and their metrics were created to be realistic for a regional transit system and represent targets that all providers in the region can work towards achieving in tandem.

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Title VI Disclaimer

It should be recognized that any system alteration that results in a change in service of 25% or greater will be considered a major service change and require a Title VI analysis. For example, if there are 20 existing trips and 5 trips are altered, it would constitute a 25% change in service and require further analysis in accordance with Title VI of the Civil Right Act of 1964.

Complementary Paratransit

In accordance with Part 37 of the Americans with Disabilities Act, Transportation Services for Individuals with Disabilities, all public entities who operate a fixed route system will provide paratransit service that is both comparable and complementary to the fixed route service to all eligible patrons. Complementary paratransit must provide service to any origin or destination within 3/4 mile on all sides of any route corridor in the system.

Route Classifications

Service standards in the RGVMAB are not intended to be 'one size fits all.' For service standards to be implemented and evaluated effectively, they should account for the variety of transit services currently being operated across the region and proposed in the future. Implementation of service enhancements may be tailored to the level appropriate for different service types; for example, regional routes may require stops to be spaced farther apart than local routes due to the nature of the service. Many of the recommendations provided in this document are accompanied by measures that can be applied differently to the different types of route classifications shown below. Existing routes in the RGVMAB have been classified based on their contexts and can be found in Appendix B.

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Figure 2-1: Route Classifications

LOCAL - URBAN

Fixed route service that operates in more urban areas where demand and destinations are concentrated.



LOCAL - RURAL

Fixed route service that operates in mostly rural areas.



REGIONAL - EXPRESS

Service that travels city to city with limited stops, offering coverage of multiple urban areas.



REGIONAL - URBAN

Service with stops at key destinations in multiple urban areas throughout the region.



CAMPUS

Service that is limited to a particular university campus. Service is open to students and the general public.



MOBILITY ZONES

Designated areas with demand response service available, set in the place of unproductive fixed routes & deviations.

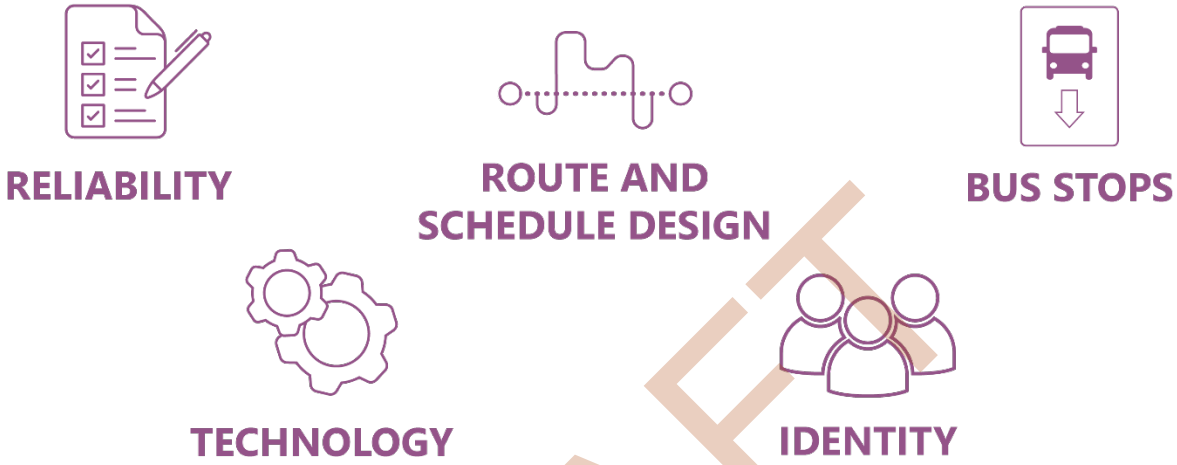


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Regional Service Standards

Service standards for the RGVMAB regional transit system have been identified as shown in Figure 2.

Figure 2: RGV Regional Service Standards



These standards have been determined as areas of focus for the regional transit system and are presented with Key Performance Indicators and Recommendations that will guide the changes needed to meet them. This information is intended to document a shared vision for transit in the RGVMAB and to inform all relevant transit agencies of the recommended goals and how they may be measured. The standards are presented in a way that is meant to be intuitive and easy to refer to as the regional system evolves over time.

The standards are one component of the Regional TDP and need to be implemented in coordination with the recommendations, implementation plan and transit investment strategy. Expanded operational and capital funding will be needed to meet many of the thresholds of the Regional Service Standards.

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RELIABILITY

RGV REGIONAL SERVICE STANDARDS

KPIs

On-Time Performance

Bus Stops	75% On Time
Time Points	85% On Time
Transit Centers	**90% On Time**

Trips are 'on time' when they depart less than 5 minutes late & do not depart early. Flexible Route OTP may be measured at timepoints determined by provider.

Frequency

Route frequencies should fall within these ranges during peak demand periods based on service type and demand.

Local – Urban	Every 15-30 minutes
Local – Rural	Every 30-60 minutes
Regional – Express	Every 15-30 minutes
Regional – Urban	Every 15-60 minutes
Campus	Every 15-30 minutes

Clock-Face Scheduling

Service should be scheduled to run at regular intervals that fall at memorable times.
A bus should always depart from the terminus at :00, :15, :30, or :45 after the hour. This ensures service is consistent and easy for riders to remember while making it easier to transfer between routes and providers. It also provides opportunities for interlining.

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Recommendations

Span

The span of service should adhere to one of the levels below based on demand.

Standard	*7:00am – 8:00pm*
Shortened	*7:00am – 6:00pm*
Extended	*6:00am – 10:00pm*
Campus	*As appropriate based on demand*

Days of Service

Minimum Recommended Days of Service: Monday-Friday
Weekend service should be considered and implemented where appropriate.

Time Points

All routes should be assigned time points.
Time points are identified at major stops along a route that the bus uses to maintain schedule. These locations are designated along a route to control the spacing of buses (bus headway), creating the route schedule for passengers. Time points should be placed at strategic points such as major intersections, major trip generators, and at destinations where the highest boarding activity is recorded. Timepoints should be an average of 10 minutes apart.

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ROUTE AND SCHEDULE DESIGN

RGV REGIONAL SERVICE STANDARDS

Recommendations

Connectivity

Where appropriate, fixed routes should make connections to other routes within the same system or to routes in other systems.

Connection stops should be clearly marked, especially where multiple providers' services connect.

Route Patterns

Minimize the number of patterns or variations a route has.

Route patterns or variations describe when a fixed route stops in alternate places than its typical design on certain days or times. This can become confusing for riders and should be avoided. When considering adding an alternate pattern to a route, there should be a clear purpose for doing so and clear communication to riders.

Flexible Service

Minimize routes with flexible service. Implement only in areas with lower demand.

Service Duplication

Minimize service duplication between providers.

Coordinate and align service to contribute to the overall network connectivity. Avoid running service on the same alignment and schedules.

Transfer Time

Transfers should occur within a 15-minute window.

Propensity & Need

Consider data on the transit market to inform route expansion and alterations.

When evaluating existing and potential service, ensure that there are high enough densities of population (passengers) and employment (destinations) to justify service. Identify Census block groups that have large portions of population and employment to make sure these areas are served by existing routes and stops.

Additionally, consider where service is provided in areas with substantial populations of Targeted Transit Riders, or citizens who generally have higher need to use transit due to various limitations to personal mobility such as age, income level, disability, race, ethnicity, and access to a personal vehicle.

Productivity

Measure and evaluate service based on route productivity.

Productivity (boardings per mile per hour) provides insight into ridership trends and relative route performance. Set benchmarks and evaluate over time.

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Recommendations

Travel Time

Evaluate service using a travel time measurement tool.
Travel time is a necessary component of service to track. Transit providers should strive to improve how far passengers can travel within a given amount of time by adjusting the frequency of service and placement of bus stops.
Travel time benchmarks in the RGVMAB will vary by transit provider.

Meet Jane

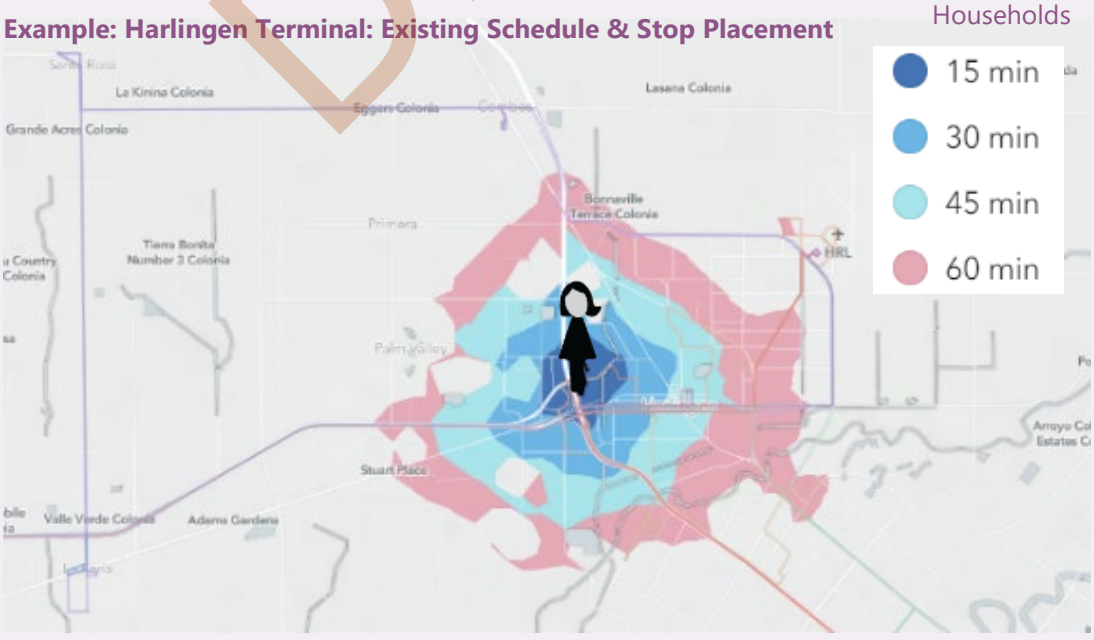
Measuring Travel Time

Increasing efficiency and convenience of travel by transit is important to improving quality of life for existing passengers as well as attracting new ones. Improved travel times may be the result of increasing route frequencies, adjusting the distance between bus stops, and expanding the operating hours of a service, as well as overall decreases in congestion in the region. Transit providers in the RGVMAB should monitor these qualities and make changes with the goal of improving travel times and coverage for passengers.

When accurate schedules, route alignments, and stop locations are recorded in Remix, placing 'Jane' at a transit station will show how far passengers can travel in different increments of time.
Coverage can also be measured using demographic metrics. Providers should utilize these filters to evaluate how service is interacting with the transit market:

- Population
- Jobs (CTPP)
- Minority Population
- Living with A Disability
- Age 65+ and 17-
- Car-Free Households

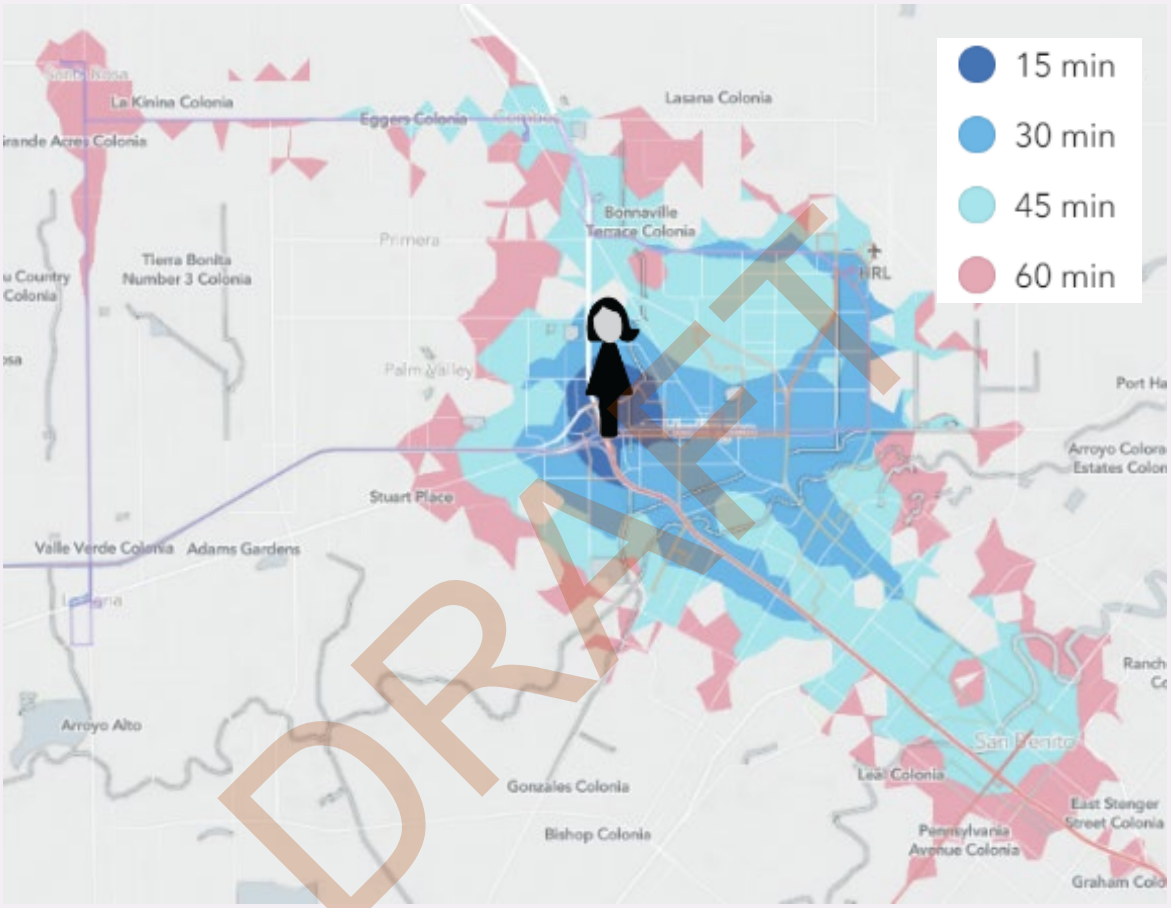
Example: Harlingen Terminal: Existing Schedule & Stop Placement



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Route and Schedule Design Standards – Continued

Example: Harlingen Terminal: Potential Schedule & Stop Placement



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Time	Population Coverage *Current Schedule & Stops*	Population Coverage *Potential Schedule & Stops*
15 min	2,263	3,389
30 min	8,222	27,765
45 min	20,751	65,809
60 min	47,747	81,006

BUS STOPS

RGV REGIONAL SERVICE STANDARDS

KPIs

Stop Spacing

Stop spacing is important to maintaining efficiency and convenience of service. Well-spaced stops help buses adhere to schedules and reduce dwell time.

Route Classification	**Average Spacing**
Local – Urban	¼ Mile
Local – Rural	½ Mile
Regional – Express	Key destinations
Regional – Urban	1 Mile

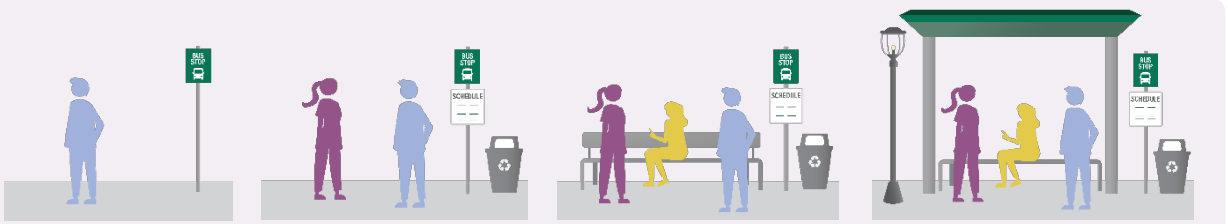
Campus route stops may be spaced as appropriate depending on environment.

Stop Design

Amenities should be considered based on stop-level ridership. All stops should be safe, visible, and accessible. Using stop-level ridership can ensure that stop amenities are distributed equitably depending on available funding. As each provider in the region has different total ridership, stop-level ridership should be ranked relative to other stops in that provider's system. For example, if a system had 100 stops and used the percentiles below to distribute amenities, it would mean that the top 10 most-frequented stops based on daily ridership would be given Level 4 amenities.

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Regional System Bus Stop Standards – Continued



Level 1	Level 2	Level 3	Level 4
Below 50th Percentile	50th-74th Percentile	75th-89th Percentile	90th Percentile

Recommendations

Stop Environment

Bus stop facilities should be integrated within existing pedestrian and bike networks.

Space to wait for the bus should be well connected to the sidewalk network, making it easy for riders to continue their trip beyond the bus stop. Stops should be clearly discernable, with bilingual signage that reinforces the identity of the transit service.

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TECHNOLOGY

RGV REGIONAL SERVICE STANDARDS

Recommendations

Vehicle Technology

Automatic Vehicle Locator: Tracks geographic location and speed of vehicles to measure on-time performance (OTP).
Automatic Passenger Count: Collects boarding and alighting numbers to gather accurate stop-level ridership data.
Installing these capabilities on all vehicles helps improve service performance and allows for more in-depth analysis of route ridership and bus stop use.

Planning Software

Agencies should use software that allows for route and schedule planning.
The software's capabilities should include storage of route alignments and stop locations, scheduling functions that allow for the input of frequencies, recovery times, and span of operation by route, and a mapping function that integrates Census data to overlay population, employment, and socioeconomic data.
As much as possible, providers in the region should use the same platform for consistency and ease of collaboration. Most systems currently use **Remix**.

Real-Time Location

Agencies should utilize a platform that allows passengers to view real-time vehicle locations.
This capability enhances service for riders and makes vehicle dispatch and OTP tracking easier for transit providers.
As much as possible, providers in the region should use the same platform for consistency and ease of collaboration. Most providers currently use **Ride Systems**.

Needs Assessment

Review existing transit software annually to determine whether it is meeting the agency's needs.
Recommended software capabilities:

- Fixed route and bus stop mapping
- Scheduling function
- Cost of service
- Real-time location tracking
- Mapping that integrates Census data for analysis
- Ridership by stop, time of day, and trip

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IDENTITY

RGV REGIONAL SERVICE STANDARDS

Recommendations

Regional Transit System

Communicate service information using a design philosophy that characterizes transit service in the RGV as a regional system and that emphasizes clarity, ease of use, and consistency. Apply this philosophy to all service in the region to promote continuity in the regional system. Develop and maintain a visual identity for the regional transit system that complements those of individual providers. Create a branding scheme including a consistent color palette and font, logo, design aesthetic, and document templates. While individual transit providers may maintain their autonomous branding on agency-specific websites and facilities, the regional brand identity should be applied wherever possible in public-facing materials. This will provide the region-wide system with a consistent identity that the public easily associates with the RGV transit system and its services.

To ensure that the regional transit system is legible and easy to use, consistent design motifs should be used in all wayfinding and informational materials. Use a uniform color for each provider on materials including bus stop signage, route/service area maps, service schedules, and lists of transfers, throughout the region.

Standardized Provider & Route Identity

Transit Provider	Color Identity	Route Naming Convention
Valley Metro	**RED**	Routes 100-199
B Metro	**BLUE**	Routes 200-299
Island Metro	**YELLOW**	Routes 300-399
Metro McAllen	**GREEN**	Routes 400-499

Website

Update the Valley Metro website.

Valley Metro information should be hosted on a clearly branded website independent from the LRGVDC. The website should include an interactive, system-wide map where riders can zoom in and view routes and stop information. PDF schedule documents may be updated and migrated to this site as well.

A map showing all regional service and links to the webpages of the other RGV transit providers is also recommended.

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Sample System Map – Valley Metro System



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Sample Route Schedule

ROUTE 10



06:30 - 17:30 · Every 132 min · 12 trips (6 Outbound, 6 Inbound)

	0	+5.0	+15.0	+10.0	+25.0
A	06:30	06:35	06:50	07:00	07:25
A	08:30	08:35	08:50	09:00	09:25
A	10:30	10:35	10:50	11:00	11:25
A	13:30	13:35	13:50	14:00	14:25
A	15:30	15:35	15:50	16:00	16:25
A	17:30	17:35	17:50	18:00	18:25

	0	+25.0	+10.0	+15.0	+5.0
A	07:30	07:55	08:05	08:20	08:25
A	09:30	09:55	10:05	10:20	10:25
A	11:30	11:55	12:05	12:20	12:25
A	14:30	14:55	15:05	15:20	15:25
A	16:30	16:55	17:05	17:20	17:25
A	18:30	18:55	19:05	19:20	19:25

OUTCOMES

Implementing strategies to meet and exceed the regional service standards will help improve service as well as create and reinforce the presence of transit in the RGVMAB. Maintaining cohesivity within the regional system will lead to a more convenient, positive user experience, as well as a more streamlined, collaborative relationship among the region's transit providers.

Intended Outcomes of Regional Service Standards

Reliability

- Transit in the RGV is a more dependable mode of transportation and people use it regularly.
- Ridership increases across all providers.
- More riders feel comfortable using transit as their primary mode of transportation.

Route and Schedule Design

- Service is more efficient and tailored to the needs of riders and markets being served.
- Transit trips are faster, decreasing the amount of time passengers spend commuting.
- Transit takes people where they want to go, when they want to go there.

Bus Stops

- Transit users are easily able to locate bus stops and information about their trip.
- Riders feel safe and comfortable at transit stops and throughout trips.
- Transit providers deliver faster and more reliable service associated with fixed route service as opposed to the variability of deviated fixed route or on-demand service.

Technology

- Transit providers can more easily assess route performance, rider satisfaction, and service issues.
- Providers have a centralized way to store service details and view data about the community.
- Collaborating with other providers is more convenient.
- Transit users can easily access information on their bus, making trip planning more intuitive.
- Transit providers understand the dynamic travel patterns of the region and can adapt their service to meet the everchanging needs of the transit markets they serve.

Identity

- Transit riders have more confidence when transferring between different providers' service.
- New riders are more willing to try transit.
- User perception of transit is improved, and the system is seen as more cohesive and recognizable.
- Travel between cities in the region is more comfortable.

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3 RECOMMENDATIONS AND ALTERNATIVES

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The recommendations and alternatives for Valley Metro service are comprised of route alignment and service level recommendations intended to improve transit and to provide coordination opportunities among all transit providers in the RGVMAB. This chapter explores two alternatives for the future of regional transit and provides measures for how the alternatives perform. The two alternatives were developed based on public input, regional service standards, and the evaluation of existing transit markets.

INTRODUCTION

A transit route or network is defined by identifying where a bus goes, how it gets there, and how long it takes to reach its destination. The definition of any of these three components determines how effective transit service delivery is and how well it serves the underlying transit markets. Building off the Existing Conditions Analysis and the Regional Service Standards, the TDP lays out recommendations and two redesign alternatives that define route alignments and service level changes. These changes address the key findings of the transit market analysis as well as the public input gathered from stakeholder interviews and the development of a community vision for the future of transportation. Implementing the recommendations and alternatives of this TDP in coordination with the Regional Service Standards will result in a new regional transit framework that improves service for existing passengers and positions the regional transit network to attract new passengers moving forward.

Methodology

Designing route alignments and service delivery strategies involves the synthesis of multiple data sets and resources. The data and resources listed below informed the customized recommendations and alternatives of the RGV TDP:

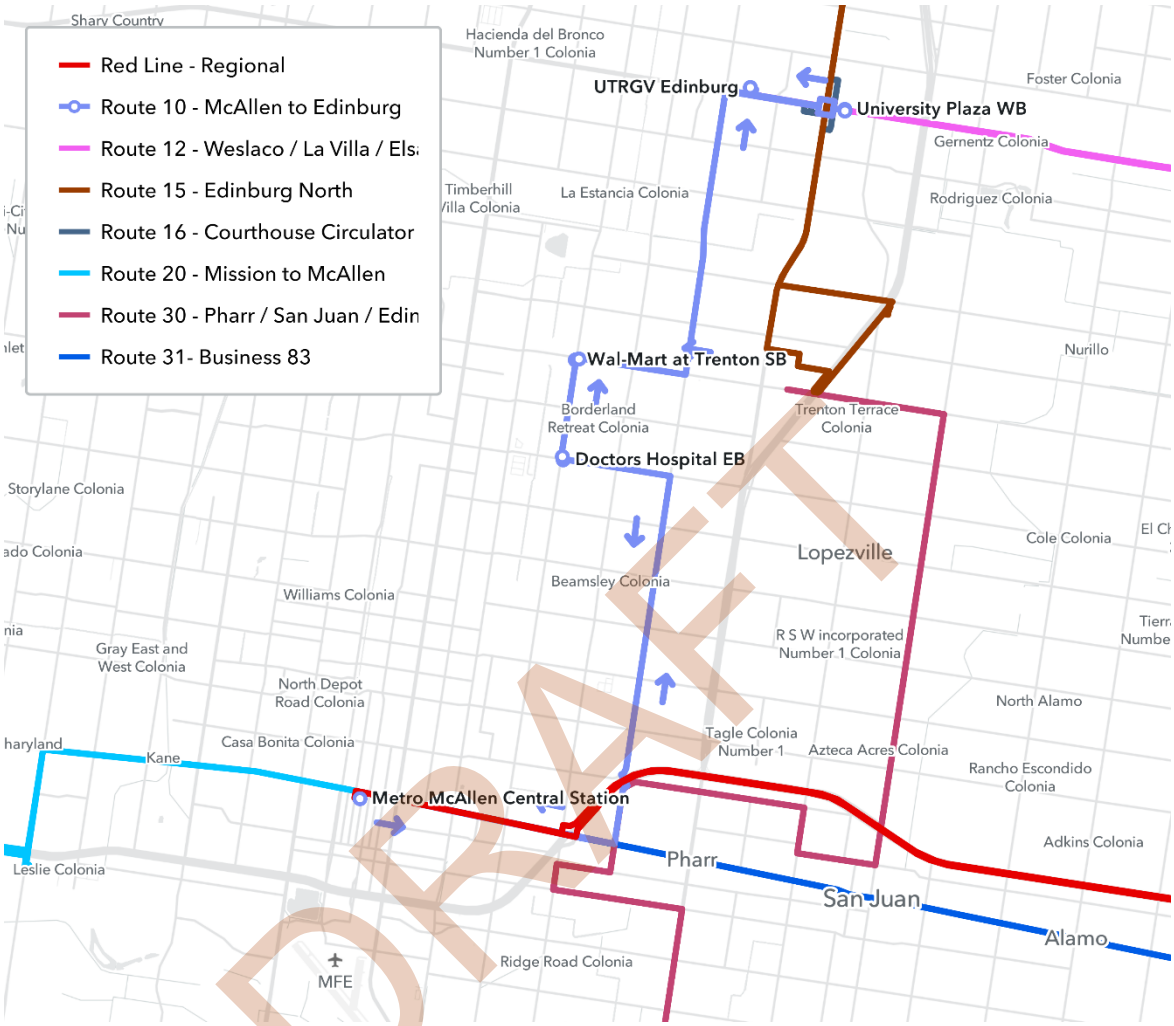
- Public and stakeholder input
- Transit provider input
- Previous transit plans
- Transit market analysis
- Regional service standards
- Origins and destinations study

An example of this methodology is the redesign concept for the McAllen and Edinburg area. The Origins and Destinations survey revealed the McAllen and Edinburg trip interchange as one of the major patterns of travel which accounted for 20% of total regional transit trips. The automobile travel patterns revealed a similar common path of travel occurring between the two cities. The existing Valley Metro Route 10 provides a service between McAllen Central Station and UTRGV in Edinburg with trips occurring every 2 hours, as shown in Figure 1. The significant demand for this trip pattern warranted the increase in service frequency, conversion from a flexible local service to a fixed route, and potentially a more direct route design.

For both alternatives, the route was renamed to match the recommendation of the regional service standards that Valley Metro routes range from 100-199. For alternative A, the deviation which serves the Doctor's hospital at Renaissance, Cornerstone Regional, and the Walmart at Trenton, was eliminated to create a more direct and frequent service between the two cities. These key destinations are serviced by planned Metro McAllen routes, so the service to these destinations in this alternative would not be eliminated. In alternative B, the deviation is maintained to match the current route alignment as the route has 103 daily riders and would likely see an increase with the addition of more frequency and a transition to a fixed route service.

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Figure 3-1: Existing Route 10 – McAllen to Edinburg with Timepoints



Measuring Performance of Alternatives

To measure the differences between existing Valley Metro services and recommendations of the two potential alternatives, existing and future routes were drawn using Remix™, a route sketch planning tool. Remix™ was also used to estimate stop locations. Performance measures can be used from Remix to provide a comparison of the service options being considered, presented in Table 1.

Table 3-1: Performance Measures for Alternatives

Measure	Description	Assumptions
Number of Fixed Routes	Number of Valley Metro bus routes in the system	Includes deviated fixed route for existing and fixed route for future alternatives
Number of Frequent Bus Routes (30 min or better)	Number of Valley Metro bus routes in the system with 30 min or better frequency	Includes deviated fixed route for existing and fixed route for future alternatives
Number of Peak Buses	The estimated number of buses required to run the route or system based on estimated travel time and frequency of services	If implemented, more detailed travel times will be required to accurately estimate requirements for vehicle purchases
Full-Service Coverage	The number of people and jobs within a quarter mile of Valley Metro service.	Stops were estimated about every quarter mile to provide an equivalent comparison of existing and future routes; however, the existing services are deviated fixed routes, so the service might be smaller/larger in reality
Hourly Service Coverage (60 min or better)	The number of people and jobs within a quarter mile of Valley Metro routes with service at least every 60 minutes	
Frequent Service Coverage (30 min or better)	The number of people and jobs within a quarter mile of Valley Metro routes with service at least every 30 minutes	
Annual Service Hours	Estimated annual service hours based on schedules and frequencies of routes	Actual annual service hours might fluctuate; for example, COVID-19 reduced service which impacted 2020 total hours of service
Annual Operating Cost Estimate	Estimated annual service cost using existing average cost per hour ($69 for Fixed Route - Urban and $73 for Fixed Route – Rural)	Operating cost estimates provide an idea of the compared costs of scenarios and will need further refinement in the implementation process
Travel Time Improvements near Major Hubs for Transit	Measured using people and jobs within the walkshed of transit hubs broken out by travel time ranges	This can be affected by location of stops, frequency of routes, and the design of routes

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Stakeholder and Public Engagement

Understanding the needs of current and potential transit riders is crucial to the development of service alternatives that meet the needs of the community. The process for soliciting input from the public for the TDP faced a particular challenge due to safety concerns for in-person gatherings due to the COVID-19 pandemic. Due to these unforeseen circumstances, the visioning exercise and stakeholder interviews were conducted online. Community members were notified of the opportunities to get involved through social media posts and by email. By listening to input from the public, decision makers can better understand the community's transportation needs and goals.

The following sections in this chapter summarize the public engagement and stakeholder feedback solicited to aid in the preparation of these service alternatives for a regional transit system.

Public Engagement

The RGVMPO conducted multiple public outreach efforts to better understand the community's transportation challenges, needs, and opportunities. The participants' responses provided insight into their vision for the future of the transportation system and their goals for transit in the RGVMAB by 2030. Public engagement included an online visioning process.

ONLINE VISIONING PROCESS

The digital visioning process was custom-built for the development of the MTP and included questions specific to the TDP. The tool consisted of modules that both educated the public about the plan development process and requested feedback about community values and existing conditions in the region. The online visioning survey was opened on April 1, 2020 and closed on July 20, 2020. During this time, the tool received a total of 83 survey responses and 200 comments on the interactive map. Accessibility for the online visioning tool was prioritized throughout the design process, starting with responsive web design. The structure of the tool included three main parts: a brief description of the visioning process, a survey that gathered basic information about the participants and their transportation usage, and an interactive map of the region where participants could place comments in exact locations regarding specific needs or issues related to transportation at those locations.

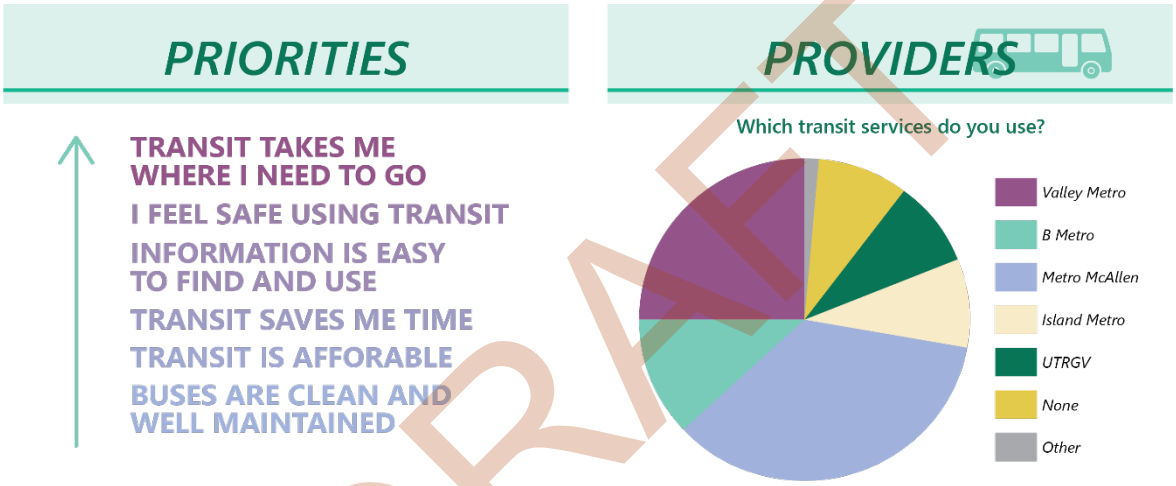
The results of the online visioning process showed repeated concerns that transit routes were fragmented, and many participants expressed a desire for a regional transit connection that travels the length of the RGVMAB. Participants in the visioning process voiced interest in significant investment in feasible and relevant projects that support the long-term resilient growth of the region. Other than improved regional connections via bus routes, regional light rail transit was another common aspiration mentioned. Respondents also noted the transit-dependent population has limited access to many places in the RGVMAB: "It's focused on people with personal vehicles. We are the poorest region in the state yet make it very difficult for people to get around with limited transit, walking, and cycling options." The other survey results are summarized in Figure 2 and Figure 3 below.

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Figure 3-2: Transit Feedback from Visioning Process



Figure 3-3: Transit Feedback of Priorities and Most Used Services from Visioning Process



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Stakeholder Engagement

The RGVMPO conducted interviews with stakeholders from a diverse and wide-ranging set of communities across the RGVMAB. The stakeholder groups included environmental groups, transit providers, municipal and county governments, educational institutions, freight industry leaders, port authorities, law enforcement and emergency services, bicycle and pedestrian advocacy organizations, and community interest groups.

The purpose of the interviews was to listen and record regional transportation issues,opportunities and challenges facing stakeholders. Similar to the Online Visioning Process, stakeholder interviews were conducted online via Microsoft Teams due to concerns amid the COVID-19 pandemic. Staff recorded notes during the meetings and summarized a comprehensive list of topics discussed. The feedback from stakeholders regarding transit have been summarized below.

STAKEHOLDER INTEVIEWS

Many stakeholders indicated that there is a large need for improved transit services in the RGVMAB, and they believe that the creation of a regional transit authority will be beneficial to this effort. Such an organization would also be able to implement increased education for riders to learn about services in their area and how they connect to the regional transit system.

It was mentioned that the transit connection between UTRGV and South Texas College campuses has been helpful for student populations. This, combined with the fact that UTRGV bus services are free for students, has helped improve ridership.

Stakeholders also shared anecdotes that highlighted the safety concerns of the RGVMAB's transit system. Many described the risks created when bus service ends early in the evening. If someone gets off work just as the last bus departs, they may end up having to walk home alone in the dark if they miss the bus. This is a reality for many people who have jobs or other responsibilities that require them to commute home after the last bus of the day.

Some stakeholders described the general attitude toward transit throughout the region as one of negativity or confusion, and many others discussed difficulty navigating the different providers and systems. Stakeholders expressed that reliable and accessible service is important, and efforts to help users feel comfortable depending on them is important as well. The existing services were cited as having the following issues:

- Limited hours of operation
- Lacking amenities for carrying groceries and laundry
- Inconvenient ticket sales
- Limited intercity services lacking proper capacity
- Limited transit coverage outside of core cities
- Long distances to bus stops
- Unsheltered bus stops with no protection from severe weather
- Many stops are not accompanied by sidewalks, or proper lighting and signage
- Service information is not provided in Spanish
- Messaging is confusing when there are language barriers
- Some fleet vehicles are past useful life
- There is not a current seamless fare option across the valley
- Service standards vary across the valley

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TRANSIT PROVIDER COORDINATION

Each of the six transit providers in the region deliver transit services to different areas and different markets. Many of these services overlap, which can result in the services complimenting one another or unnecessary service duplication. The mix of services form a regional transit network, and because of this, the project team worked with each agency to develop an understanding about their services. This information was detailed in the existing conditions chapter and helped the project team understand the opportunities and challenges experienced by the different providers. The project team attended the Regional Public Transportation Advisory Panel (RTAP) on Tuesday, August 25, 2020 to discuss the priorities and goals of the Regional TDP. At this meeting and through stakeholder meetings, the project team learned about previous coordination efforts and identified potential opportunities and challenges for each transit provider and for the region. The alternatives and recommendations of the Regional TDP position Valley Metro and the other RGVMAB transit providers to capitalize on available opportunities and mitigate potential challenges.

Service Alternatives & Recommendations

The service alternatives are comprised of route alignment and service level recommendations intended to improve transit offered by Valley Metro and to provide coordination opportunities among all transit providers in the RGVMAB. The transit market analysis and public engagement effort identified the priorities for the Regional TDP, and the project team used these to inform, guide, and develop the service alternatives. Identified priorities are listed as follows:

- Improve connectivity and transfer opportunities at the Regional Transit Centers
- Preserve productive route segments
- Improve service in areas with high transit market scores driven from transit need, propensity, and key destinations
- Eliminate "loop riding" and out-of-direction travel
- Provide bi-directional service where possible and simplify route configurations to make navigating the transit system more intuitive
- Provide transit that saves passengers time through increased frequency, direct routing, and reliable schedules
- Design, deliver, and promote transit that is easy to find and use

The recommendations fall into three categories:

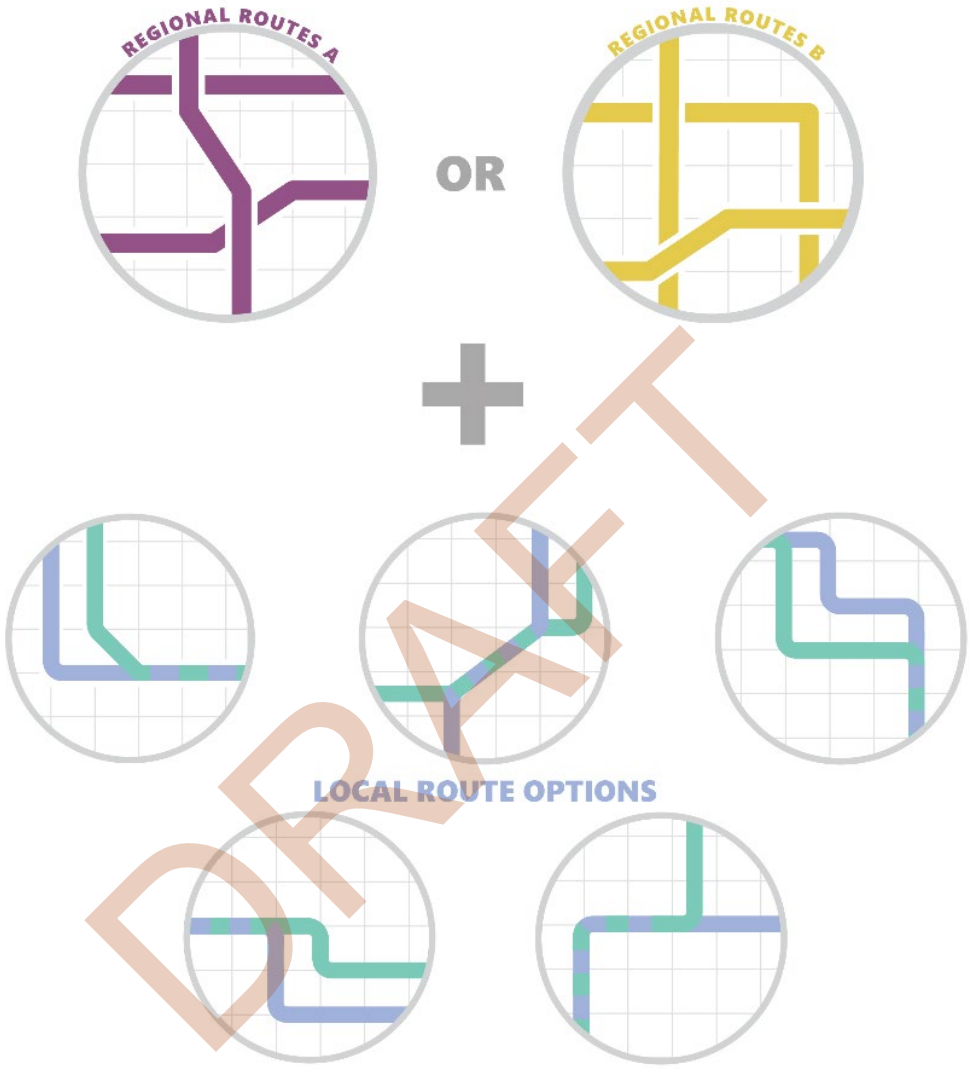
1. **Universal Recommendations** – strategies and recommendations that should be implemented regardless of the final alternative
2. **Regional Alternatives** – route alignments, service levels, and strategies aimed at moving passengers at the regional level
3. **Local Alternatives** – route alignments, service levels and strategies aimed at moving passengers at the local level

The regional and local options can be thought of as interchangeable components that can be mixed and matched to form service alternatives. For the purposes of this chapter and to provide comparative performance measures the project team has developed two alternatives. Each alternative has a local and regional option that were arranged in a way that best complement one another. The goal of this chapter is not to present an 'either or scenario' but to present the service recommendations in a way that allows Valley Metro to observe how the varied recommendations work as a network.

This approach will allow Valley Metro to isolate strengths and eliminate the weaknesses of each alternative and thus end up with an optimized and preferred alternative. Both alternatives are presented with base level frequencies with the intent to add service to the routes in a phased, prioritized, and sustainable manner once a funding plan is identified and established in the Transit Investment Chapter. Figure 4 shows the versatility and adaptability of organizing and presenting the alternatives in this manner.

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Figure 3-4: Interchangeable Components for Building RGV Transit Alternatives



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Universal Recommendations

While the alternatives vary by route design, there are several universal recommendations that hold true for both alternatives:

- **Coordination** – There are opportunities to reduce service duplication, increase frequency, and eliminate forced transfers by coordinating with other transit providers. Strategies such as alternating departure times on routes that share common termini can result in increased frequency. For example, both Valley Metro and Metro McAllen have recommendations to operate 30-minute service between UTRGV in Edinburg and Central Station in McAllen. While these routes do not have the same alignment, they do have similar cycle times. If schedules and departure times were coordinated to successfully alternate, it would result in a combined frequency of 15 minutes which essentially doubles the service being offered.
- **Service Standards:** The Regional Service Standards provided standards that are recommended as universal recommendations for both alternatives.
    - **Fixed Bus Stops and Timepoints** – Eliminating deviated fixed route service and only boarding passengers at designated bus stops will result in a more reliable and safer service. Timepoints are identified at major stops along a route and the bus uses them to stay on schedule. The scheduled passing times for these timepoints are the time at which a bus will never leave early and will help ensure transfers between routes and providers.
    - **Eliminate Route Patterns**: A focus of these alternatives is to make the experience simpler for the user. The Regional Service Standards defined that one way to improve the experience of riders is through eliminating route patterns. This means that riders will be able to identify where they can get on and off the bus without it changing for different trips throughout the day.
    - **Consistency of Service Span and Days**: Another standard prioritized in these alternatives is providing consistent span of service with each route providing services between 7:00 am – 8:00 pm Monday through Friday. Many routes were also recommended to provide Saturday service. Currently, no Sunday services are recommended.
- **Fare Structure** – Fares should be streamlined and coordinated across all transit providers. Fares should also be commensurate with the service being provided. The service alternatives include recommendations for express services between regional destinations intended for passengers who prefer a direct and rapid trip. There are also regional urban routes that may offer the same connection as the express service but with more stops and a longer travel time. These services offer different options and serve different markets. No transfer fee should be charged when transferring from one service type to another of equal or lesser fare. In certain situations, fees should be waived when transferring from one provider to another. Table 2 is the recommended fare structure for Valley Metro:

Table 3-2: Proposed Fare Structure for Valley Metro

Service Type	One-Way	Day Pass	30-Day Pass
Regional Express	$5	$9	$90
Regional Urban	$3	$5	$75
Local	$1.75	$3	$50

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- **Micro Transit** - Micro Transit service is also a resource in the alternative development process. These corridors are recommended to connect specific markets to the fixed route system with demand response service. This allows for unproductive routes in high demand areas to maintain service coverage, but in a more cost-effective manner (i.e. switching out deviated fixed route service to Micro Transit service).
- I**nternational Connectivity** – Both alternatives present new connections to international bridges currently not served by public transit in both Hidalgo and Progreso. These bridges served some of the most significant pedestrian crossings occurring in the RGVMAB. The McAllen-Hidalgo International Bridge reported 2,170,334 observed northbound pedestrian crossings in 2018 and the Weslaco-Progreso International Bridge reported 1,034,129 observed northbound pedestrian crossings in 2018.

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Alternative A

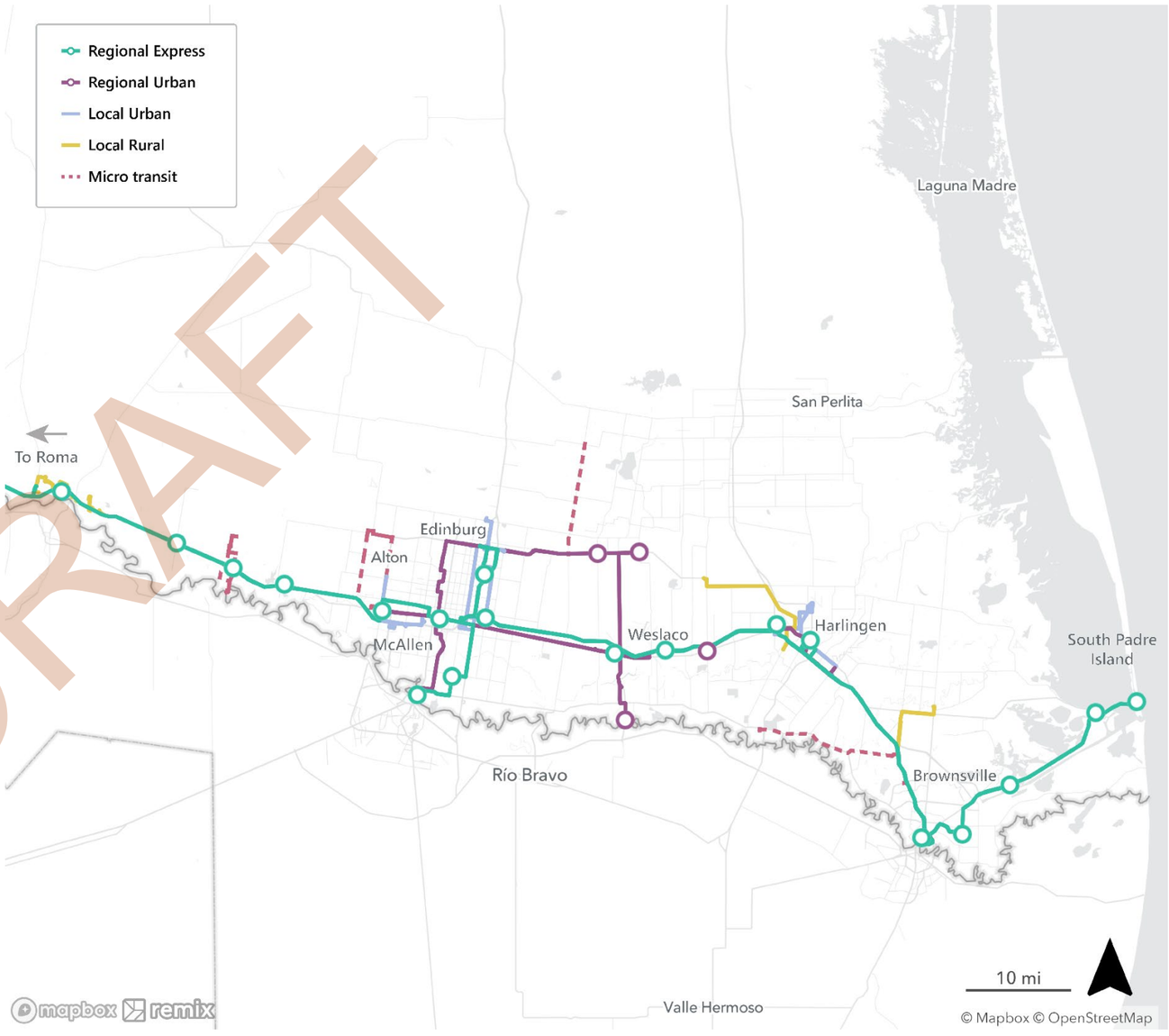
Alternative A presents a transit network focused on targeted express service that reduces travel time and optimizes service to mimic the regional and local travel patterns of both current transit users and potential future passengers. The key feature of Alternative A is the focus on expanding coverage and service levels for transit markets throughout the RGVMAB. This means a more balanced distribution of service focusing on transit need, propensity, and destinations as opposed to service designed around overall population coverage with infrequent and inadequate service. Alternative A has 23 recommended fixed routes; 6 Regional-Express routes, 5 Regional-Urban routes, and 12 Local routes (Figure 5). Also included are 5 Micro transit routes.

Table 3 shows the performance measures for Alternative A for the System as well as the Regional and Local routes. In Alternative A 226,532 people and jobs will have transit service through Valley Metro that comes at least every hour. Alternative A is estimated to provide 173,491 service hours annually and cost approximately $12,100,000 per year in operating costs for the fixed routes. Because these alternatives prioritize getting the fixed routes to hourly service, only 2 out of 23 routes have frequent service at 30 minutes or better. However, in planning for improvements in coordination with other service providers, higher frequency service can be provided to riders through alternating schedules from major transit stations.

Table 3-3: Alternative A Performance

Measure	Regional-Express	Regional-Urban	Local	Total System
Number of Fixed Routes	6	5	12	23
Number of Frequent Routes	1	0	1	2
Peak Buses	21	16	18	58
People and Jobs in Full-Service Coverage	29,397	126,161	149,527	249,618
People and Jobs in Hourly Service Coverage	29,397	113,687	130,683	226,532
People and Jobs in Frequent Service Coverage	7,753	-	6,179	12,174
Annual Service Hours	57,460	56,371	59,660	173,491
Annual Operating Cost Estimate	$3,960,000	$3,950,000	$4,170,000	$12,100,000

Figure 3-5: Alternative A System Map Overview



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ALTERNATIVE A REGIONAL ROUTES

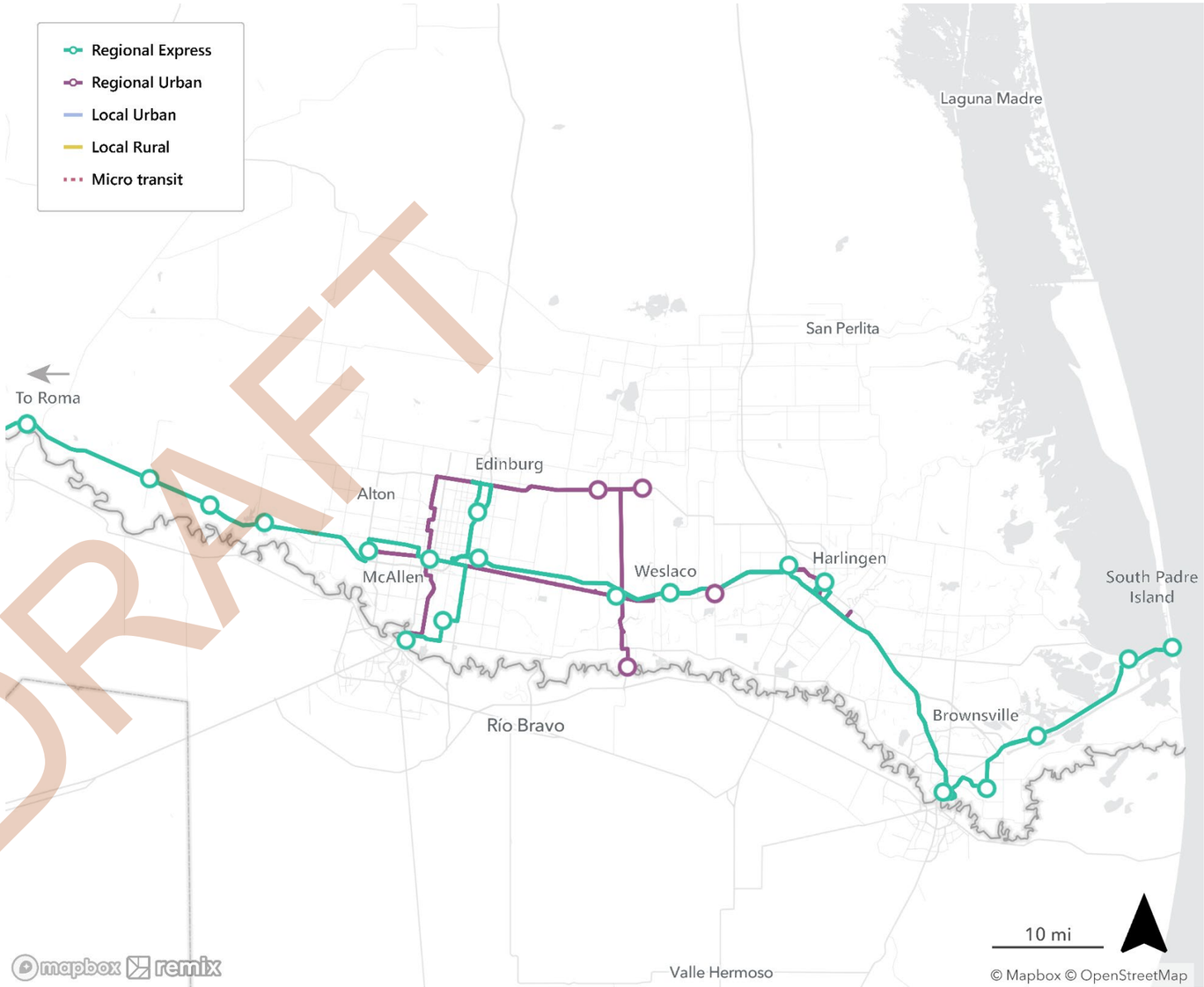
The regional routes of Alternative A focus on direct and optimized service to mimic current and future travel patterns. The focus is on strategically delivering service by time of day to eliminate transfers and provide more direct and quick travel times. Regional routes provide service between the many urban centers in the RGVMAB. The regional routes recommended in Alternative A are indicated in purple and blue-green as seen in Figure 6. For details about the regional routes, review Table 4 and Table 5.

Table 3-4: Alternative A Regional-Express Routes

Route Name*	Start Termini	Major Stops	End Termini	Peak Headway
MetroExpress 100	McAllen Central Station	STC Pecan Campus, Mission Station, La Joya, Sullivan City, Alto Bonito, Rio Grande City, STC Starr County, Escobares City Hall	Roma City Hall	60 min
MetroExpress 101	La Plaza - Brownsville	UTRGV Harlingen, Harlingen Terminal, Weslaco	McAllen Central Station	60 min
MetroExpress 104	La Plaza - Brownsville	Brownsville Airport, AMFELS at Port Brownsville, Port Isabel	Island Metro Transit Center	60 min
MetroExpress 107	Edinburg Transit Terminal	The Shoppes at RGV, Pharr Town Center, Downtown Pharr, HEB at Cage, Walmart, Downtown Hidalgo	Hidalgo Border Crossing	60 min
MetroExpress 108	La Plaza - Brownsville	None	McAllen Central Station	60 min
MetroExpress 109	La Plaza - Brownsville	UTRGV Brownsville, UTRGV Harlingen	UTRGV Edinburg	30 min

Routes that are **highlighted are the same in both Alternative A and B*

Figure 3-6: Alternative A Regional Routes



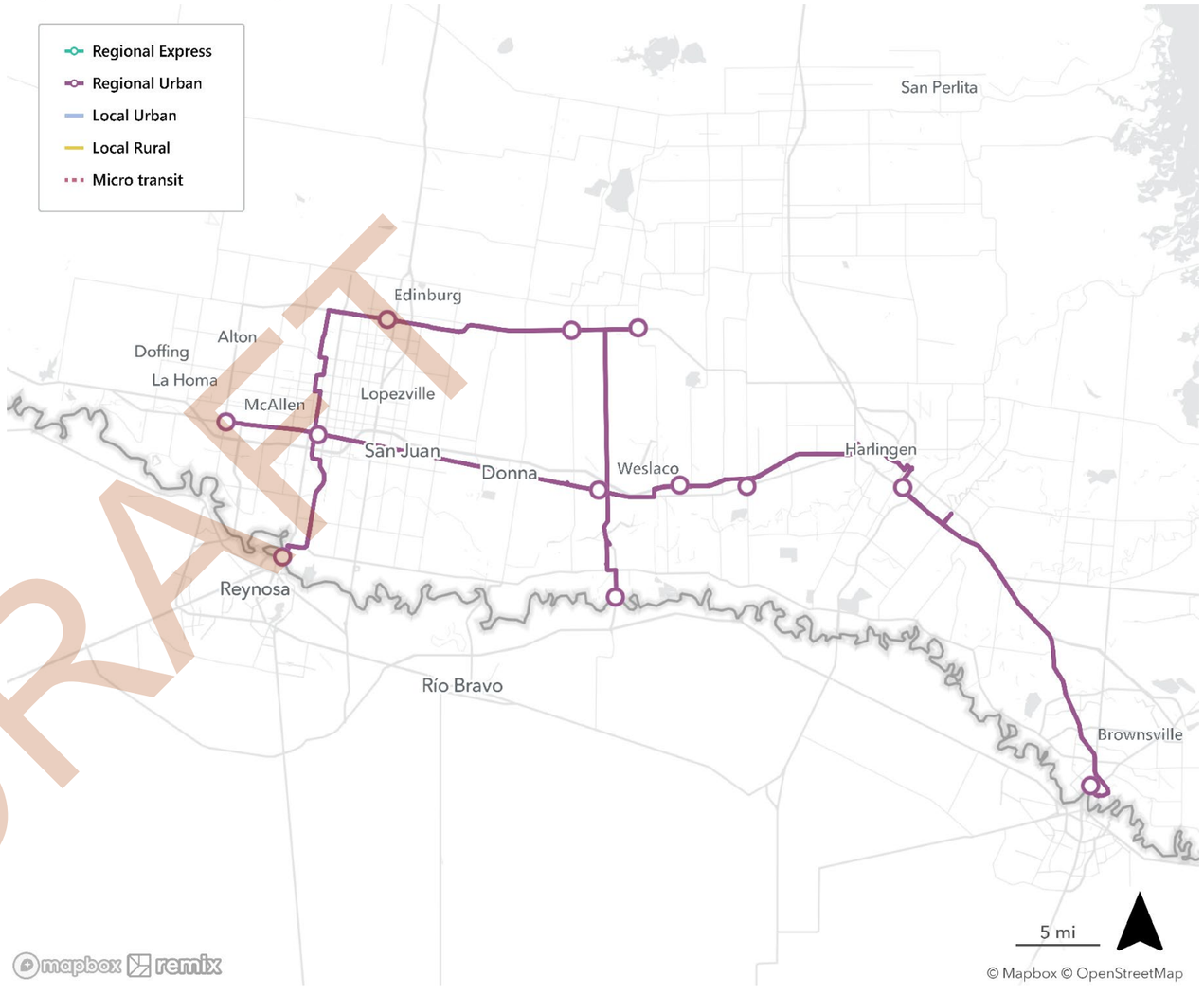
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Table 3-5: Alternative A Regional-Urban Routes

Route Name*	Start Termini	Major Stops	End Termini	Peak Headway
Route 111	La Plaza - Brownsville	UTRGV Brownsville, Harlingen Medical Center, UTRGV Harlingen, Valley Baptist Medical Center, Harlingen Terminal, La Feria, Mercedes, Weslaco Transit Center, Weslaco, Donna, Alamo, San Juan, Pharr, McAllen Central Station	Mission Station	60 min
Route 131	UTRGV Edinburg	1/4 mile spacing, McAllen North Station, McAllen International Airport	Hidalgo Border Crossing	60 min
Route 136	UTRGV Edinburg	1/4 - 1/2 mile spacing through towns/urban areas	La Villa City Hall	90 min
Route 150	Weslaco Transit Station	Edcouch, Elsa, 1/2 mile along International Blvd.	La Villa City Hall	60 min
Route 151	Downtown Weslaco	Weslaco Transit Station, 1/4 - 1/2 mile spacing through towns/urban areas	Weslaco-Progreso Bridge	60 min

Routes that are **highlighted are the same in both Alternative A and B*

Figure 3-7: Alternative A Regional-Urban Routes



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ALTERNATIVE A LOCAL ROUTES

Local routes provide services within and between urban and rural areas. In Rio Grande City, local routes remain unchanged from the existing service. In the Mission, McAllen, and Edinburg area some of the unproductive routes or route segments were converted to Micro transit areas or corridors. These areas will maintain service to the fixed route system through connecting riders using an on-demand service. In Harlingen, the local route network achieves increased frequency through the banding of local routes along the Harrison and Tyler couplet forming a transit corridor in the densest area of the City.

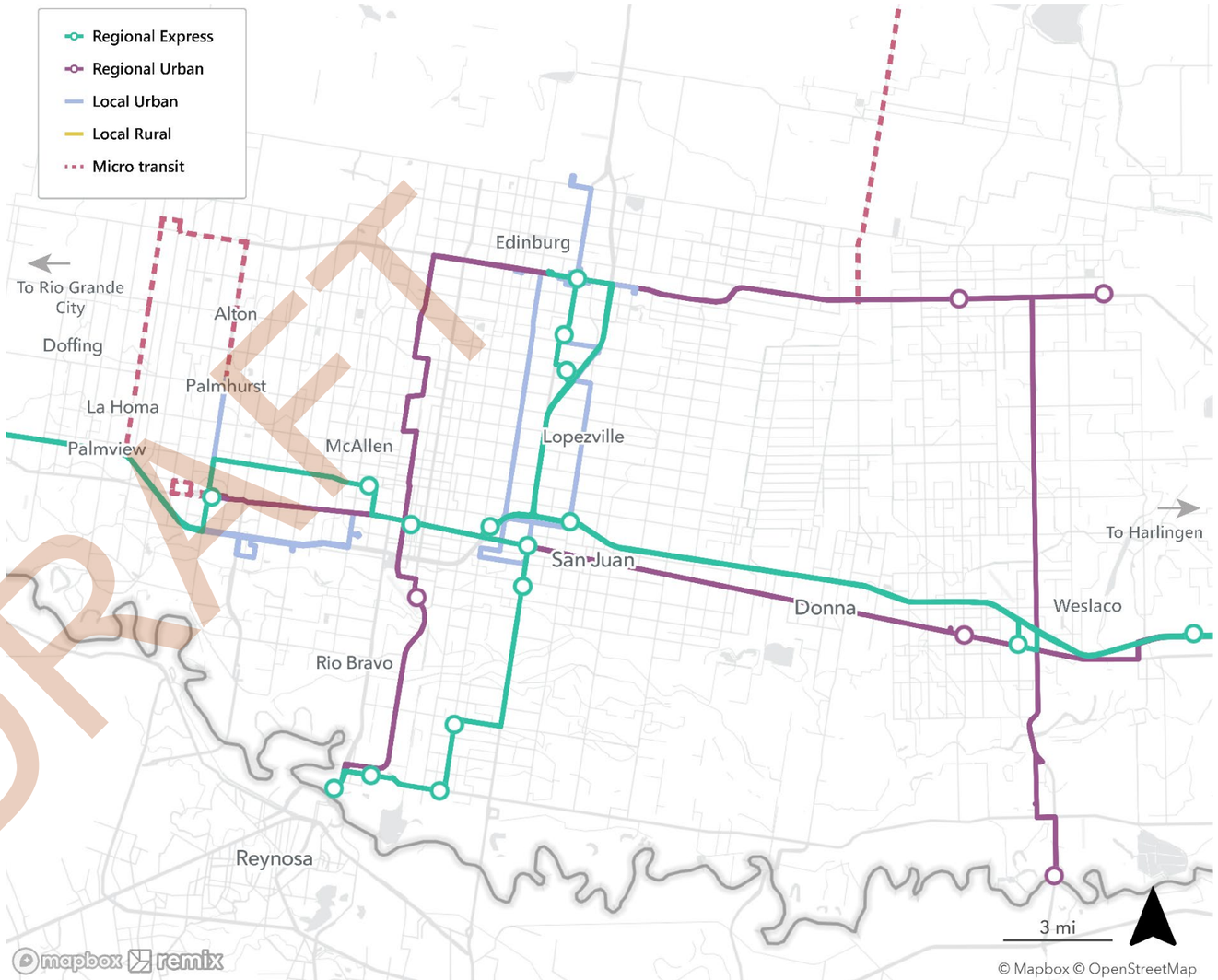
Local routes in Alternative A present a network designed to allow Valley Metro to systematically and strategically increase service frequency along the most productive segments of the network. This network would rely more heavily on coordinated transfers moving forward. The local routes recommended in Alternative A are indicated in yellow and light blue in Figure 8 and Figure 9. For details about the local routes, review Table 6 and Table 7.

Table 3-6: Alternative A Local-Urban Routes

Route Name*	Start Termini	Major Stops	End Termini	Peak Headway
Route 130	McAllen Central Station	McAllen Convention Center, 1/4 mile spacing	Palmhurst - Conway at Mile 3	60 min
Route 132	McAllen Central Station	1/4 mile spacing along Sugar Ave, Edinburg Terminal	Edinburg - University Plaza	60 min
Route 133	North Edinburg - Lull	1/4 - 1/2 mile spacing in North Edinburg, Hidalgo County Courthouse, HEB at Ebony, UTRGV Transit Connection at Closner, The Shoppes	Downtown Pharr	60 min
Route 134	Edinburg- Hidalgo County Courthouse	Key destinations and parking	Edinburg- Hidalgo County Courthouse	10 min
Route 135	Jackson Rd.	UTRGV, Edinburg- Hidalgo County Courthouse, Edinburg Transit Terminal	Raul Longoria Rd.	60 min
Route 161	HEB on S. P St.	Vista Mall, Cameron Crossing, Harlingen Transit Center, 1/4 mile spacing	Valley International Airport	60 min
Route 162	Harlingen Transit Center	1/4 mile spacing	Valley International Airport	60 min
Route 163	Harlingen Transit Center	1/4 - 1/2 mile spacing	San Benito Downtown	60 min

Routes that are **highlighted are the same in both Alternative A and B*

Figure 3-8: Alternative A Local Routes McAllen Area



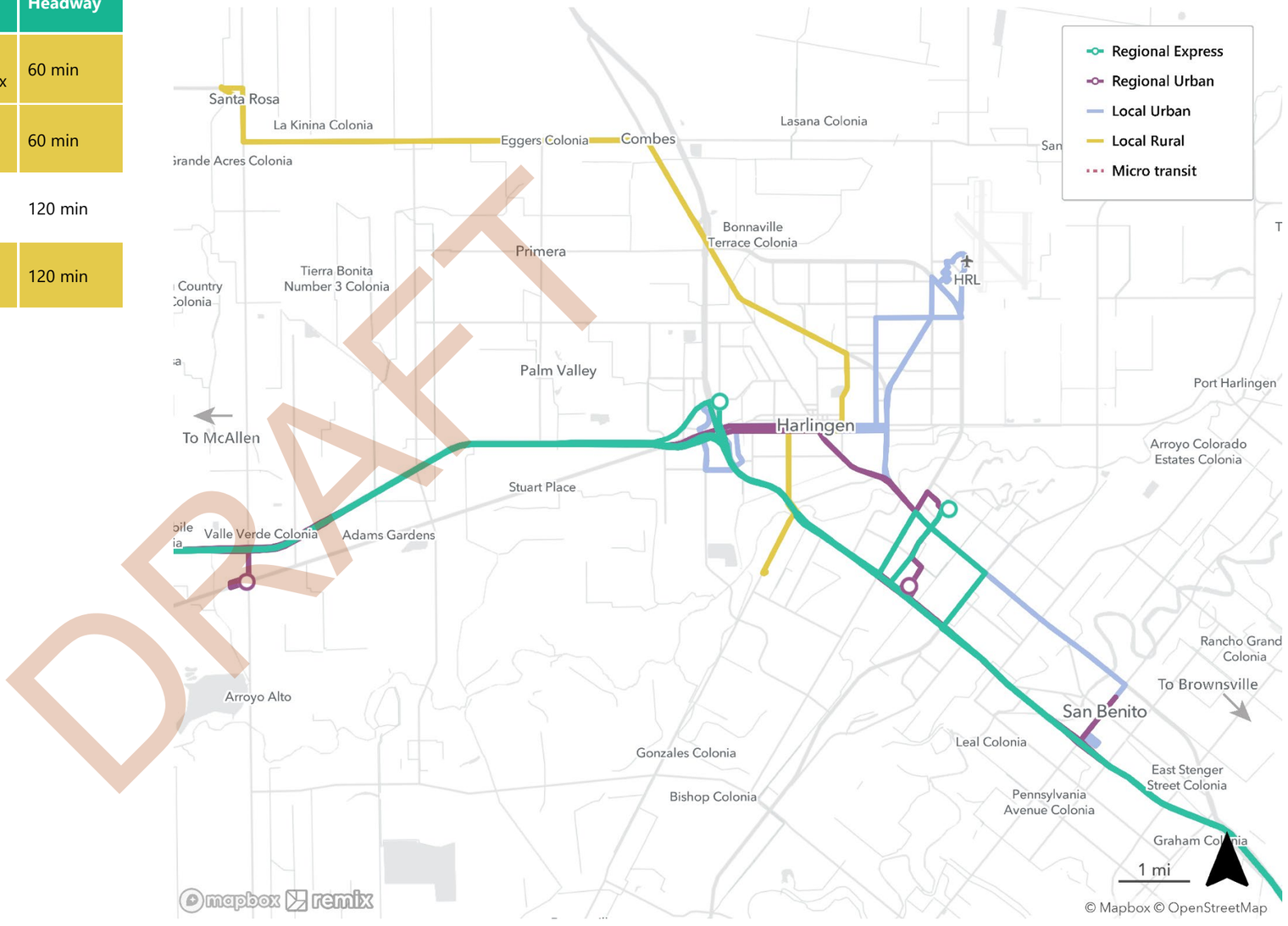
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Table 3-7: Alternative A Local-Rural Routes

Route Name*	Start Termini	Major Stops	End Termini	Peak Headway
Route 120	Rio Grande City Station	Post Office, County Courthouse, Palma & El Sauz, STC Starr County Campus	Starr County Courthouse Annex	60 min
Route 121	Rio Grande City Station	Bus & Santa Cruz, Alto Vista Park, Walmart off 2nd, HEB on Pete Diaz	La Puerta - Business at Gervaras Rd.	60 min
Route 160	Santa Rosa City Hall	1/4 - 1/2 mile spacing	Rio Grande State Center	120 min
Route 170	La Plaza - Brownsville	1/4 - 1/2 mile spacing in Los Fresnos	Los Fresnos Memorial Park	120 min

Routes that are **highlighted are the same in both Alternative A and B*

Figure 3-9: Alternative A Local Routes Harlingen Area



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Alternative B

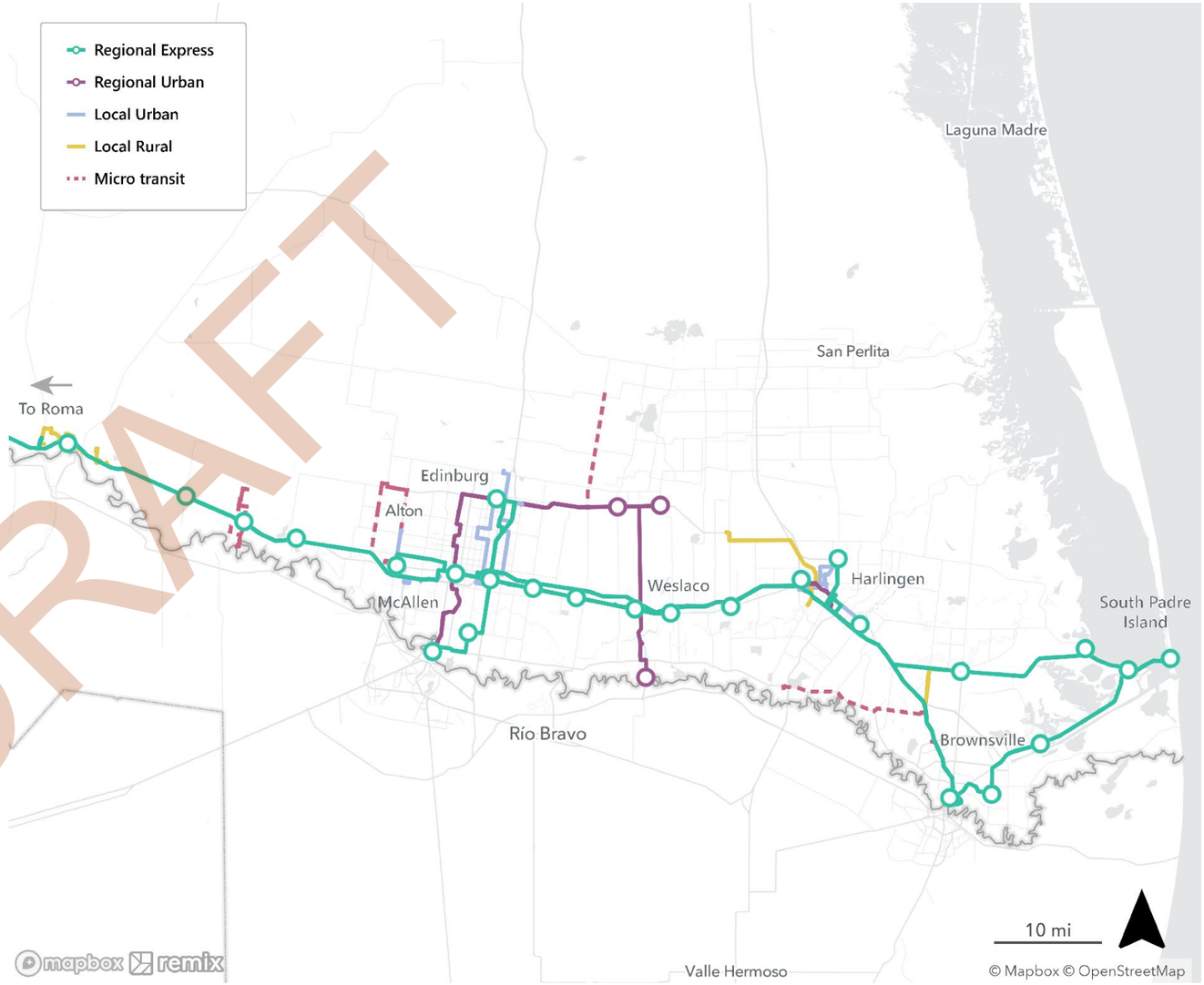
Alternative B presents a transit network focused on increasing connectivity and expanding targeted coverage for both population and jobs. Coordinated transfers will play a key role in the success of this alternative and provide an array of travel pattern options. This alternative provides the most service and thus requires a more significant transit investment than alternative A. Alternative B has 29 recommended fixed routes; 10 Regional-Express routes, 5 Regional-Urban routes, and 14 Local routes (Figure 10). Also included are 5 Micro transit routes.

Table 8 shows Alternative B performance measures for the System as well as the Regional and Local routes. In Alternative B, 238,570 people and jobs will have transit service on Valley Metro that comes at least every hour. Alternative B is estimated to provide 193,975 service hours annually and cost approximately $13,500,000 per year in operating costs for the fixed routes. Because these alternatives prioritize getting the fixed routes to hourly service, only 2 out of 29 routes have frequent service at 30 minutes or better. However, in planning for improvements in coordination with other service providers, higher frequency can be provided to riders through alternating schedules from major transit stations.

Table 3-8: Alternative B Performance

Measure	Regional-Express	Regional-Urban	Local	Total System
Number of Fixed Routes	10	5	14	29
Number of Frequent Routes	1	0	1	2
Peak Buses	27	15	21	67
People and Jobs in Full-Service Coverage	41,336	118,248	162,614	255,983
People and Jobs in Hourly Service Coverage	41,336	104,094	148,434	238,570
People and Jobs in Frequent Service Coverage	7,753	-	4,213	10,725
Annual Service Hours	72,773	53,735	67,466	193,975
Annual Operating Cost Estimate	$5,020,000	$3,770,000	$4,720,000	$13,500,000

Figure 3-10: Alternative B System Map Overview



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ALTERNATIVE B REGIONAL ROUTES

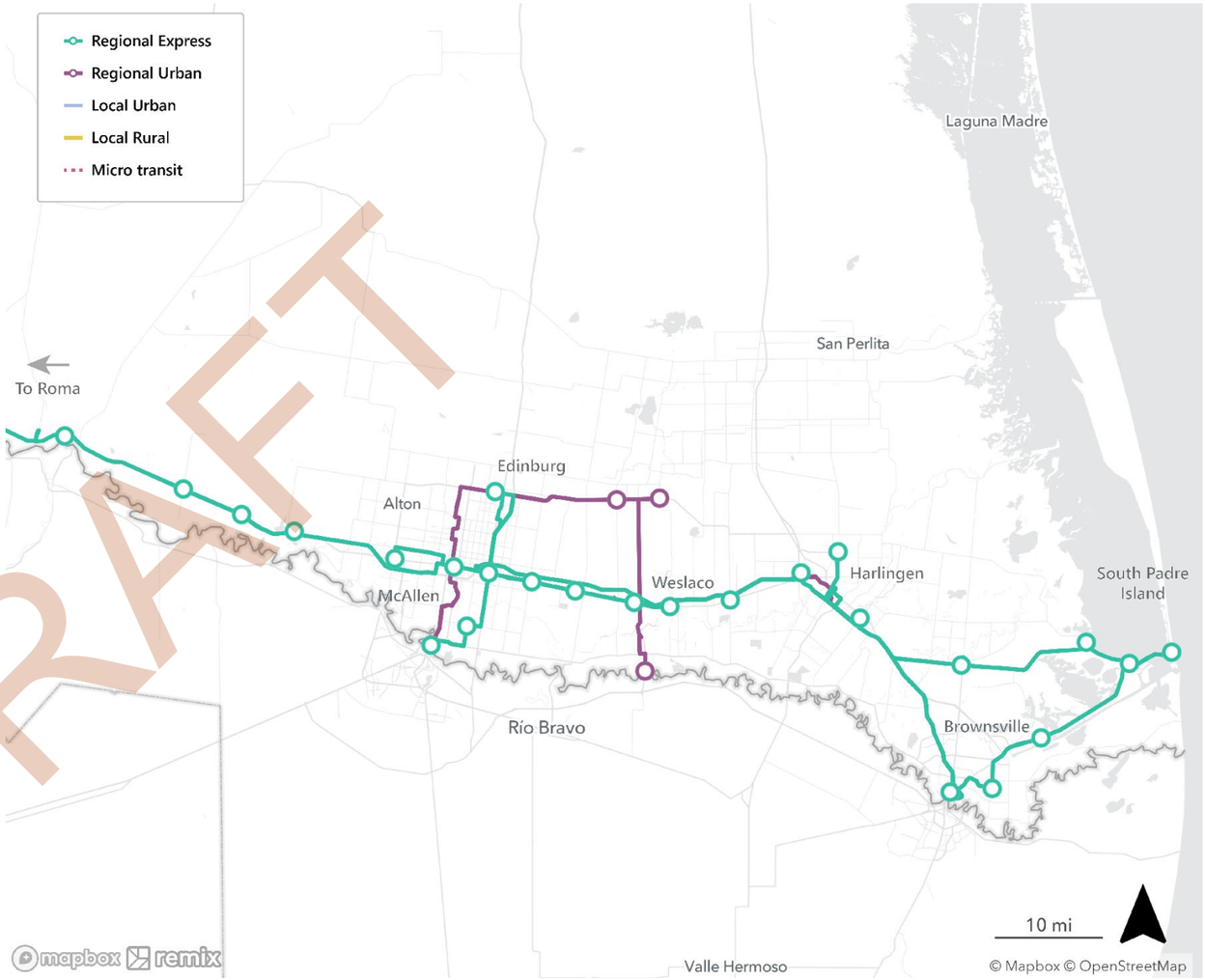
The regional routes of Alternative B focus on targeting specific commute patterns throughout the study area and allow for Valley Metro to prioritize and increase service for the most common commutes. This would result in more service for the most heavily used connections but produce longer commutes and more transfers for some of the less common regional commute trips. The regional routes recommended in Alternative B can be found below, and are indicated in purple and blue-green (Figure 11 and Figure 12). For details about the regional routes, review Table 9 and Table 10.

Table 3-9: Alternative B Regional-Express Routes

Route Name*	Start Termini	Major Stops	End Termini	Peak Headway
Metro Express 100	McAllen Central Station	STC Pecan Campus, Mission Station, La Joya, Sullivan City, Alto Bonito, Rio Grande City, STC Starr County, Escobares City Hall	Roma City Hall	60 min
Metro Express 101	McAllen Central Station	Pharr, San Juan, Alamo, Donna, Weslaco	Weslaco Transit Center	60 min
Metro Express 102	Weslaco Transit Center	Mercedes, RGV Outlets, La Feria	Harlingen Transit Center	60 min
MetroExpress 103	Harlingen Transit Center	UTRGV Harlingen, San Benito City Hall	La Plaza - Brownsville	60 min
Metro Express 104	La Plaza - Brownsville	Brownsville Airport, AMFELS at Port Brownsville, Port Isabel	Island Metro Transit Center	60 min
Metro Express 105	Mission Station	McAllen Central Station, UTRGV Edinburg	Edinburg Transit Terminal	60 min
Metro Express 106	Valley International Airport	Los Fresnos Memorial Park, Laguna Vista, Port Isabel	Island Metro Transfer Center	60 min
Metro Express 107	Edinburg Transit Terminal	The Shoppes at RGV, Pharr Town Center, Downtown Pharr, HEB at Cage, Walmart, Downtown Hidalgo	Hidalgo Border Crossing	60 min
Metro Express 108	La Plaza - Brownsville	none	McAllen Central Station	60 min
Metro Express 109	La Plaza - Brownsville	UTRGV Brownsville, UTRGV Harlingen	UTRGV Edinburg	30 min

Routes that are **highlighted are the same in both Alternative A and B*

Figure 3-11: Alternative B Regional Routes



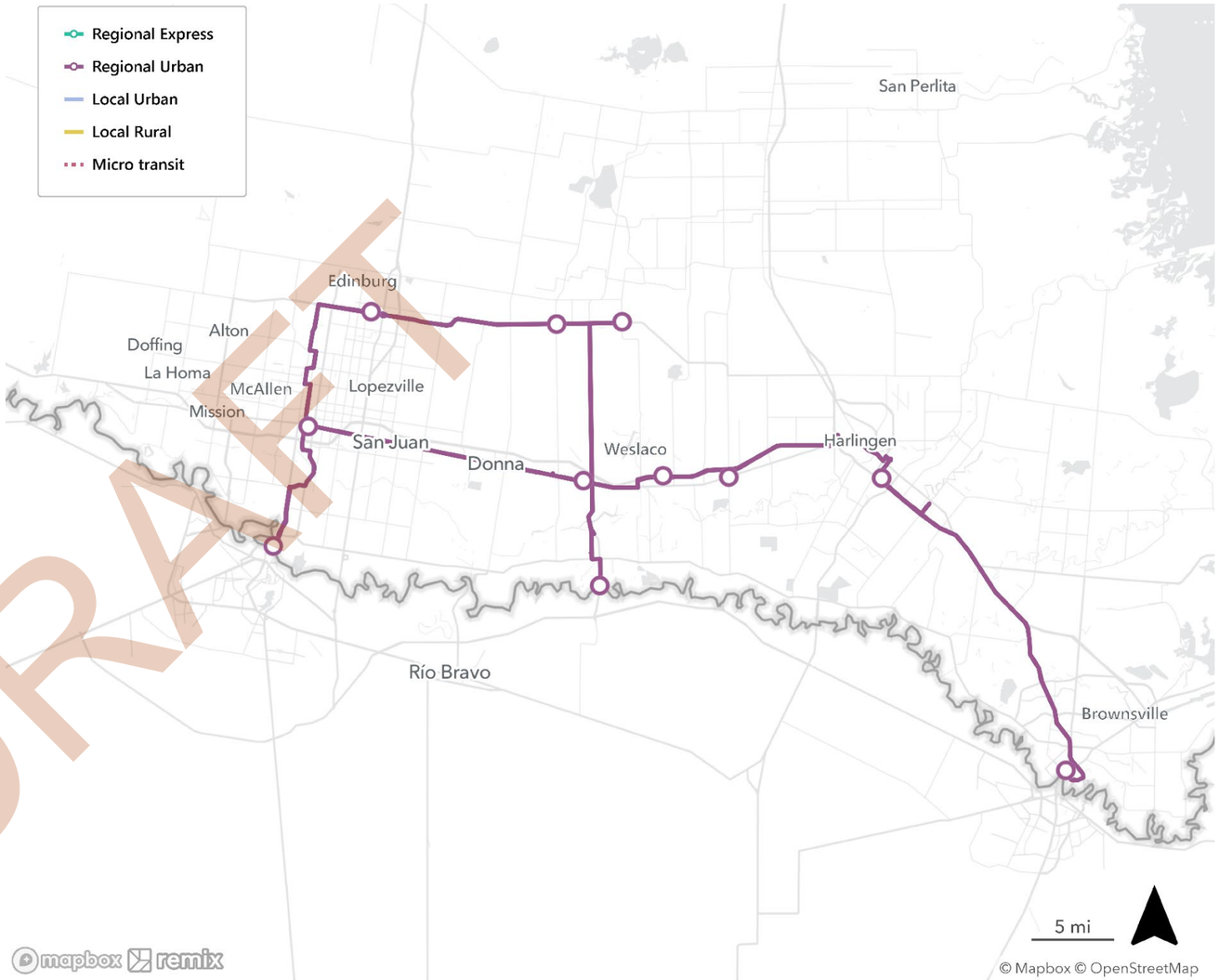
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Table 3-10: Alternative B Regional-Urban Routes

Route Name*	Start Termini	Major Stops	End Termini	Peak Headway
Route 111	La Plaza - Brownsville	UTRGV Brownsville, Harlingen Medical Center, UTRGV Harlingen, Valley Baptist Medical Center, Harlingen Terminal, La Feria, Mercedes, Weslaco Transit Center, Weslaco, Alamo, San Juan, Pharr	McAllen Central Station	60 min
Route 131	UTRGV Edinburg	1/4 mile spacing, McAllen North Station, McAllen International Airport	Hidalgo Border Crossing	60 min
Route 136	UTRGV Edinburg	1/4 - 1/2 mile spacing through towns/urban areas	La Villa City Hall	90 min
Route 150	Weslaco Transit Station	Edcouch, Elsa, 1/2 mile along International Blvd.	La Villa City Hall	60 min
Route 151	Weslaco Transit Station	1/4 - 1/2 mile spacing through towns/urban areas	Nuevo Progreso Bridge	60 min

Routes that are **highlighted are the same in both Alternative A and B*

Figure 3-12: Alternative B Regional-Urban Routes



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ALTERNATIVE B LOCAL ROUTES

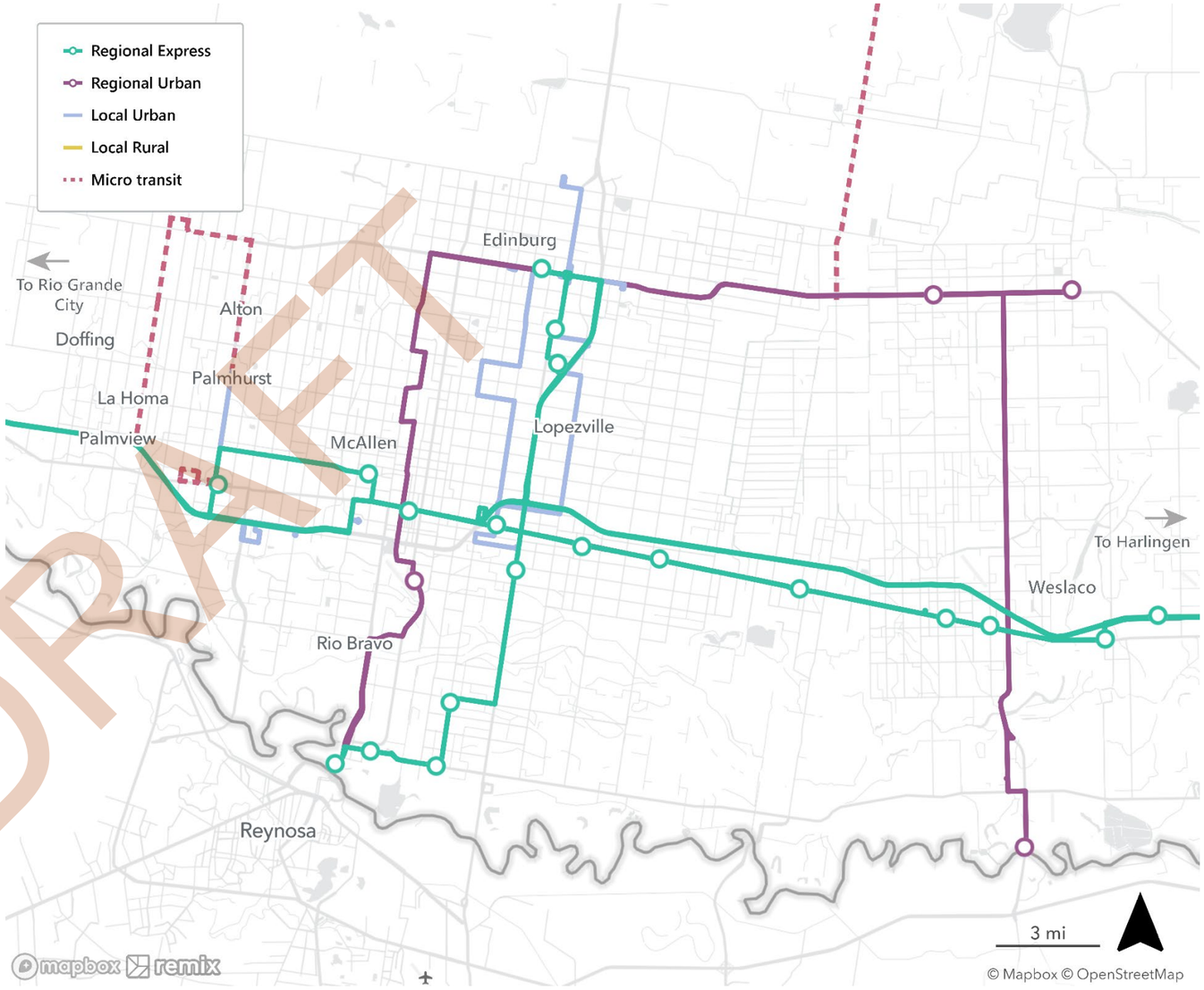
Local routes provide services within and between urban and rural areas. In Harlingen, the local route network achieves increased coverage through the spacing of local routes in north/south and east/west patterns. Connectivity is maximized through connecting all local routes at the Harlingen Transit Center. In the western portion of the study area local routes in Alternative B present a network design with some changes to Alternative A, including dividing up a north-south route through North Edinburg to Pharr. The local routes recommended in Alternative B can be found below and are indicated in yellow and light blue (Figure 13 and Figure 14). For details about the local routes, review Table 11 and Table 12.

Table 3-11: Alternative B Local-Urban Routes

Route Name*	Start Termini	Major Stops	End Termini	Peak Headway
Route 130	McAllen Central Station	McAllen Convention Center, 1/4 mile spacing	Palmhurst - Conway at Mile 3	60 min
Route 132	McAllen Central Station	1/4 mile spacing along Sugar Ave., Edinburg Terminal	Edinburg - University Plaza	60 min
Route 133 N	North Edinburg - Lull	1/4 - 1/2 mile spacing in North Edinburg,	Edinburg-Hidalgo County Courthouse	60 min
Route 133 S	Edinburg-Hidalgo County Courthouse	HEB at Ebony, UTRGV Transit Connection at Closner, The Shoppes, 1/4 - 1/2 mile into Pharr	Downtown Pharr	60 min
Route 134	Edinburg-Hidalgo County Courthouse	loop through parking lots	Edinburg-Hidalgo County Courthouse	10 min
Route 135	Jackson Rd.	UTRGV, Edinburg- Hidalgo County Courthouse, Edinburg Transit Terminal, Closner Blvd., The Shoppes	Raul Longoria Rd.	60 min
Route 161	HEB on S. P St.	Vista Mall, Cameron Crossing, Harlingen Transit Center, 1/4 mile spacing	Valley International Airport	60 min
Route 162	Harlingen Transit Center	1/4 mile spacing	Valley International Airport	60 min
Route 163	Harlingen Transit Center	1/4 - 1/2 mile spacing	San Benito Downtown	60 min

Routes that are **highlighted are the same in both Alternative A and B*

Figure 3-13: Alternative B Local Routes McAllen Area



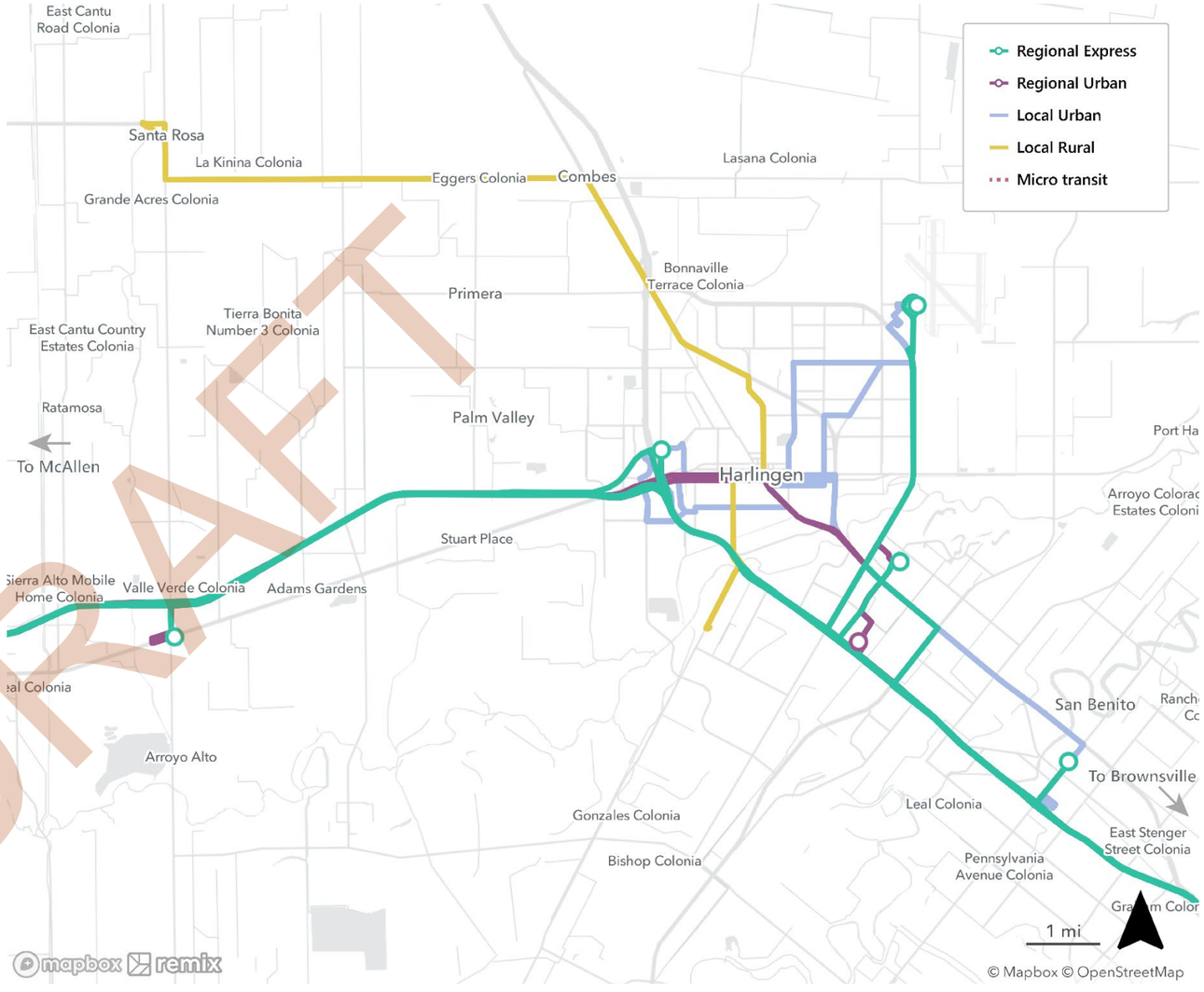
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Table 3-12: Alternative B Local-Rural Routes

Route Name*	Start Termini	Major Stops	End Termini	Peak Headway
Route 120	Rio Grande City Station	Post Office, County Courthouse, Palma & El Sauz, STC Starr County Campus	Starr County Courthouse Annex	60 min
Route 121	Rio Grande City Station	Bus & Santa Cruz, Alto Vista Park, Walmart off 2nd, HEB on Pete Diaz	La Puerta - Business at Gervaras Rd.	60 min
Route 160 N	Santa Rosa City Hall	1/4 - 1/2 mile spacing	Harlingen Transit Center	120 min
Route 160 S	Harlingen Transit Center	1/4 - 1/2 mile spacing	Rio Grande State Center	60 min
Route 170	La Plaza - Brownsville	1/4 - 1/2 mile spacing in Los Fresnos	Los Fresnos Memorial Park	120 min

Routes that are **highlighted are the same in both Alternative A and B*

Figure 3-14: Alternative B Local Routes Harlingen Area



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Conclusion

Each of the alternatives represent a set of service recommendations comprised of several routes that appear in both alternatives as well as unique routes serving different markets through alternative alignments and service levels. Both alternatives present route alignment modifications and service level adjustments intended to improve transit for those traveling into, within, and out of the RGVMAB.

Table 13 displays the differences when compared to the existing Valley Metro service. Comparing the performance measures provides insights into how the alternatives compare to one another as well as how they compare to the existing service. The performance metrics show the annual cost of operations, number of routes, annual service hours, number of frequent routes, peak buses, and people and jobs served by full-coverage, hourly coverage, and frequent coverage. One of the most significant measures in the table is the number of people and jobs served by transit. While this critical measure is lower for the full-service coverage in both alternatives when compared to the existing service, it is important to note the amount of service being delivered and the transit markets being served. Most of the routes in the existing system are providing infrequent service in areas with extremely low ridership and would not meet many of the standards identified in the Regional Service Standards.

Both alternatives present an optimized transit network that would increase service levels and deliver viable transit options appropriate for the markets being served. By looking at the Hourly Service Coverage, we can see a vast improvement in service for either of these alternatives compared to existing Valley Metro service with as much as a 209% to 225% increase in people and jobs with access to an hourly service coverage area.

Table 3-13: Alternative Performance Comparison

Measure	Existing Total	Alternative A Total	Alternative B Total
Number of Routes	20	23	29
Number of Frequent Routes	1	2	2
Peak Buses	30	58	67
People and Jobs in Full-Service Coverage	273,420	249,618	255,983
People and Jobs in Hourly Service Coverage	73,320	226,532	238,570
People and Jobs in Frequent Service Coverage	4,213	12,174	10,725
Annual Service Hours	82,189	173,491	193,975
Annual Operating Cost Estimate	$5,810,000	$12,100,000	$13,500,000

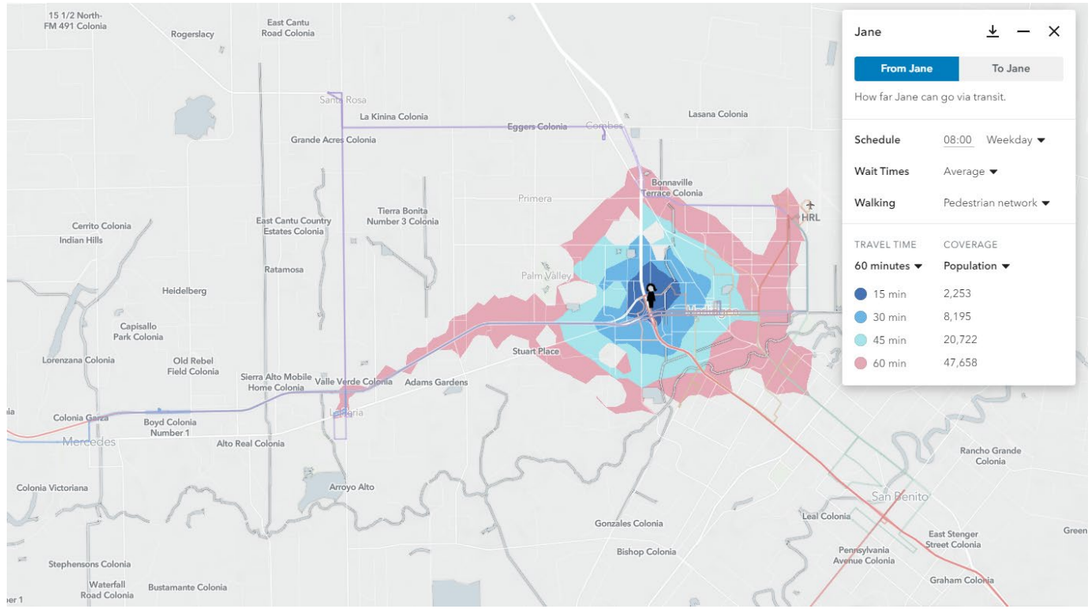
Another method for comparing these alternate solutions for future transit recommendations is utilizing the 'Jane' tool by Remix™ to determine service coverage by different travel times along the pedestrian street network. Harlingen Transit Terminal is a major transit connection for routes for existing service and the future alternatives, so it is an appropriate way to compare the approximate differences in travel time benefits between alternatives. Table 14 shows the number of people and jobs within each travel time zone from Harlingen Transit Station. Although the 15- and 30-minute coverage is similar between the three networks, the future alternatives show an improvement in the number of people and jobs within a 45- to 60-minute travel time to Harlingen Transit Station.

Table 3-14: People and Jobs in Travel Time Zones from Harlingen Transit Station

Travel Time Zone	Existing System	Alternative A	Alternative B
15 minutes	3,262	3,286	3,294
30 minutes	11,637	12,847	12,883
45 minutes	28,652	46,685	46,545
60 minutes	65,905	91,501	94,841

Screenshots of the Jane tool from Remix™ are included for each alternative to show the difference in the coverage (see Figure 15, Figure 16, and Figure 17). This tool can be used to compare the alternatives from other stations, time of day, and service days to get a full picture of how the alternatives compare. Moving forward, as more frequency is added to routes in the phased implementation of these recommendations, this information will be a helpful tool to compare the travel time improvements for implementation of services.

Figure 3-15: Existing System Travel Time from Harlingen Transit Station



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Figure 3-16: Alternative A System Travel Time from Harlingen Transit Station

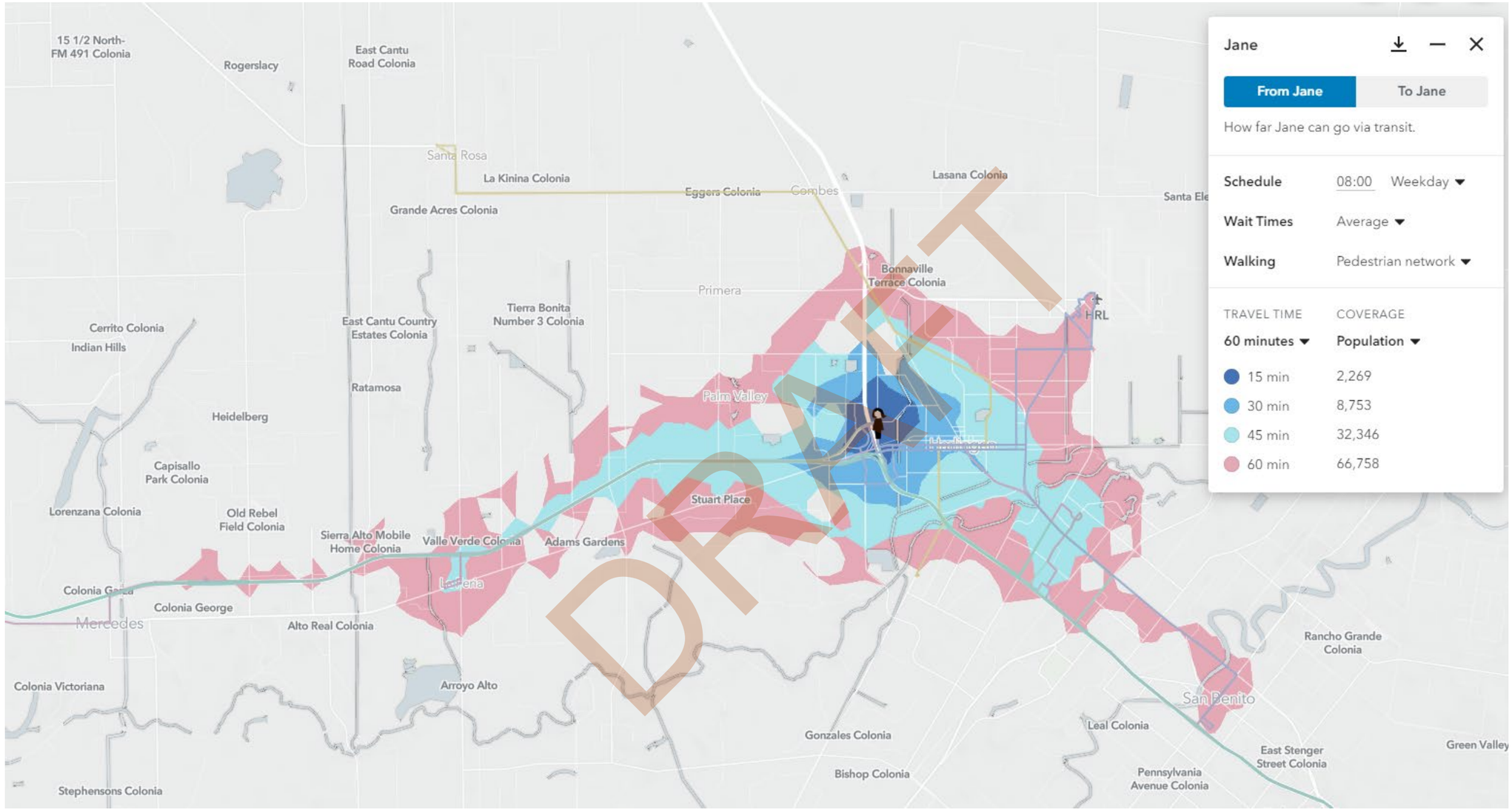
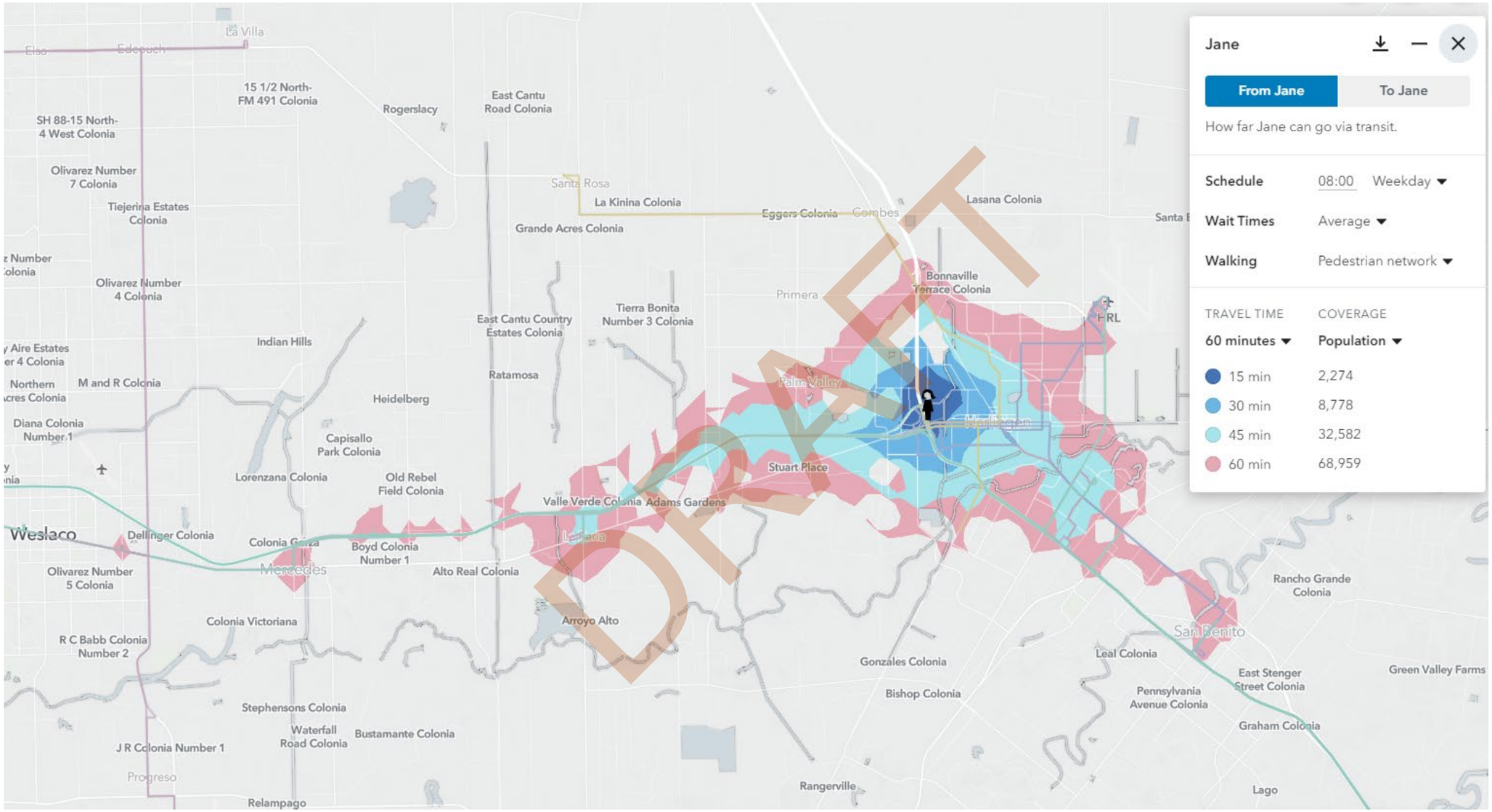


Figure 3-17: Alternative B System Travel Time from Harlingen Transit Station



4 IMPLEMENTATION PLAN

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The implementation plan for Valley Metro service described in this chapter recommends two transit service alternatives phased across the 10-year TDP horizon. Cost estimates are provided for the implementation of transit services. Route prioritization is also provided to help guide the decisions in each phase for when to implement the various routes and groups of routes.

INTRODUCTION

The TDP Recommendations and Alternatives as described in Chapter 3 will be implemented in phases based on the input of technical analyses, regional coordination efforts, and public and staff input. The implementation plan outlines the costs and recommendations for phasing both service alternative A and alternative B for Valley Metro. This phased approach will work in tandem with the Regional Service Standards to implement the recommendations successfully and sustainably for high quality transit throughout the RGVMAB. Regional coordination with other transit providers will be an important consideration throughout the phased implementation. This approach will begin with the service currently on the ground and incrementally enhance service throughout the region. The implementation plan is separated into three phases:

- Phase 1 (1 to 2 years): Small enhancements to the system through the implementation of routes and groups of routes with high priority and costs that are close to consistent with existing service.
- Phase 2 (Years 2 to 5): Implementation of recommended routes at existing service levels.
- Phase 3 (Years 5 to 10): Adjust new routes to meet regional service standards.

These phases aim to help disperse cost and prioritize sustainable, phased changes throughout the 10-year horizon of this plan. Within the phases there are recommendations for prioritizing the implementation of routes.

Cost Estimation

All costs represented in the Implementation Plan are shown in 2020 dollars to be able to easily compare the costs accrued in different phases. However, depending on when the elements of the plan are implemented, it can be expected that costs will increase due to inflation. Regarding operation cost assumptions, Valley Metro's services for a fixed route in an urban area is approximately $69 per hour, while a fixed route in a rural area costs approximately $73 per hour. These costs were used for estimating the cost to operate fixed route services in each phase. The cost of operation for UTRGV and STC routes were also estimated using Valley Metro's cost per hour for an equal comparison.

To estimate the potential costs for acquiring new buses or bus stops, estimates were created from reviewing peer cities that operate fixed route services. A cost of $75 per bus stop was used to estimate the cost of a basic sign and pole to designate a stop. However, if Valley Metro considers adding bus shelters to major stops in the future, this would cost in the range of $6,000 - $9,000 per sheltered stop. For this plan, a cost of $400,000 was assumed for acquiring a new bus and $100,000 for a cutaway or a van. Lastly, the initial startup fee for the software required to run Micro transit or on-demand pickup services is a one-time fee of approximately $25,000 for the service and $6,000 per zone.

Route Groups

In order to determine route phasing, it is important to understand the various dependencies that exist in the recommended routes within the Valley Metro service alternatives. Route recommendations were separated into route groups, which contain routes that would best be implemented in conjunction. Routes were grouped by considering the existing service in the area, the route being replaced, as well as any route dependencies, such as transfers, expected interlining, technology

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availability, and transit agency coordination requirements. In both alternatives there were six logical route groupings:

- **Regional Core**: The core group of regional routes which connect major cities and services and rely on well-timed transfers and major transit connections in the region.
- **Harlingen**: The local transit service for the City of Harlingen.
- **Edinburg**: The major regional routes in Edinburg that require coordination of both express and local services.
- **Weslaco**: The regional urban routes that function in and out of the Weslaco Transit Center and require coordination in implementation with schedules for transfers.
- **Rio Grande City**: The local transit service for the Rio Grande City.
- **Micro transit**: Routes, or sections taken from existing routes that are recommended for operation as on-demand micro transit service, when available.

Prioritization

Routes and route groups were used to further prioritize and phase recommendations. Three main components informed the prioritization process and ensured that the process supports the vision of this plan. The following list details the metrics used for the prioritization process:

- **Transit Propensity**: Where will transit work? Transit propensity represents the sum of population and employment within a quarter mile route buffer of each stop.
- **Target Transit Riders**: Who depends on Transit? Target transit riders represent the sum of non-driving population, limited-English population, minorities, population living with disabilities, population living in poverty, and no car households (refer to Chapter 1 Existing Conditions) found within the same quarter mile stop buffer used to capture transit propensity.
- **Ridership**: How many people will be using the service? Ridership estimates were generated through the Federal Transit Administration (FTA) Simplified Trips On Project Software (STOPS) model, which compares ridership generated for existing routes and future route recommendation alternatives.

These metrics, (ridership, transit propensity, and target transit riders), were analyzed to evaluate each route or route group. The routes and route groups were given metric scores which compared the performance of the route(s) in that metric category against the other routes/groups in the system. These scores were combined to get a final score for the route which informed the final prioritization for each phase. Ridership, transit propensity, and target transit riders were weighted equally in this ranking.

Phased Implementation

This section illustrates the two alternatives using a phased implementation. Tables 1 through 4 provide information about the route groups for implementation, prioritization of routes, and phasing with estimated costs for each route and the service as a whole. Additionally, information about route miles, service hours, and needed vehicles is included. Phases for both alternatives are similar.

Phase 1 in both Alternative A and B includes the implementation of Metro Express 109 – UTRGV Connector, and the Regional Core Metro Express Routes. The remaining service consists of existing

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routes, with routes that have similar coverage to 109 and the Regional Core routes removed. The routes that will be retired from the existing service include the Red Line, Route 50, Route 60, STC Green Line, UTRGV Campus Connector, and UTRGV Rio Grande City Connector.

Phase 2 in both Alternatives A and B includes the implementation of the new route system with current headways. Coordination with STC and UTRGV will be needed for replacement of the STC Purple Line service and the UTRGV Brownsville to Weslaco, Edinburg to Weslaco, and EVABL services.

Phase 3 in both Alternatives A and B includes the full implementation of both the new systems and the new service standards. Since Phase 3 includes the implementation of new service standards, it is also an appropriate time to transition from route deviations to a true fixed route system with complementary paratransit. Without previous paratransit service in the area for a true comparison, similar systems expend an additional 20-30% of the budget on paratransit service depending on specific characteristics of the region.

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Alternative A

Alternative A presents a transit network focused on targeted express service that reduces travel time and optimizes service to mimic the regional and local travel patterns of both current transit users and potential future passengers. Alternative A has 28 recommended routes: 6 Regional-Express routes, 5 Regional-Urban routes, 12 Local routes, and 5 Micro transit routes. Refer to Chapter 4 Recommendations and Alternatives for the details and maps which describe this alternative.

ROUTE GROUPS

As mentioned, there were 6 logical groupings for routes in the RGVMAB which will need to be considered to plan for the implementation of Alternative A. There are 8 routes which were not grouped for implementation. The route groupings for Alternative A can be found in Table 1 (immediately to the right). Highlighted cells represent routes that require some additional coordination for implementation with routes outside their group, or with another transit agency. See Table 2 below for details.

Table 4-2: Alternative B Additional Route Coordination

Route or Group	Coordination
Metro Express 100	Coordination with South Texas College (STC) on consolidation of the Green Line
Metro Express 109	Coordination with University of Texas at Rio Grande Valley (UTRGV) on consolidation of the Campus Connector
Route 111	Takes a portion of existing local services in Harlingen and along Route 170 (known as Route 45 for existing)
Route 131	Requires coordination with Metro McAllen as it largely runs in the City of McAllen
Route 130	Requires the availability of Micro transit service as a part of the route, in Mission, is recommended to be converted to on-demand service
Route 132	Requires coordination with Metro McAllen to ensure adequate service to the major medical centers on McColl & Dove, and McColl & Trenton.
Harlingen: 160, 161, 162, 163	Requires coordination with the implementation of Route 111 to avoid gaps in services.
Route 170	Requires coordination with the implementation of Route 111 to avoid gaps in services.

Table 4-1: Alternative A Route Groups

Route Class	Route Name*	Regional Core	Harlingen	Edinburg	Weslaco	Rio Grande City	Micro transit	No Group
Regional Express	Metro Express 100	**100**						
	Metro Express 101	**101**						
	Metro Express 104	**104**						
	Metro Express 107			**107**				
	Metro Express 108							**108**
	Metro Express 109							**109**
Regional Urban	Route 111							**111**
	Route 131							**131**
	Route 136				**136**			
	Route 150				**150**			
	Route 151				**151**			
Local Urban	Route 130							**130**
	Route 132			**132**				
	Route 133			**133**				
	Route 134							**134**
	Route 135							**135**
	Route 161		**161**					
	Route 162		**162**					
	Route 163		**163**					
Local Rural	Route 120					**120**		
	Route 121					**121**		
	Route 160		**160**					
	Route 170							**170**
Micro transit	Route 190						**190**	
	Route 191						**191**	
	Route 192						**192**	
	Route 193						**193**	
	Route 194						**194**	

Routes that are **highlighted represent routes with additional coordination required for implementation, see Table 2*

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PRIORITIZATION

Table 3 shows the prioritization results for Alternative A. It is important to note that these prioritization scores and subsequent rankings are representative of potential demand, service to key locations and existing markets, and transit serving disadvantaged populations. However, there may be other considerations that impact the ability to implement service throughout the phased implementation plan including regional coordination with other providers, availability of Micro transit technology, and availability of funding. For Phase 1, this prioritization can be used to select routes to roll out. In Phase 2, this prioritization should guide what services to prioritize when rolling out new services. Finally, using this prioritization in Phase 3 should guide the implementation of adding more frequency on routes.

Table 4-3: Alternative A Prioritization Results

Route/Group	Propensity Score	Target Riders Score	Ridership Score	Final Score	Rank
Metro Express 109	2	5	2	9	1
Regional Core: 100, 101, 104	6	4	1	11	2
Metro Express 108	1	1	12	14	3
Edinburg: 107, 132, 133	7	9	5	21	4
Weslaco: 136, 150, 151	11	6	4	21	5
Route 111	9	10	3	22	6
Route 134	4	11	7	22	7
Route 130	8	8	9	25	8
Route 131	5	14	6	25	9
Route 135	3	12	11	26	10
Rio Grande City: 120, 121	13	2	13.5	28.5	11
Route 170	12	7	10	29	12
Micro transit: 190, 191, 192, 193, 194	14	3	13.5	30.5	13
Harlingen: 160, 161, 162, 163	10	13	8	31	14

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BUSES AND AMENITIES

Alternative A will require the acquisition of new vehicles with the additional services, as well as bus stops as Valley Metro transitions to a fixed route system. These estimated costs are a one-time fee, and therefore are not included in the estimation of the annual costs for each phase. The costs are estimated in 2020 dollars. Another cost is the initial startup fee for the software to run micro transit or on-demand pickup services. The initial startup fee for the software required to run Micro transit or on-demand pickup services is a one-time fee of approximately $25,000 for the service and $6,000 per zone.

Table 4-4: Alternative A Cost for Buses and Bus Stops

Phase	New Buses	New Cutaways	New Bus Stops	Micro Transit Software	Cost Estimate
Phase 1	6	-	-	-	$2,400,000
Phase 2	1	-	-	1	$455,000
Phase 3	16	5	1,219	-	$6,991,425

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PHASE 1

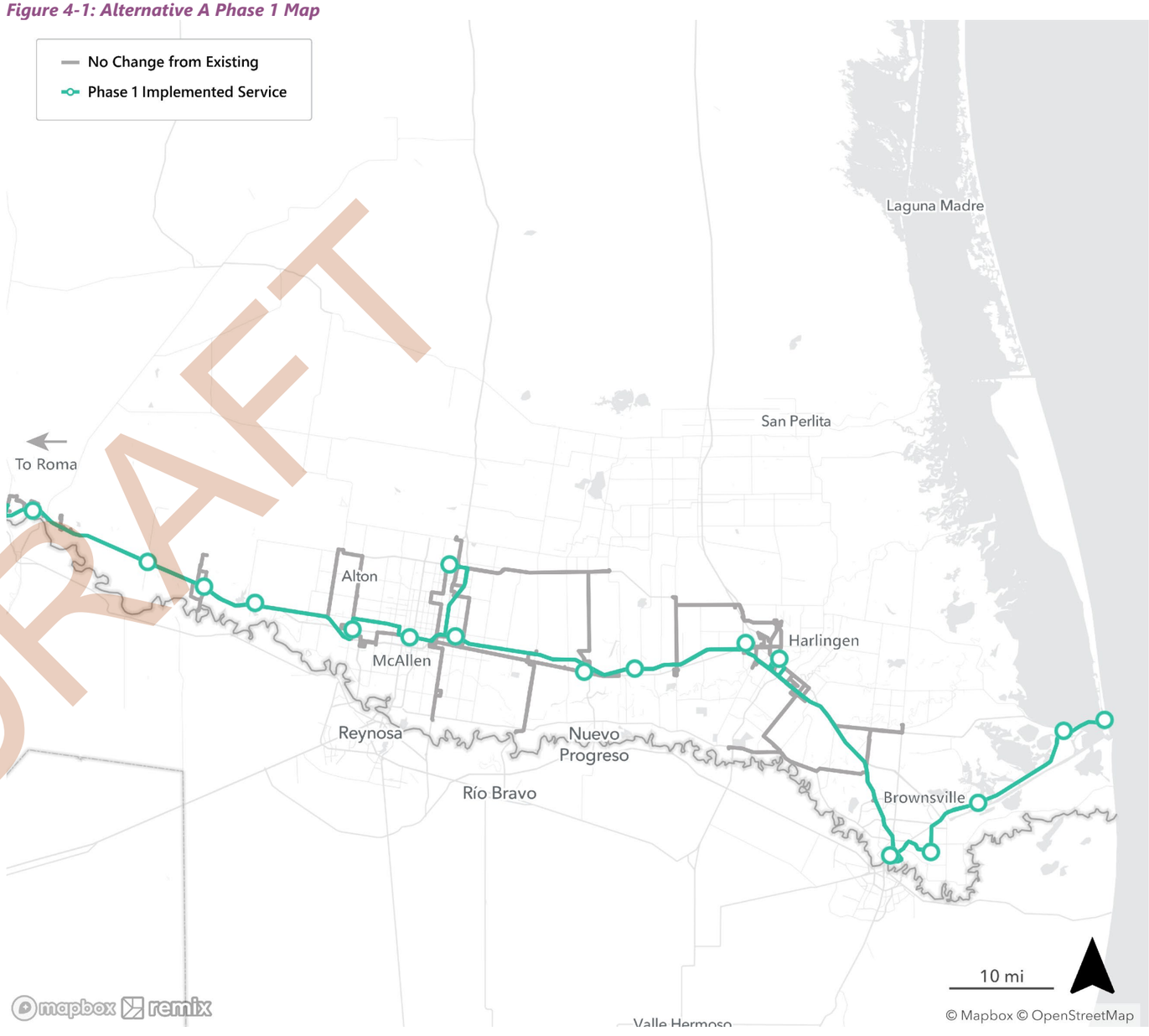
The route or route group prioritization shows that Metro Express 109 UTRGV Connector and the Regional Core routes (Metro Express 100, 101, and 104) are the highest-ranking. They are also affordable to implement, when introduced at service levels similar to existing routes. Therefore, Phase 1 in Alternative A is recommended to maintain the existing Valley Metro service, except for routes that have coverage similar to routes 100, 101, 104, and 109. This means the existing routes: the Red Line, Route 50, Route 60, STC Green Line, UTRGV Campus Connector, and UTRGV Rio Grande City Connector, are recommended for replacement in Phase 1. The configuration for Alternative A - Phase 1 can be found in Table 5. The total cost for these initial 1-2 years is estimated to be around $6,967,930 annually. This is relatively close to existing costs for Valley Metro service, estimated to be around $5,810,000. Coordination with STC and UTRGV allows for an additional $1,179,334 in funding with the replacement of the STC Green Line service, the UTRGV Campus Connector, and the UTRGV Rio Grande City Connector service.

Table 4-5: Alternative A Phase 1

Route*	Annual Miles	Annual Hours	Peak Buses	Cost
Metro Express 100	218,431	5,716	2	$751,307
Metro Express 101	297,780	8,386	3	$1,016,635
Metro Express 104	178,528	6,754	3	$562,868
Metro Express 109	429,831	8,193	3	$717,876
Route 10	51,883	3,410	1	$235,290
Route 12	79,459	2,954	1	$203,809
Route 15	40,549	2,511	1	$173,259
Route 16	58,779	4,246	2	$292,957
Route 20	62,452	3,503	1	$241,707
Route 21	38,748	1,063	1	$77,563
Route 30	59,821	3,488	2	$240,638
Route 31	198,810	7,936	3	$547,584
Route 32	47,425	2,333	2	$160,994
Route 40	46,061	3,468	2	$239,292
Route 41	66,541	3,596	1	$248,124
Route 42	48,792	2,270	2	$156,596
Route 43	55,279	1,938	1	$141,474
Route 44	69,753	2,508	1	$173,018
Route 45	169,077	6,324	3	$436,356
Route 61	44,043	2,465	1	$179,945
Route 62	36,166	2,338	1	$170,638
Phase 1 Total	**2,298,207**	**85,397**	**36**	**$6,967,930**

Routes that are **highlighted in green represent a new route implemented in Phase 1*

Figure 4-1: Alternative A Phase 1 Map



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PHASE 2

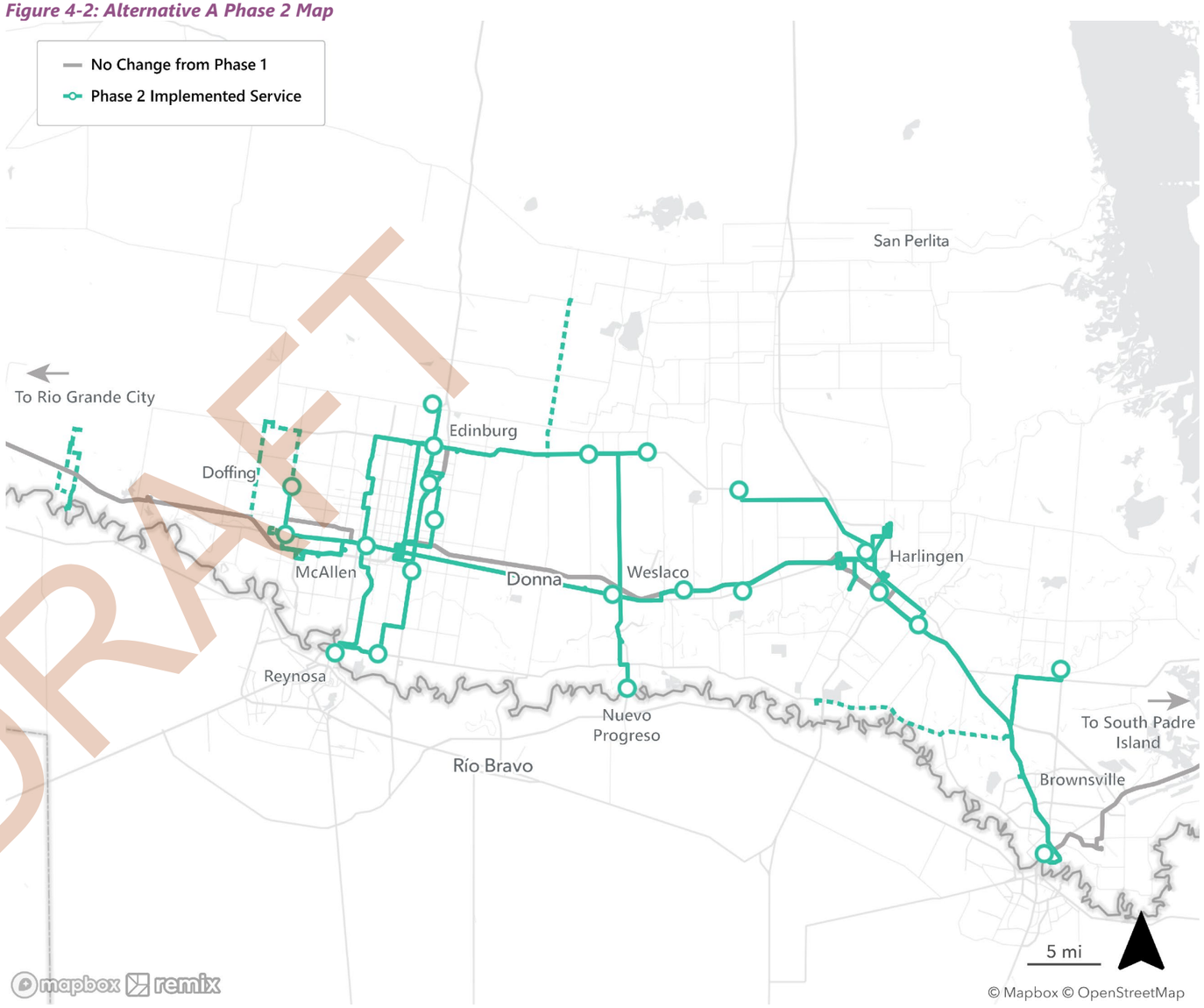
Phase 2 for Alternative A proposes to implement the Valley Metro recommended routes and route groups with close to existing service levels. The configuration for Alternative A - Phase 2 can be found in Table 6. The total cost once fully implemented in the 2-5-year timeframe is estimated to be around $8,209,163 annually, in 2020 dollars. Coordination with STC and UTRGV can provide an additional $878,695 annually with the replacement of the STC Purple Line service and the UTRGV Brownsville to Weslaco, Edinburg to Weslaco, and EVABL, services. The cost of operation for these routes were estimated using service hours and the Valley Metro cost per hour of $69 per hour.

Table 4-6: Alternative A Phase 2

Route*	Annual Miles	Annual Hours	Peak Buses	Cost
Metro Express 100	218,431	5,716	2	$394,436
Metro Express 101	297,780	8,386	3	$578,658
Metro Express 104	178,528	6,754	3	$466,009
Metro Express 107	72,958	3,079	1	$212,460
Metro Express 109	429,831	8,193	3	$565,327
Route 111	408,865	17,901	5	$1,235,140
Route 120	44,043	2,678	2	$195,458
Route 121	36,166	2,550	1	$186,150
Route 130	66,962	3,955	1	$272,883
Route 131	121,809	6,396	2	$441,329
Route 132	51,159	3,581	1	$247,055
Route 133	66,335	4,291	1	$296,091
Route 134	30,917	3,060	1	$211,140
Route 135	32,504	2,532	1	$174,685
Route 136	59,401	3,906	1	$285,138
Route 150	62,353	3,291	1	$240,255
Route 151	80,789	3,906	1	$285,138
Route 160	65,032	4,139	1	$302,167
Route 161	51,487	3,674	1	$253,472
Route 162	53,832	3,978	1	$274,505
Route 163	79,433	4,195	1	$289,478
Route 170	79,634	4,177	1	$304,939
Micro transit	NA	16,575	5	$497,250
Phase 2 Total	**2,588,249**	**126,913**	**37**	**$8,209,163**

Routes that are **highlighted in gray represent routes with no changes from Phase 1*

Figure 4-2: Alternative A Phase 2 Map



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PHASE 3

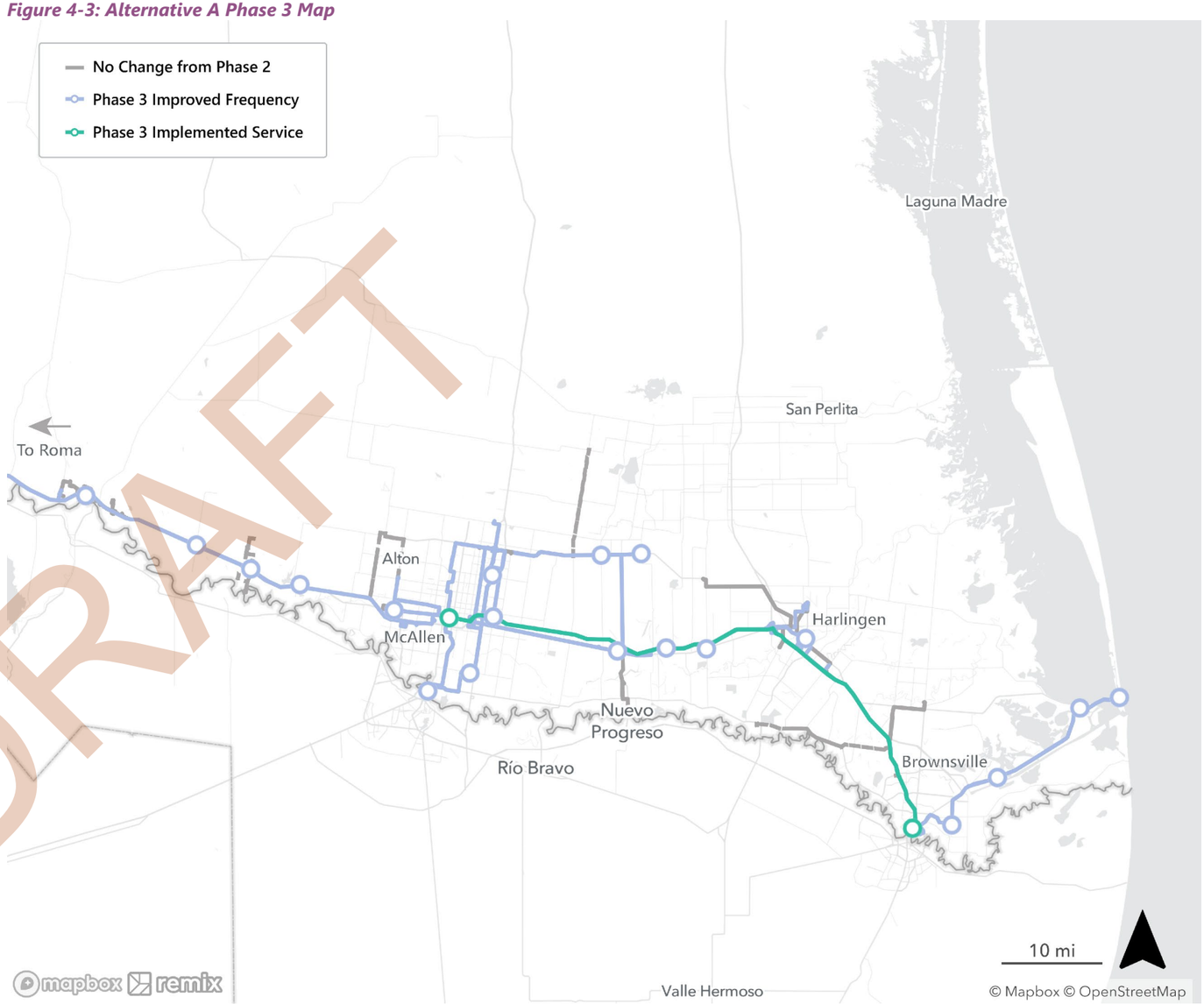
In Phase 3 for Alternative A it is recommended to improve the frequency of service on all of the Valley Metro routes and route groups to bring the services in line with the recommendations set forth in Chapter 3 Regional Service Standards. Also, Phase 3 includes the addition of Metro Express 108, which is a direct service between Brownsville and McAllen. The configuration for Alternative A - Phase 3 can be found in Table 7. The total cost once fully implemented in the 5-10-year timeframe is estimated to be around $12,587,724 annually, in 2020 dollars.

Table 4-7: Alternative A Phase 3

Route*	Annual Miles	Annual Hours	Peak Buses	Cost
Metro Express 100	436,861	11,433	4	$788,872
Metro Express 101	542,728	15,471	4	$1,067,466
Metro Express 104	223,380	8,574	3	$591,637
Metro Express 107	170,236	6,997	2	$482,807
Metro Express 108	213,689	4,061	3	$280,200
Metro Express 109	573,107	10,924	5	$753,770
Route 111	686,923	30,074	8	$2,075,125
Route 120	44,043	2,678	2	$195,458
Route 121	36,166	2,550	1	$186,150
Route 130	133,923	7,910	2	$545,766
Route 131	189,481	9,949	3	$686,512
Route 132	102,317	7,161	2	$494,109
Route 133	132,669	8,582	2	$592,182
Route 134	61,060	6,044	2	$417,002
Route 135	32,504	2,532	1	$174,685
Route 136	89,101	5,859	2	$427,707
Route 150	124,706	6,582	2	$480,510
Route 151	80,789	3,906	1	$285,138
Route 160	65,032	4,139	1	$302,167
Route 161	80,091	5,714	2	$394,289
Route 162	53,832	3,978	1	$274,505
Route 163	79,433	4,195	1	$289,478
Route 170	79,634	4,177	1	$304,939
Micro transit	NA	16,575	5	$497,250
Phase 3 Total	**4,231,706**	**190,066**	**58**	**$12,587,724**

Routes that are **highlighted in gray represent routes with no changes from Phase 2*
Routes that are **highlighted in green represent a new route implemented in Phase 3*

Figure 4-3: Alternative A Phase 3 Map



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Alternative B

Alternative B presents a transit network focused on increasing connectivity and expanding targeted coverage for both population and jobs. Coordinated transfers will play a key role in the success of this alternative and provide an array of travel pattern options. This alternative provides the most service and thus requires a more significant transit investment than alternative A. Alternative B has 34 recommended bus routes: 10 Regional-Express routes, 5 Regional-Urban routes,14 Local routes, and 5 Micro transit routes. Refer to Chapter 4 Recommendations and Alternatives for the details and maps which describe this alternative.

ROUTE GROUPS

As mentioned, there were 6 logical groupings for routes in the RGVMAB which will need to be considered to plan for the implementation of Alternative B. There are 10 routes which were not grouped for implementation. The route groupings for Alternative B can be found in Table 8 (immediately to the right). Highlighted cells represent routes that require some additional coordination for implementation with routes outside their group, or with another transit agency. See Table 9 below for details.

Table 4-9: Alternative B Additional Route Coordination

Route or Group	Coordination
Metro Express 100	Coordination with South Texas College (STC) on consolidation of the Green Line
Metro Express 109	Coordination with University of Texas at Rio Grande Valley (UTRGV) on consolidation of the Campus Connector
Route 111	Takes a portion of existing local services in Harlingen and along Route 170 (known as Route 45 for existing)
Route 131	Requires coordination with Metro McAllen as it largely runs in the City of McAllen
Route 130	Requires the availability of Micro transit service as a part of the route, in Mission, is recommended to be converted to on-demand service
Route 132	Requires coordination with Metro McAllen to ensure adequate service to the major medical centers on McColl & Dove, and McColl & Trenton.
Harlingen: 160N, 160S, 161, 162, 163	Requires coordination with the implementation of Route 111 to avoid gaps in services.
Route 170	Requires coordination with the implementation of Route 111 to avoid gaps in services.

Table 4-8: Alternative B Route Groups

Route Class	Route Name*	Regional Core	Harlingen	Edinburg	Weslaco	Rio Grande City	Micro transit	No Group
Regional Express	Metro Express 100	**100**						
	Metro Express 101	**101**						
	Metro Express 102	**102**						
	Metro Express 103	**103**						
	Metro Express 104	**104**						
	Metro Express 105							**105**
	Metro Express 106							**106**
	Metro Express 107			**107**				
	Metro Express 108							**108**
	Metro Express 109							**109**
Regional Urban	Route 111							**111**
	Route 131							**131**
	Route 136				**136**			
	Route 150				**150**			
	Route 151				**151**			
Local Urban	Route 130							**130**
	Route 132			**132**				
	Route 133N			**133N**				
	Route 133S			**133S**				
	Route 134							**134**
	Route 135							**135**
	Route 161		**161**					
	Route 162		**162**					
	Route 163		**163**					
Local Rural	Route 120					**120**		
	Route 121					**121**		
	Route 160N		**160N**					
	Route 160S		**160S**					
	Route 170							**170**
Micro transit	Route 190						**190**	
	Route 191						**191**	
	Route 192						**192**	
	Route 193						**193**	
	Route 194						**194**	

Routes that are **highlighted represent routes with additional coordination required for implementation, see Table 8*

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PRIORITIZATION

Table 10 shows the final prioritization results for Alternative B. It is important to note that these prioritization scores and subsequent rankings are representative of potential demand, service to key locations and existing markets, and transit serving disadvantaged populations. However, there may be other considerations that impact the ability to implement service throughout the phased implementation plan including regional coordination with other providers, availability of micro transit technology, and availability of funding. For Phase 1, this prioritization can be used to select routes to roll out. In Phase 2, this prioritization should guide what services to prioritize when rolling out new services. Finally, using this prioritization in Phase 3 should guide the implementation of adding more frequency on routes.

Table 4-10: Alternative A Prioritization Results

Route/Group	Propensity Score	Target Riders Score	Ridership Score	Final Score	Rank
Metro Express 109	3	6	2	11	1
Regional Core: 100, 101, 102, 103, 104	6	5	1	12	2
Metro Express 105	1	3	10	14	3
Metro Express 108	2	1	14	17	4
Edinburg: 107, 132, 133N, 133S	8	12	3	23	5
Route 134	5	11	7	23	6
Route 111	11	8	4	23	7
Weslaco: 136, 150, 151	12	7	5	24	8
Route 131	7	14	6	27	9
Route 130	9	10	9	28	10
Harlingen: 160N, 160S, 161, 162, 163	10	13	8	31	11
Route 135	4	15	13	32	12
Rio Grande City: 120, 121	15	2	15.5	32.5	13
Route 170	13	9	12	34	14
Micro transit: 190, 191, 192, 193, 194	16	4	15.5	35.5	15
Metro Express 106	14	16	11	41	16

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BUSES AND AMENITIES

Alternative B will require the acquisition of new vehicles with the additional services, as well as bus stops as Valley Metro transitions to a fixed route system. These estimated costs are a one-time fee, and therefore are not included in the estimation of the annual costs for each phase. The costs are estimated in 2020 dollars. Finally, the initial startup fee for the software to run Micro transit or on-demand pickup services. The initial startup fee for the software required to run Micro transit or on-demand pickup services is a one-time fee of approximately $25,000 for the service and $6,000 per zone.

Table 4-11: Alternative A Cost for Buses and Bus Stops

Phase	New buses	New Cutaways	New Bus Stops	Micro transit software	Cost Estimate
Phase 1	6	-	-		$2,400,000
Phase 2	5	-	-	1	$2,055,000
Phase 3	21	5	1,264	-	$8,994,800

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PHASE 1

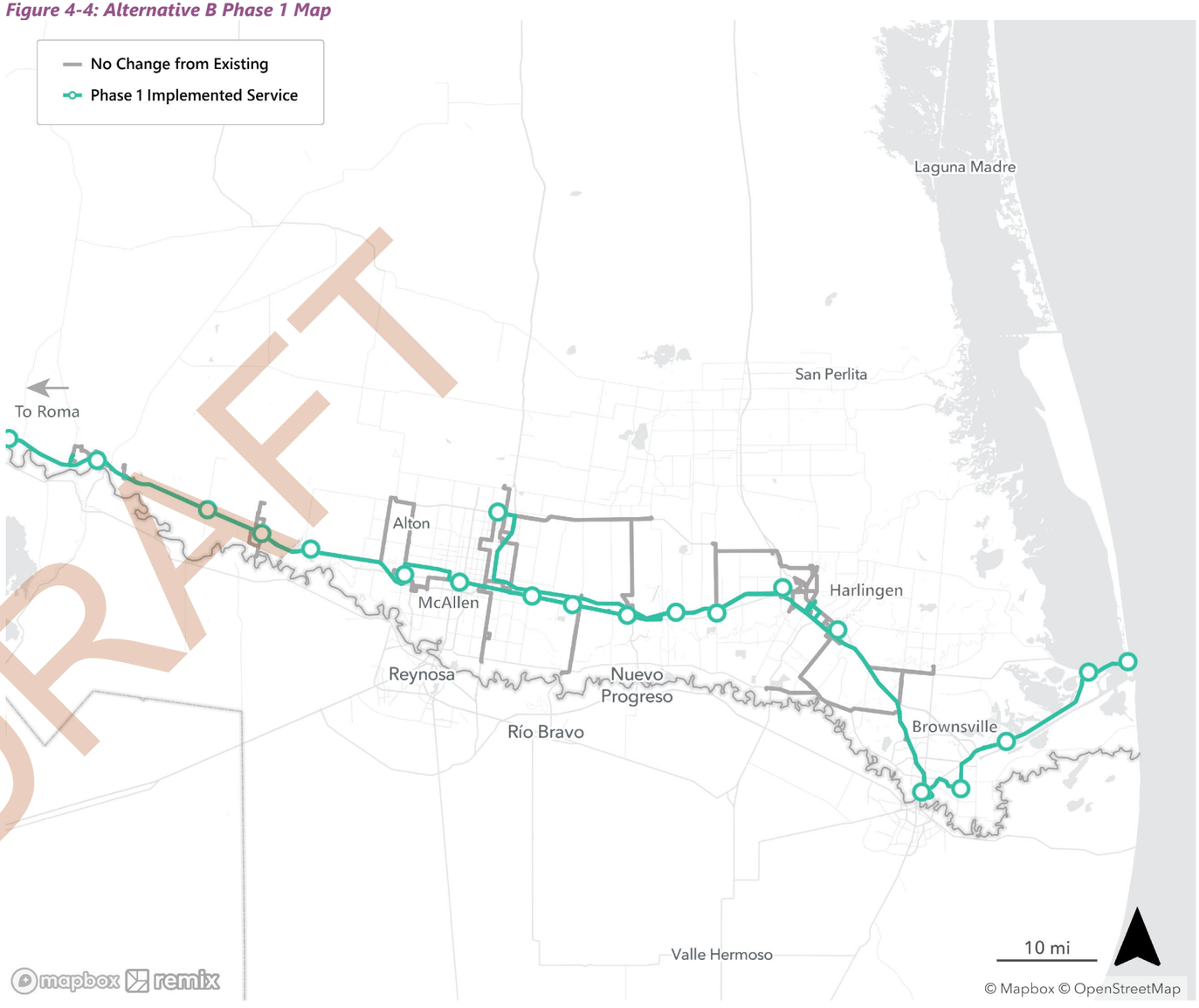
The route or route group prioritization shows that Metro Express 109 UTRGV Connector and the Regional Core routes (Metro Express 100, 101, 102, 103, and 104) are the highest ranking. They are also affordable to implement, when introduced at service levels similar to existing routes. In Alternative B in Phase 1, existing Valley Metro service should be maintained, except for the replacement of the Red Line, Route 50, Route 60, STC Green Line, UTRGV Campus Connector, and UTRGV Rio Grande City Connector. Alternative B - Phase 1 can be found in Table 12. The total cost for these initial 1-2 years is estimated to be around $6,881,283. This is relatively close to existing costs for Valley Metro service, estimated around $5,810,000 annually. Coordination with STC and UTRGV would make an additional $1,179,334 available.

Table 4-12: Alternative B Phase 1

Route*	Annual Miles	Annual Hours	Peak Buses	Cost
Metro Express 100	218,431	5,716	2	$751,307
Metro Express 101	154,189	4,131	1	$260,096
Metro Express 102	169,474	4,123	1	$259,532
Metro Express 103	268,293	6,286	2	$410,360
Metro Express 104	178,528	6,754	3	$562,868
Metro Express 109	429,831	8,193	3	$717,876
Route 10	51,883	3,410	1	$235,290
Route 12	79,459	2,954	1	$203,809
Route 15	40,549	2,511	1	$173,259
Route 16	58,779	4,246	2	$292,957
Route 20	62,452	3,503	1	$241,707
Route 21	38,748	1,063	1	$77,563
Route 30	59,821	3,488	2	$240,638
Route 31	198,810	7,936	3	$547,584
Route 32	47,425	2,333	2	$160,994
Route 40	46,061	3,468	2	$239,292
Route 41	66,541	3,596	1	$248,124
Route 42	48,792	2,270	2	$156,596
Route 43	55,279	1,938	1	$141,474
Route 44	69,753	2,508	1	$173,018
Route 45	169,077	6,324	3	$436,356
Route 61	44,043	2,465	1	$179,945
Route 62	36,166	2,338	1	$170,638
Phase 1 Total	**2,592,383**	**91,551**	**36**	**$6,881,283**

Routes that are **highlighted in green represent a new route implemented in Phase 1*

Figure 4-4: Alternative B Phase 1 Map



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PHASE 2

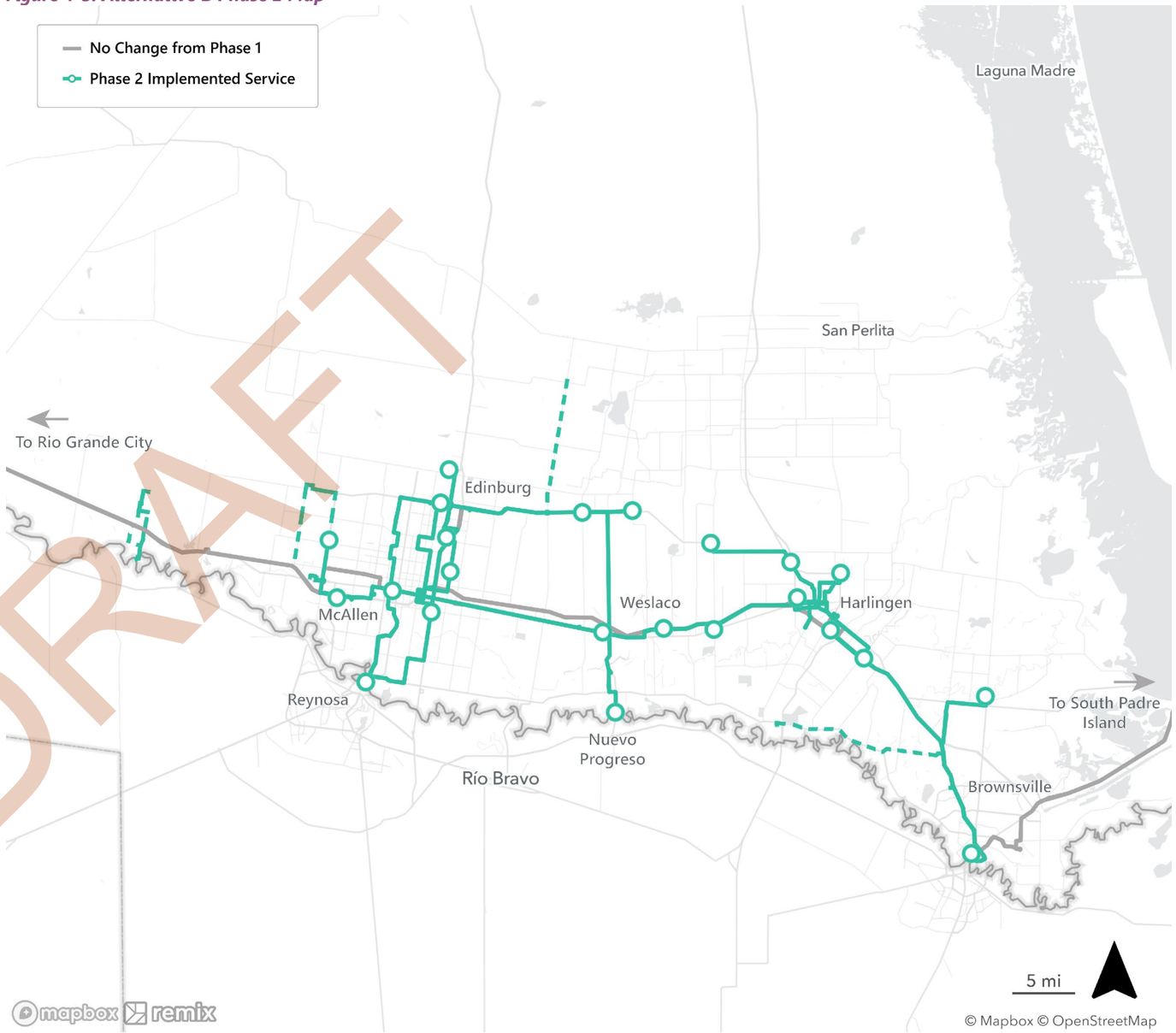
In Phase 2 for Alternative B it is recommended to implement the Valley Metro recommended routes and route groups with close to existing service levels. The configuration for Alternative B - Phase 2 can be found in Table 13. The total cost once fully implemented in the 2-5-year timeframe is estimated to be around $8,903,338. Coordination with STC and UTRGV can provide an additional $878,695 per year.

Table 4-13: Alternative B Phase 2

Route*	Annual Miles	Annual Hours	Peak Buses	Cost
Metro Express 100	218,431	5,716	2	$394,436
Metro Express 101	154,189	4,131	1	$285,051
Metro Express 102	169,474	4,123	1	$284,487
Metro Express 103	268,293	6,286	2	$433,734
Metro Express 104	178,528	6,754	3	$466,009
Metro Express 107	72,972	3,079	1	$212,460
Metro Express 109	429,831	8,193	3	$565,327
Route 111	376,881	16,513	5	$1,139,367
Route 120	44,043	2,678	2	$195,458
Route 121	36,166	2,550	1	$186,150
Route 130	77,145	4,556	1	$314,381
Route 131	118,160	6,201	2	$427,853
Route 132	60,530	4,215	1	$290,851
Route 133N	14,796	1,121	1	$77,361
Route 133S	51,831	3,400	1	$234,577
Route 134	21,182	2,210	1	$152,490
Route 135	79,492	5,772	1	$398,280
Route 136	59,401	3,906	1	$285,138
Route 150	62,353	3,291	1	$240,255
Route 151	80,789	3,906	1	$285,138
Route 160N	58,832	3,763	1	$274,709
Route 160S	32,957	2,604	1	$190,092
Route 161	52,560	3,767	1	$259,889
Route 162	44,372	3,162	1	$218,178
Route 163	79,433	4,195	1	$289,478
Route 170	79,634	4,177	1	$304,939
Micro transit	NA	16,575	5	$497,250
Phase 2 Total	**2,922,275**	**136,844**	**41**	**$8,903,338**

Routes that are **highlighted in gray represent routes with no changes from Phase 1*

Figure 4-5: Alternative B Phase 2 Map



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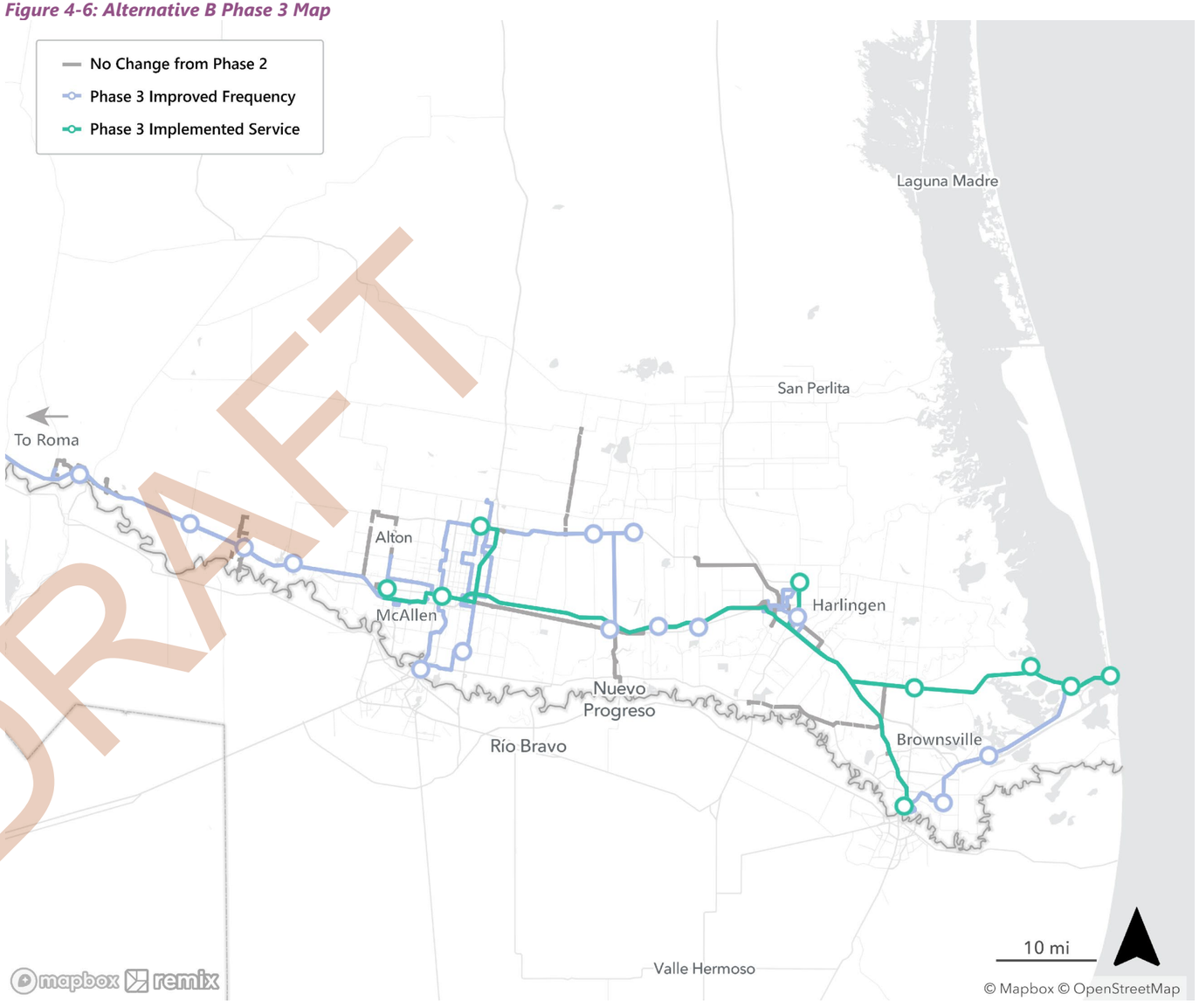
PHASE 3

In Phase 3 for Alternative B frequency improvements should be made on all routes. Also, Metro Express 105, 106 and 108 will be implemented. Alternative B - Phase 3 can be found in Table 14, with the total cost around $14,010,006 annually.

Table 4-14: Alternative B Phase 3

Route*	Annual Miles	Annual Hours	Peak Buses	Cost
Metro Express 100	436,861	11,433	4	$788,872
Metro Express 101	154,189	4,131	1	$285,051
Metro Express 102	169,474	4,123	1	$284,487
Metro Express 103	268,293	6,286	2	$433,734
Metro Express 104	223,380	8,574	3	$591,637
Metro Express 105	151,055	7,934	3	$547,468
Metro Express 106	314,798	8,309	3	$573,333
Metro Express 107	170,267	6,997	2	$482,807
Metro Express 108	213,689	4,061	3	$280,200
Metro Express 109	573,107	10,924	5	$753,770
Route 111	633,188	27,742	7	$1,914,220
Route 120	44,043	2,678	2	$195,458
Route 121	36,166	2,550	1	$186,150
Route 130	154,289	9,113	2	$628,763
Route 131	183,805	9,646	3	$665,550
Route 132	121,060	8,430	2	$581,701
Route 133N	29,591	2,242	1	$154,721
Route 133S	103,663	6,799	2	$469,154
Route 134	41,833	4,365	2	$301,168
Route 135	79,492	5,772	1	$398,280
Route 136	89,101	5,859	2	$427,707
Route 150	124,706	6,582	2	$480,510
Route 151	80,789	3,906	1	$285,138
Route 160N	58,832	3,763	1	$274,709
Route 160S	32,957	2,604	1	$190,092
Route 161	81,760	5,859	2	$404,271
Route 162	69,023	4,919	2	$339,388
Route 163	79,433	4,195	1	$289,478
Route 170	79,634	4,177	1	$304,939
Micro transit	NA	16,575	5	$497,250
Phase 3 Total	**4,798,478**	**210,548**	**67**	**$14,010,006**

Figure 4-6: Alternative B Phase 3 Map



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Routes that are **highlighted in gray represent routes with no changes from Phase 2*
Routes that are **highlighted in green represent a new route implemented in Phase 3*

Conclusion

This phased implementation plan will serve as a guide and a tool for the region to use as it expands and improves transit service delivery. This tool is intended to be adaptable and Valley Metro should move forward expanding transit where opportunities arise through coordination, partnerships, and strategic funding initiatives. The success of this Implementation Plan is dependent on using it in coordination with the Regional Service Standards and the subsequent Transit Investment Chapter. Without identifying a dedicated local funding source, the plan cannot be implemented in its entirety.

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5 TRANSIT INVESTMENT

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As the transit providers in the RGVMAB move forward to implement the recommendations described in this plan, it is important to identify additional funding opportunities. This chapter reviews current and potential funding sources for transit that can supplement Federal and State grants and offset increased operating and capital costs that will accompany service expansion and improvement.

INTRODUCTION

Transit in the RGVMAB is funded through a variety of sources. Valley Metro is currently operated by the Lower Rio Grande Valley Development Council (LRGVDC), which receives funding from the Federal Transit Administration (FTA) to operate service and uses the maximum allowable amount of the funding available for operating expenses. The project team identified and evaluated potential additional sources of revenue that can supplement FTA funding and help grow the transit program in the future.

As Valley Metro moves forward to implement recommendations from this plan, it is necessary to identify and secure predictable and sustainable local funding sources. This section describes sources that are available in the region and can be used to fund transit.

EXISTING FUNDING

There are many funding sources used to maintain the operations of transit in the RGVMAB. The following section describes the sources and uses of funding that the transit agencies in the region receive annually.

LRGVDC Funding Sources

Federal Formula Grants

The LRGVDC is the recipient of FTA funding for both the urban and rural portions of their service area. FTA 5307 funding, known as the Urbanized Area Formula Grant Program, allocates funding to the McAllen and Harlingen Urbanized Areas.

MCALLEN URBANIZED AREA 5307 FUNDING

The McAllen Urbanized Area has a population of over 200,000. This and the fact that the fleet during peak hours is fewer than 75 vehicles mean that the percentage of 5307 Formula federal funding that can be used for operating assistance under current FTA rules is 75% of the total allocation. The remaining 25% can be used for administration of the program (up to 10%) and for capital projects.

Both the LRGVDC and the City of McAllen operate transit service within the McAllen Urbanized Area through Valley Metro and Metro McAllen, respectively. These two agencies share the FTA allocation. Currently, the allocation is shared equally between the two organizations, with each agency drawing down 50% of the FTA funding. The 2020 FTA grant for the LRGVDC in the McAllen Urbanized Area is shown in Table 1. The calculations in Table 1 assume the current practice of using as much funding as possible for operating assistance.

Table 5-1: Federal Funding Allocation and Distribution for Valley Metro, McAllen Urbanized Area

Total Federal Allocation to Valley Metro	Operating Assistance		Capital Assistance	
	Federal Amount Eligible (75%)	Needed Local & State Match	Federal Amount Remaining	Needed Local Match
$3,565,185	$2,673,889	$2,673,889*	$891,296	$222,824

**State funding accounts for $301,522 of the 2020 local match for operating assistance*

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HARLINGEN URBANIZED AREA 5307 FUNDING

The LRGVDC receives the entire 5307 Formula allocation for the Harlingen Urbanized Area. Because the Harlingen Urbanized Area is classified as a small Urbanized Area, the agency is allowed to use 100% of the federal allocation for operating assistance. The 2020 FTA allocation for the Harlingen Urbanized Area is shown in Table 2. The calculations in Table 2 assume the current practice of using as much funding as possible for operating assistance.

Table 5-2: Federal Funding Allocation and Distribution for Valley Metro, Harlingen Urbanized Area

Total Federal Allocation to Valley Metro	*Operating Assistance*		*Capital Assistance*	
	Federal Amount Eligible (75%)	Needed Local & State Match	Federal Amount Remaining	Needed Local Match
$2,152,283	$2,152,283	$2,152,283	$0	$0

**State funding accounts for $384,146 of the local match for operating assistance*

Since 2015, the Harlingen Urbanized Area has seen a growth of $184,214 in the 5307 Formula grant. The allocation has increased from $1,968,069 in 2015 to $2,152,283 in 2020, with an average growth of $15,351.17 per year. The region can assume a continued limited growth in the program in the future, with the entirety of the funding going to the LRGVDC.

FUTURE 5307 FUNDING CONSIDERATIONS

The boundaries of Urbanized Areas are adjusted after each decennial Census. Given the growth in the region since 2010, it is possible that the several Urbanized Areas in the RGVMAB – McAllen, Harlingen, and Brownsville – could be merged in the future. If these Urbanized Areas are consolidated, the amount of federal funding able to be put toward operating assistance, as opposed to capital projects and administration, may be reduced. The percentage of federal funding that a transit provider is allowed to put toward operating expenses is based on the total vehicles used during peak hours. As the number of vehicles increases, the portion of FTA funding that can be used for operating costs decreases.

For example, as long as the three UZA's remain separate, the number of peak vehicles needed to implement Phase 3 alternatives for Valley Metro falls slightly under the threshold of '75 or fewer buses,' which means that 75% of the federal share of funding could be used for operating support. Additionally, Harlingen is currently classified as a small Urbanized Area, which can use 100% of their federal funding for operating support.

However, if the three UZA's were consolidated, including McAllen and Brownsville fleets in the total number of peak vehicles would place the total number of vehicles in peak service in the category of '75-100 buses.' This peak service fleet size would reduce the allowable percentage to 50%. If the peak vehicles in service rose to '101 or more buses,' the allowable percentage available for operating costs falls to 0%.

NON-URBANIZED AREA 5311 FUNDING

The LRGVDC receives federal funding for the non-urbanized portions of its service area from the Texas Department of Transportation (TxDOT) through the FTA Section 5311 Program, Formula Grants for Rural Areas. Valley Metro competes with 38 other rural transit providers in Texas to receive funding through this

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program, which is allocated based on budgets submitted by agencies. In 2020, Valley Metro received a $773,421 grant from the TxDOT 5311 program for operating assistance.

In addition to the funding provided through the general 5311 program, TxDOT also grants funding for intercity bus projects. These projects are intended to support access and connections to the national intercity bus network in rural areas. Funding for this program is awarded biannually through a discretionary call for projects. Currently, the LRGVDC uses intercity bus funding to operate regional Valley Metro bus services.

5310 PROGRAM FUNDING

The LRGVDC receives FTA Section 5310 Program funds, Enhanced Mobility of Seniors and People with Disabilities, from the FTA for urbanized areas and through TxDOT for rural areas. In urbanized areas, Valley Metro participates in a regional call to select 5310 projects. In the rural areas, Valley Metro competes in a statewide call for projects. Awarded projects include contracted operations, mobility management, and fleet purchases.

State and Local Funding

TXDOT

Valley Metro receives both State Urban and State Rural grant funding that can be used for federal funding local match as well as additional operating, capital, administration, and planning expenses. TxDOT grants these funds according to a formula. State funding is split, with 65% allocated to rural transit districts and 35% allocated to state-funded urban transit districts.

The LRGVDC receives formula-based funding for both the Harlingen and McAllen Urbanized Areas. Like the FTA 5307 Formula funding, Valley Metro splits the McAllen State Urban grant equally with the City of McAllen. The LRGVDC receives a formula-based allocation for the non-urbanized service area under the State Rural program.

TOLL DEVELOPMENT CREDITS

Toll Development Credits (TDCs) are accrued when capital investments are made in federally approved toll facilities. TDCs are generally used to meet federal matching share requirements. The benefit of TDCs is that they are credits already being accrued by TxDOT's investment in toll facilities. This allows agencies to leverage federal funding at a higher level (up to 100% federal funding).

In Texas, 75% of the TDCs accrued are allocated to the MPO in the region where the toll is collected. The remaining 25% is allocated on a statewide competitive basis. The LRGVDC currently receives TDC allocations through the statewide competitive program. However, because there are toll facilities within the region, it is possible that the region could be eligible to participate in the MPO accrual program. The Cameron County Regional Mobility Authority has many corridors between Brownsville and Harlingen in operation or under construction. Being able to use 75% of the TDCs from the investments in these corridors would provide a consistent distribution of TDCs annually and allow the region to leverage federal funds at a higher rate. This is especially important for the purchase of fleet and facilities for transit because most of the FTA grants are currently being used for operating expenses.

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LOCAL FUNDING

According to the 2018 National Transit Database report for the LRGVDC, the agency spent $1,741,959 in local funds for transit operations, which equaled 25.1% of their total expenditure on operations. This funding was a mixture of contract revenue and funding from local governments.

Other Transit Agencies in the Region

The other transit agencies that operate in the RGVMAB receive funding from a combination of federal and state sources as well.

City of Brownsville

The City of Brownsville's transit program, Brownsville Metro, receives funding directly from FTA through the 5307 Formula program. In 2020, the allocation to the Brownsville Urbanized Area was $2,686,492. The agency also receives State Urban grant funding to match the FTA allocation and has received intercity bus program funding in previous years.

South Texas College

South Texas College (STC) has a contract with Valley Metro in which STC operates the JagExpress Yellow Line and Park and Ride routes with federally funded vehicles and Valley Metro reimburses STC 50% of the operation and 80% of the maintenance. The current funding year contract is $429,470. Valley Metro operates other routes in the region that serve the STC population, the JagExpress Green and the Purple Lines.

University of Texas Rio Grande Valley

The University of Texas Rio Grande Valley (UTRGV) and Valley Metro have a contractual relationship to transport students, faculty, staff, and guests, improve mobility and accessibility to education and employment, and to connect remote parking areas on campus. Stipulated in this contract, Valley Metro leases federally funded vehicles to UTRGV, conducts maintenance on these vehicles, and claims the ridership for the service operated on these vehicles. In turn, the University pays Valley Metro the local match on the purchase of federal funded vehicles and maintenance and Valley Metro pays the University the local match for operations. The current year contract between Valley Metro and UTRGV is $387,107 for operations and $17,025 for maintenance.

POTENTIAL FUNDING SOURCES

In order to offset the cost of service enhancements and investments identified in this plan, it is necessary for Valley Metro to identify and secure additional funding sources. The following section describes funding sources that should be considered to finance the operations of additional transit service.

Contract Revenue

Contracts are funding agreements between the transit agency and another organization to provide transportation services. The organization, which may be a local government, a non-profit organization, an employer, or a university, pay the provider on behalf of their clients. This means that the contract revenue

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is not considered fare revenue, and therefore does not offset federal funding. Contracts include revenues from regularly provided transit service, which differentiate this type of revenue from charter service.

Student Transportation Fees

Valley Metro currently has a contractual relationship with both UTRGV and South Texas College. Currently, this service is funded by the LRGVDC FTA grant and university general revenues, including a designated portion of student tuition fees. For a consistent revenue source, a student fee could be leveraged for transit.

For example, a university of similar size to UTRGV would have a fall 2020 enrollment of 32,000, with the average student taking 20 credit hours during the academic year (fall and spring semesters). At one dollar per credit hour, a student transportation fund would generate $640,067 that year, allowing for growth in service to the university and surrounding community.

Regional Transit Authorities and Similar Organizations

The state of Texas allows Regional Transit Authorities (RTAs), city transit departments (CTDs), county transit authorities (CTA) and advanced transit districts (ATD) to impose a sales and use tax. There are currently ten agencies that have state and local approval to levy transit sales and use tax.

In 2019, the 86th Texas Legislature passed House Bill 71, which enables the creation of a regional transit authority for "(1) a county that is contiguous to the Gulf of Mexico or a bay or inlet opening into the gulf and that borders the United Mexican States; and (2) a county that borders a county described by subdivision (1)."[1] If the region created a Regional Transit Authority, the organization could form a board of directors and evaluate revenue generation through taxation.

Bridge Crossing Revenues

In addition to enabling he creation of a Regional Transit Authority, HB 71 identified the following parameters for toll bridges as a financing mechanism (in addition to existing tolls):

- Not more than $1 for passenger vehicles
- Not more than $2 for commercial motor vehicles
- Not more than $0.25 for pedestrians

In order to collect this fee, the bridge operator must have a written agreement with the transit authority that identifies the strategy for collection and remittance. Additional fees that are collected must be distributed as follows:

- 25% to the Regional Transit Authority for transportation projects and complementary transportation services
- 50% for a rail mass transit system
- 25% for regional high capacity transit

[1] Texas House Bill 71. 5-25-19. https://legiscan.com/TX/text/HB71/id/2015682/Texas-2019-HB71-Enrolled.html.

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There are nine border crossing bridges in the Rio Grande Valley. Each of these bridges generates revenue through tolls and is owned and operated by either a municipal unit or a private company. Table 3 identifies the bridges in the study area, their ownership, and their current toll.

Table 5-3: Current Texas-Mexico Internal Bridges and Border Crossings in the Rio Grande Valley[2]

Name	Ownership	Current Toll
Anzaldúas International Bridge	Cities of Hidalgo, McAllen, and Mission	$3.00 – passenger vehicles $1.00 – pedestrians $3.00 – motorcycles $7.00 – 2-axle buses $9.00 – 3-axle buses $3.00 per axle – motorhomes, machinery, trailers
McAllen-Hidalgo International Bridge	City of McAllen	$3.50 – passenger vehicles $1.00 – pedestrians $7.00 – 2-axle commercial vehicles $9.00 – 3-axle commercial vehicles $16.75 – 4-axle commercial vehicles $21.75 – 5-axle commercial vehicles $24.75 – 6-axle commercial vehicles $3.50 – motorcycles $7.00 – 2-axle buses $9.00 – 3-axle buses
Pharr-Reynosa Bridge on the Rise	City of Pharr	$3.50 – passenger vehicles $11.25 – 2-axle commercial vehicles $15.25 – 3-axle commercial vehicles $17.25 – 4-axle commercial vehicles $22.25 – 5-axle commercial vehicles $25.25 – 6-axle commercial vehicles
Donna International Bridge	City of Donna	$3.50 – passenger vehicles $0.50 – pedestrians $20.00 – recreational vehicles
Weslaco-Progreso International Bridge	B&P Bridge Company of Weslaco	$3.00 – passenger vehicles $0.50 – pedestrians
Free Trade Bridge	Cameron County (50%), City of San Benito (25%), City of Harlingen (25%) (Operated by Cameron County International Bridge System)	$3.25 – passenger vehicles $1.00 – pedestrians $8.50 – 2-axle commercial vehicles $3.50 per axle for commercial vehicles

[2] Texas Department of Transportation Freight and Trade Section. Texas-Mexico International Bridges and Border Crossings. Texas Department of Transportation, 2015. https://ftp.txdot.gov/pub/txdot-info/iro/international-bridges.pdf.

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Name	Ownership	Current Toll
B&M Bridge	Brownsville & Matamoros Bridge Company	$3.00 – passenger vehicles $1.00 – pedestrians
Gateway International Bridge	Cameron County (Operated by Cameron County International Bridge System)	$3.25 – passenger vehicles $1.00 – pedestrians
Veterans International Bridge at Los Tomates	Cameron County and City of Brownsville (Operated by Cameron County International Bridge System)	$3.50 – passenger vehicles $1.00 – pedestrians $8.50 – 2-axle commercial vehicles $3.50 per axle for commercial vehicles

FUNDING RECOMMENDATIONS

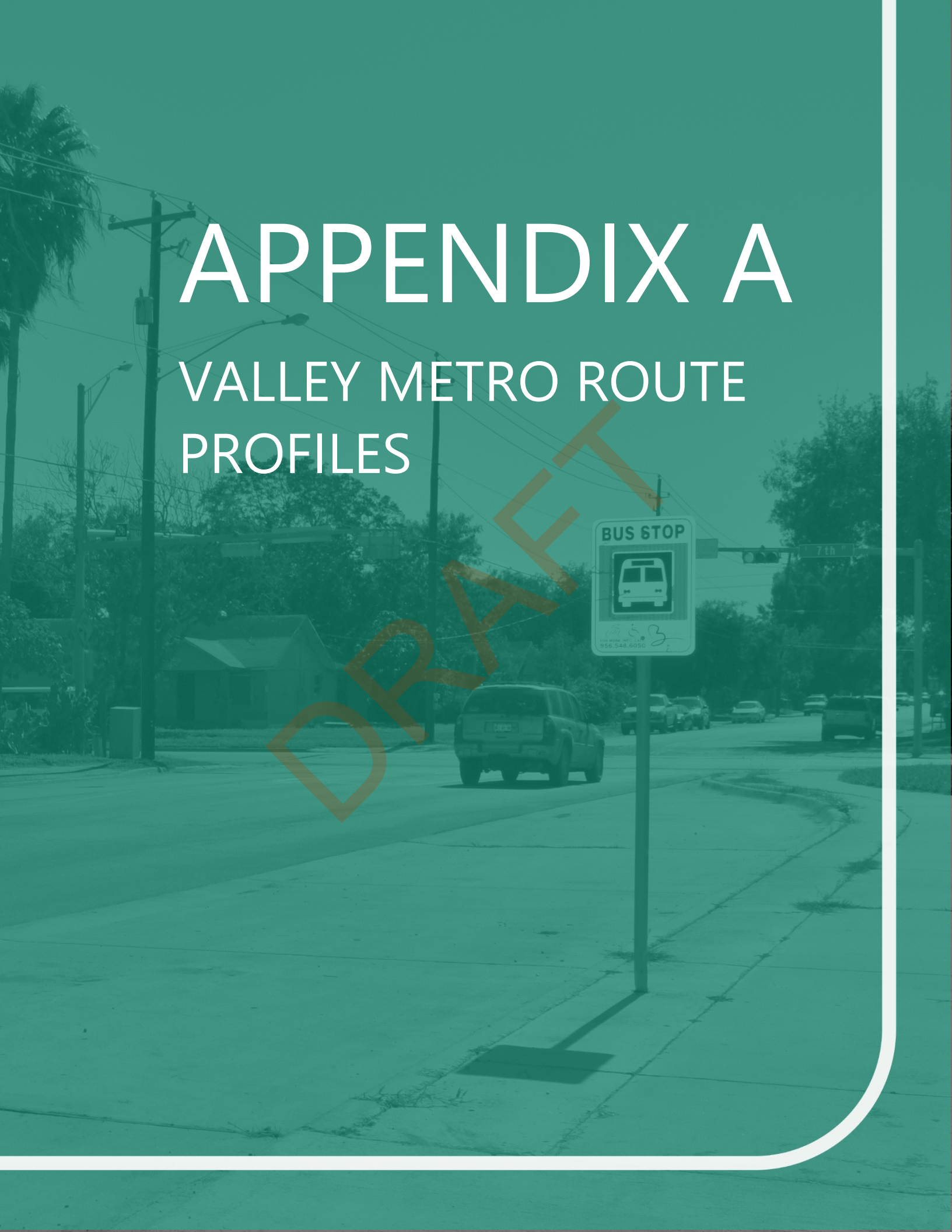
In order to implement this plan over the next ten years, it is essential that additional local funding be secured to supplement federal and state sources. The most viable path forward is to implement the Regional Transit Authority with the financing tool of additional bridge tolls at as many of the region's bridges as possible. Because many of the bridges experience more than 1,000,000 passenger vehicle crossings per year, increasing tolls at just one of these bridges would bring $250,000 annually, given that 25% of the revenue would go to the regional transit authority for transportation projects and complementary transportation services. In this same example, an additional $500,000 would be available for rail mass transit and $250,000 for regional high capacity transit such as Bus Rapid Transit (BRT). Strategy development for implementation should begin as soon as possible, because it may require multiple years before revenue can be generated.

In order to generate revenue for the Phase 2 investments, it is recommended that Valley Metro work with UTRGV and South Texas College to implement student fees related to transit. Enhancements of projects that directly support the two universities can be timed to these investments. Additionally, Valley Metro should identify and evaluate other potential service contract opportunities within the region to make up the balance between existing funding and Phase 2 costs.

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APPENDIX A

VALLEY METRO ROUTE PROFILES



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RED LINE

VALLEY METRO

ROUTE DETAILS

The Red Line is a commuter route connecting major cities in the Rio Grande Valley, spanning from Brownsville through Weslaco to McAllen. It operates Monday-Sunday from 6:30am to 9:00pm.

KEY DESTINATIONS

CONNECTION

UTRGV Edinburg Campus
Central Station McAllen
Harlingen Bus Terminal
La Plaza Brownsville Multimodal Terminal

SCHOOL

UTRGV Edinburg Campus
Edinburg North High School
IDEA Edinburg College Prep
Dr Abraham Cano Freshman Academy
Harlingen HS South
UTRGV Brownsville Campus

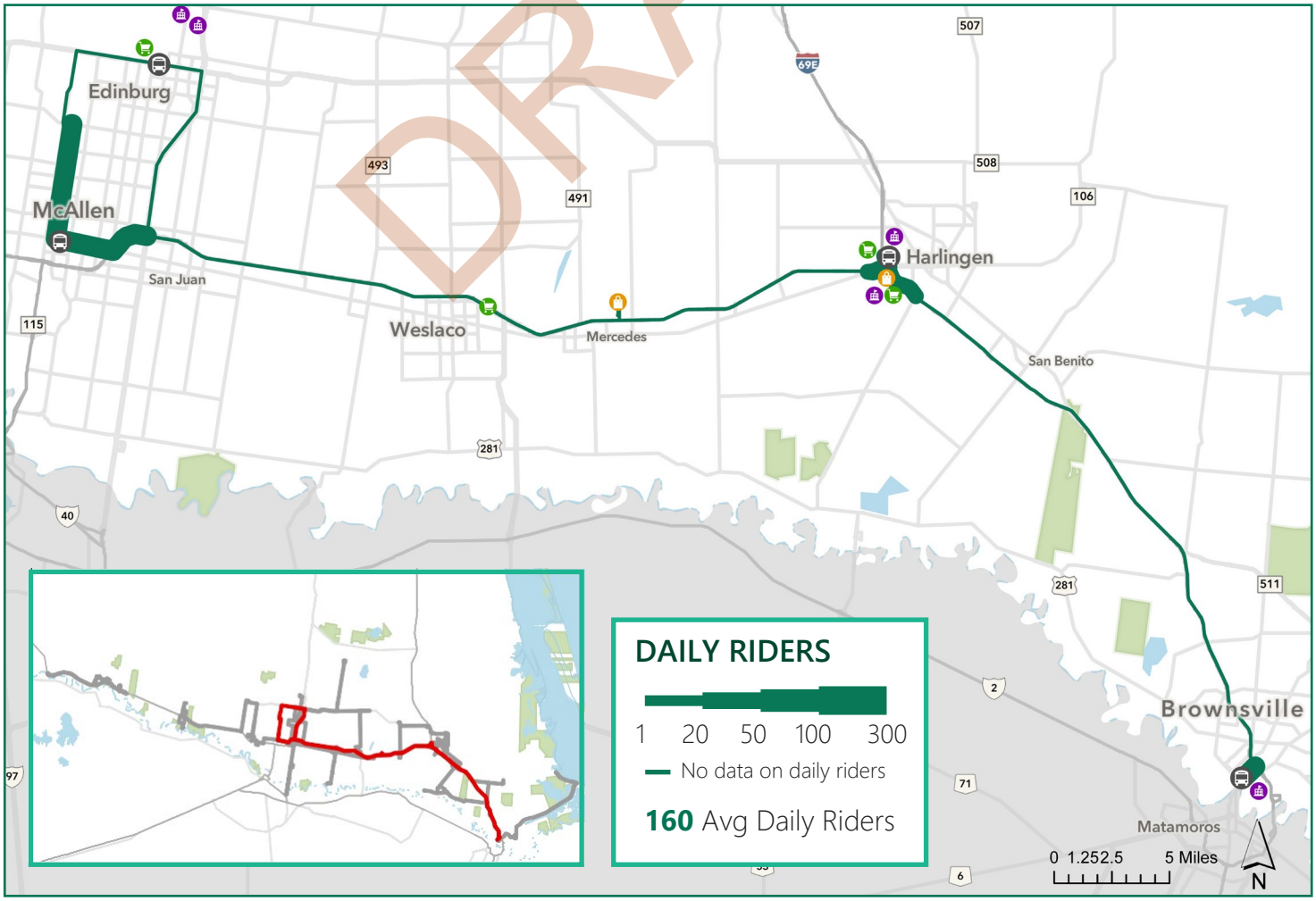
GROCERY

WalMart (University)
Super WalMart Harlingen

SHOPPING

Valle Vista Mall
RGV Premium Outlets

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ROUTE 10

VALLEY METRO

ROUTE DETAILS

Route 10 connects McAllen and Edinburg, following a fixed route unless passengers within a half mile of the route request pickup via phone at least one day in advance. The bus will leave the route, pick up the passenger, then return to the route to continue service. It operates Monday-Saturday from 6:30am to 5:30pm.

KEY DESTINATIONS

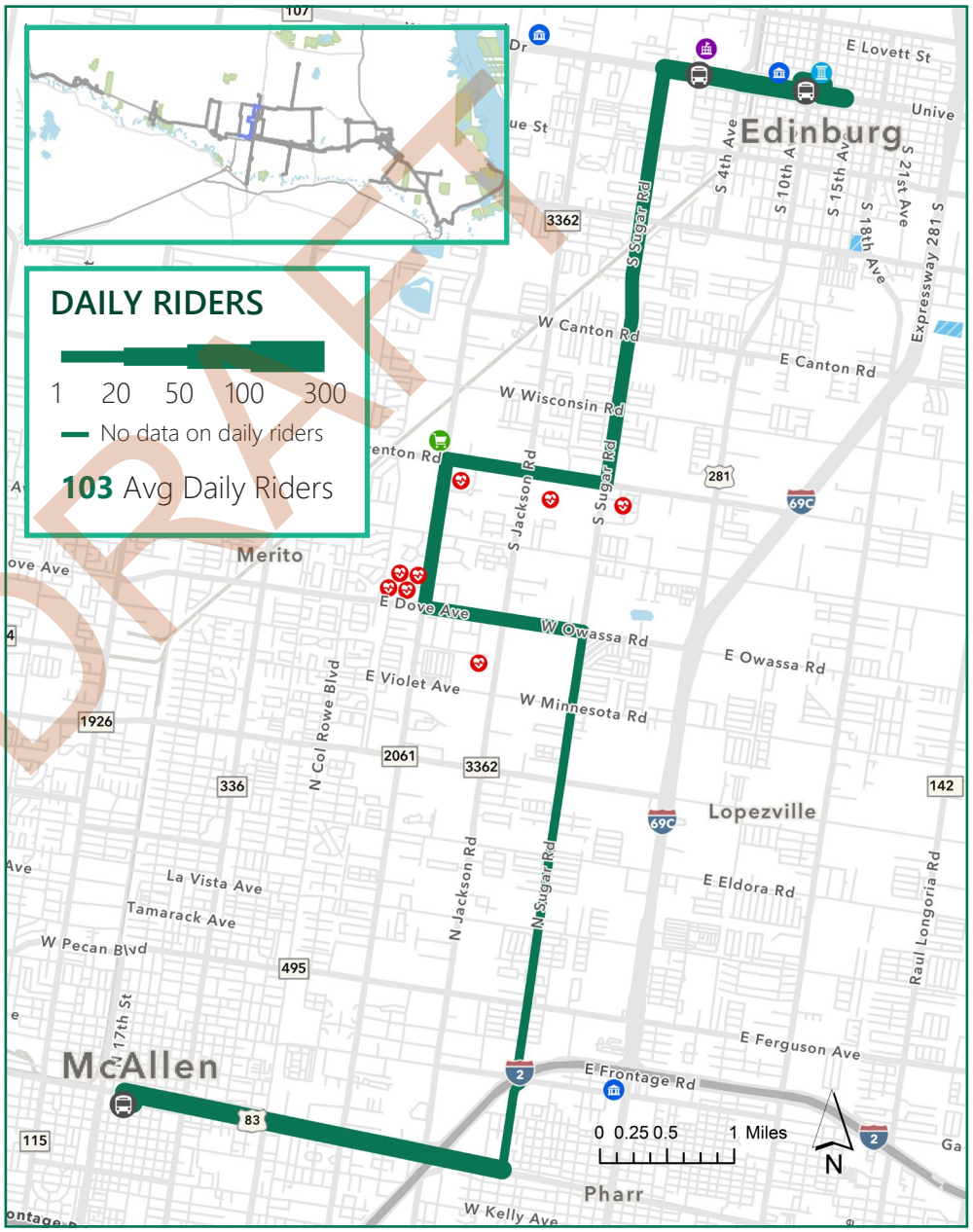
CONNECTION
Hidalgo County Courthouse
McAllen Central Station

SCHOOL
University Plaza
UTRGV Edinburg Campus

GROCERY
WalMart - University
WalMart - Trenton

GOVERNMENT
Hidalgo County Courthouse
Edinburg City Hall
Workforce Solutions
Pharr Housing Authority

MEDICAL
Edinburg Regional Medical Center
Doctor's Hospital at Renaissance
South Texas Behavioral Health Center
Solara Hospital McAllen
Cornerstone Regional Hospital
Lifecare Hospitals of South Texas



*Daily ridership was estimated from origin & destination surveys as stop-level ridership is not available for all routes.

ROUTE 11

VALLEY METRO

ROUTE DETAILS

Route 11 demand response service may be accessed by scheduling a ride at least one day in advance via phone. Trips can be scheduled within a half mile of the route during the hours of 6:00am-2:00pm on Wednesdays.

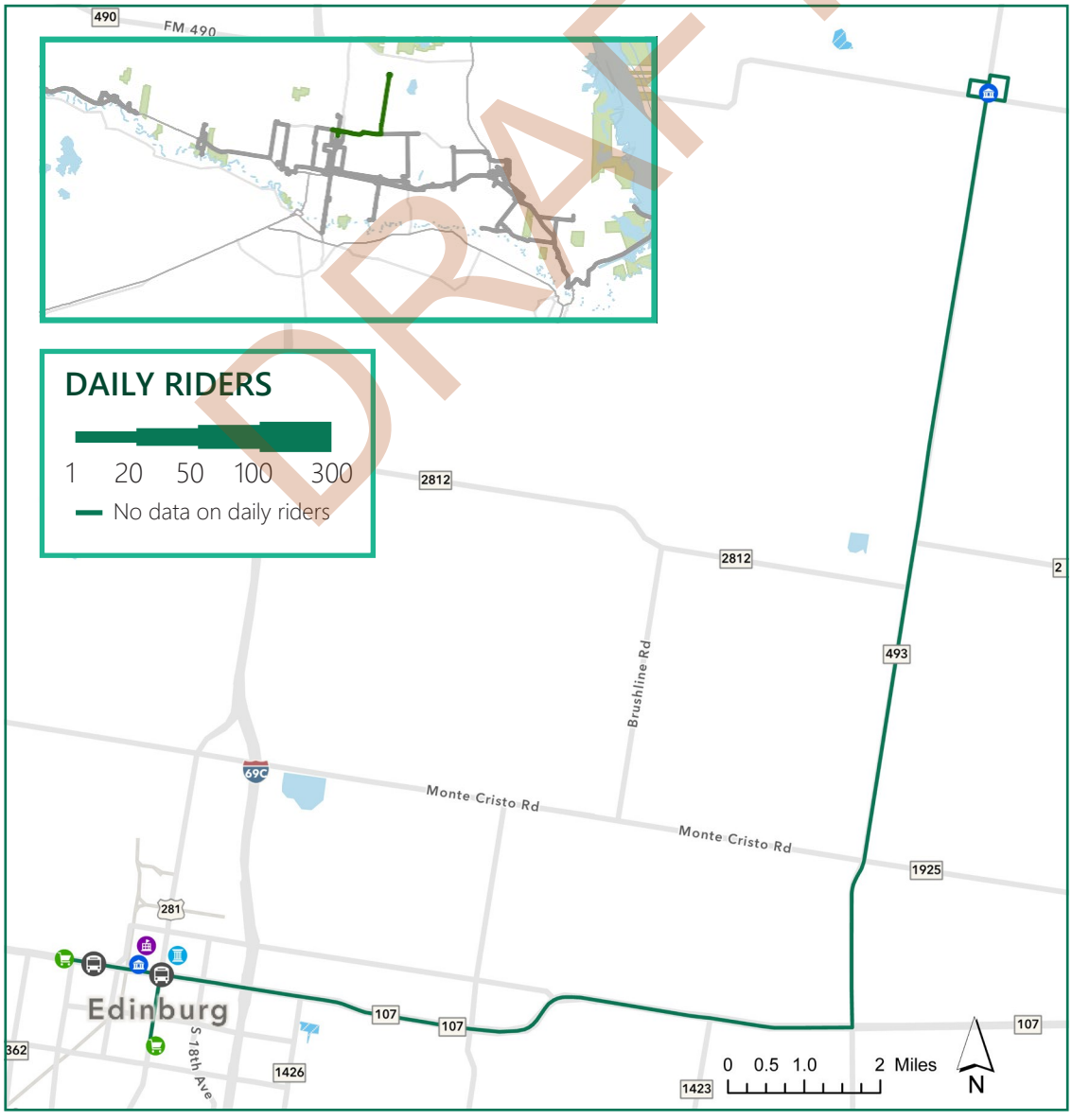
KEY DESTINATIONS

SCHOOL
UTRGV Edinburg
Hargill Elementary
Edinburg CISD Admin

GROCERY
El Tigre Mart
WalMart - University
HEB (Closner)

GOVERNMENT
Hidalgo County Courthouse
Edinburg City Hall
Hargill Post Office

MUSEUM
Museum of South Texas History



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ROUTE 12

VALLEY METRO

ROUTE DETAILS

Route 12 connects Weslaco to Edinburg following a fixed route unless passengers within a half mile of the route request pickup via phone at least one day in advance. The bus will leave the route, pick up the passenger, then return to the route to continue service. It operates Monday-Friday from 7:00am to 6:50pm.

KEY DESTINATIONS

SCHOOL
- UTRGV Edinburg
- STC Mid Valley
- Weslaco HS
- Weslaco 21st Century High School
- Edcouch Elsa HS

GROCERY
- Mercado Delta
- HEB - Elsa
- WalMart - University
- HEB Weslaco
- HEB Plus

GOVERNMENT
- Edcouch City Hall
- La Villa City Hall
- WIC Clinic
- Hidalgo County Courthouse
- Edinburg City Hall

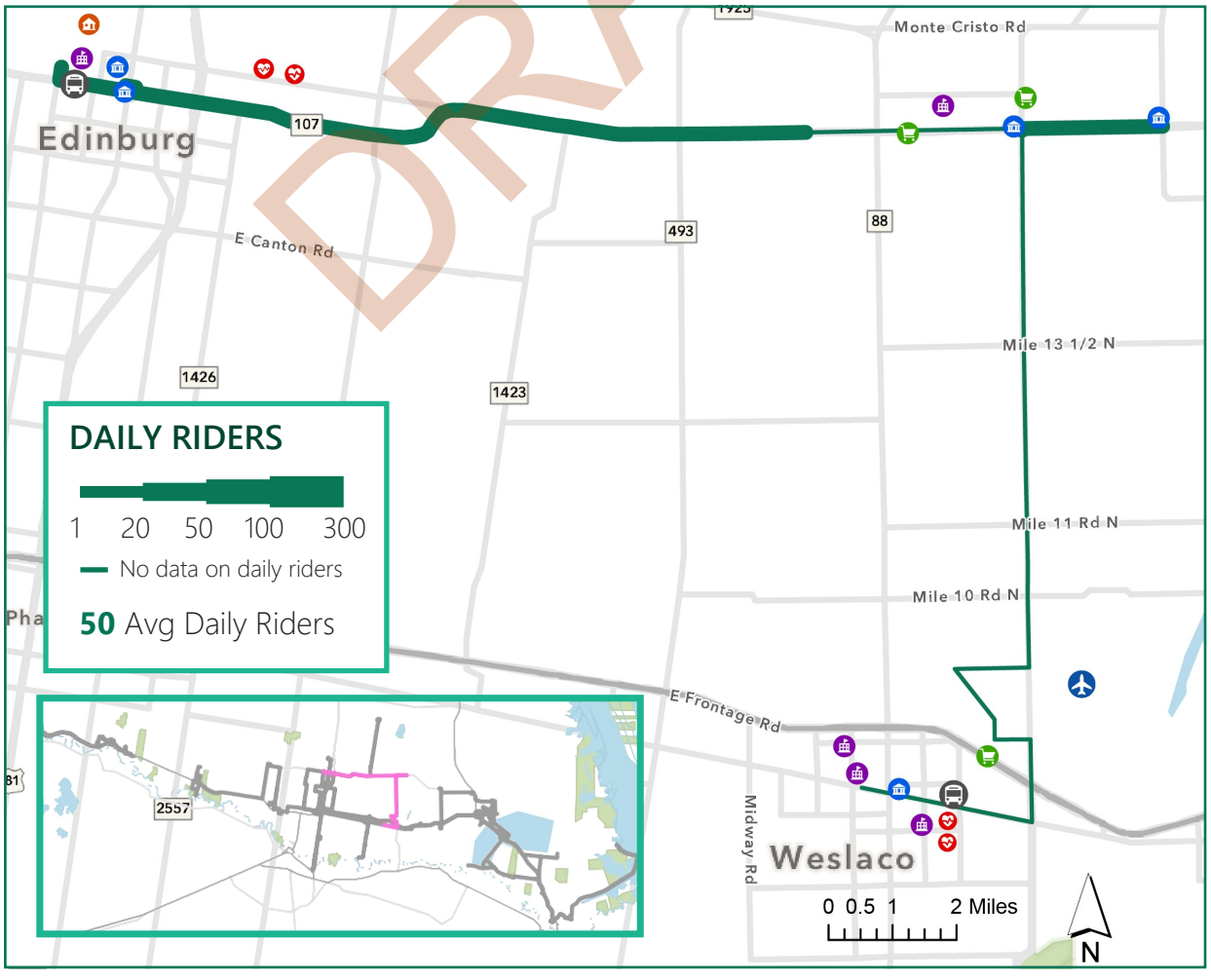
MEDICAL
- Knapp Medical Center
- Weslaco Rehab Hospital
- John Austin Memorial Center

CONNECTION
- UTRGV Edinburg Campus
- Weslaco Transit Center

COMMUNITY
- Hidalgo County Headstart

AIRPORT
- Mid Valley Airport

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ROUTE 15

VALLEY METRO

ROUTE DETAILS

Route 15 connects North Edinburg following a fixed route unless passengers within a half mile of the route request pickup via phone at least one day in advance. The bus will leave the route, pick up the passenger, then return to the route to continue service. Route 15 operates Monday-Saturday from 7:00am to 5:00pm.

KEY DESTINATIONS

CONNECTION
UTRGV Visual Arts Building

SCHOOL
UTRGV Visual Arts Building
IDEA Edinburg College Prep
Edinburg North High School
Edinburg CISD Admin Building

GROCERY
WalMart
HEB (Closner)

SHOPPING
The Shoppes at Rio Grande Valley

GOVERNMENT
Health & Human Services
Edinburg City Hall
Hidalgo County Courthouse
Probation Office
Auto License Office

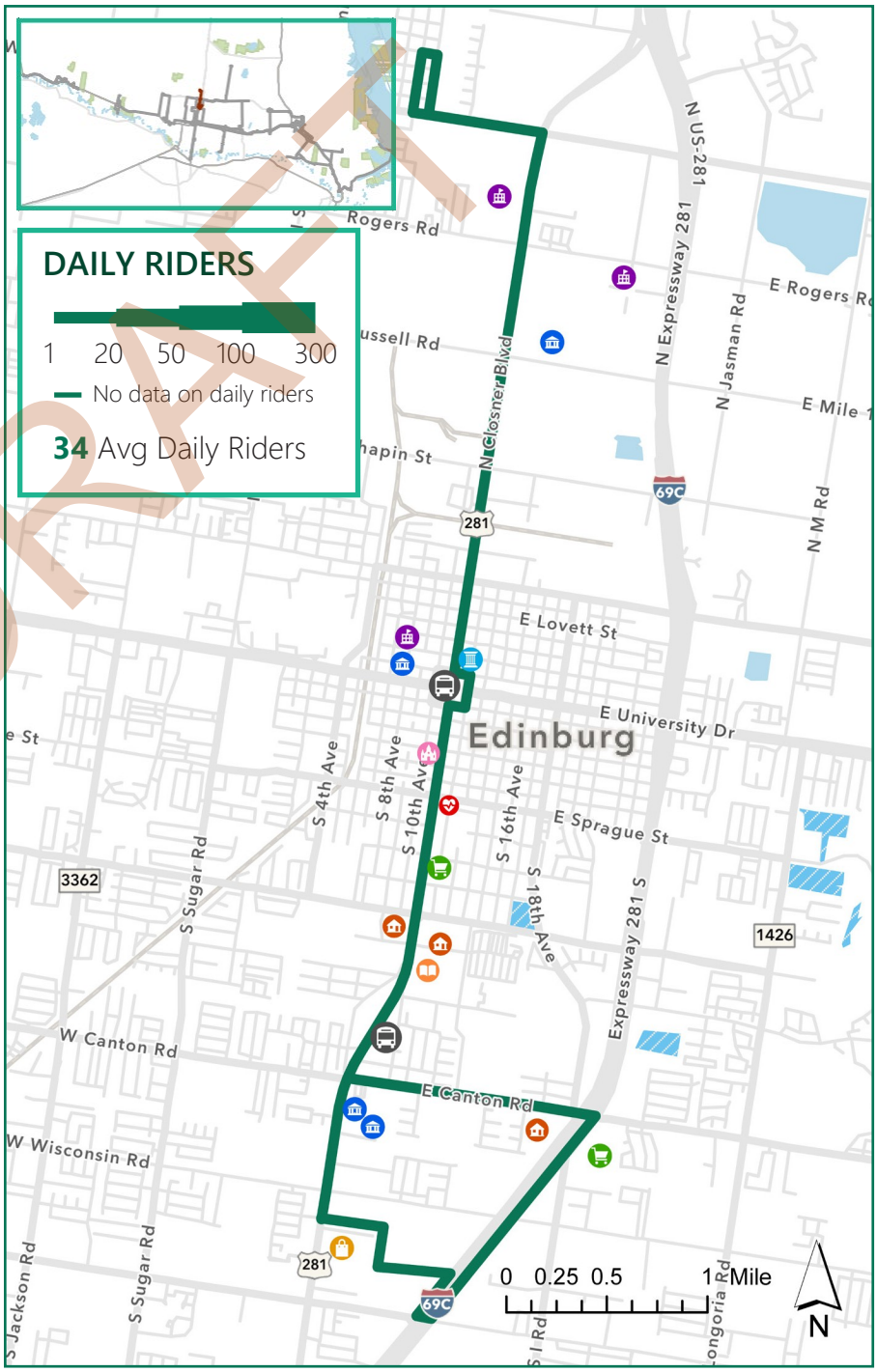
MEDICAL
Women's Clinic of South Texas

MUSEUM
Museum of South Texas History

COMMUNITY
Teleperformance
Carmike Cinemas

CHURCH
Capilla San Jose

LIBRARY
Dustin Sekula Memorial Library



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ROUTE 16

VALLEY METRO

ROUTE DETAILS

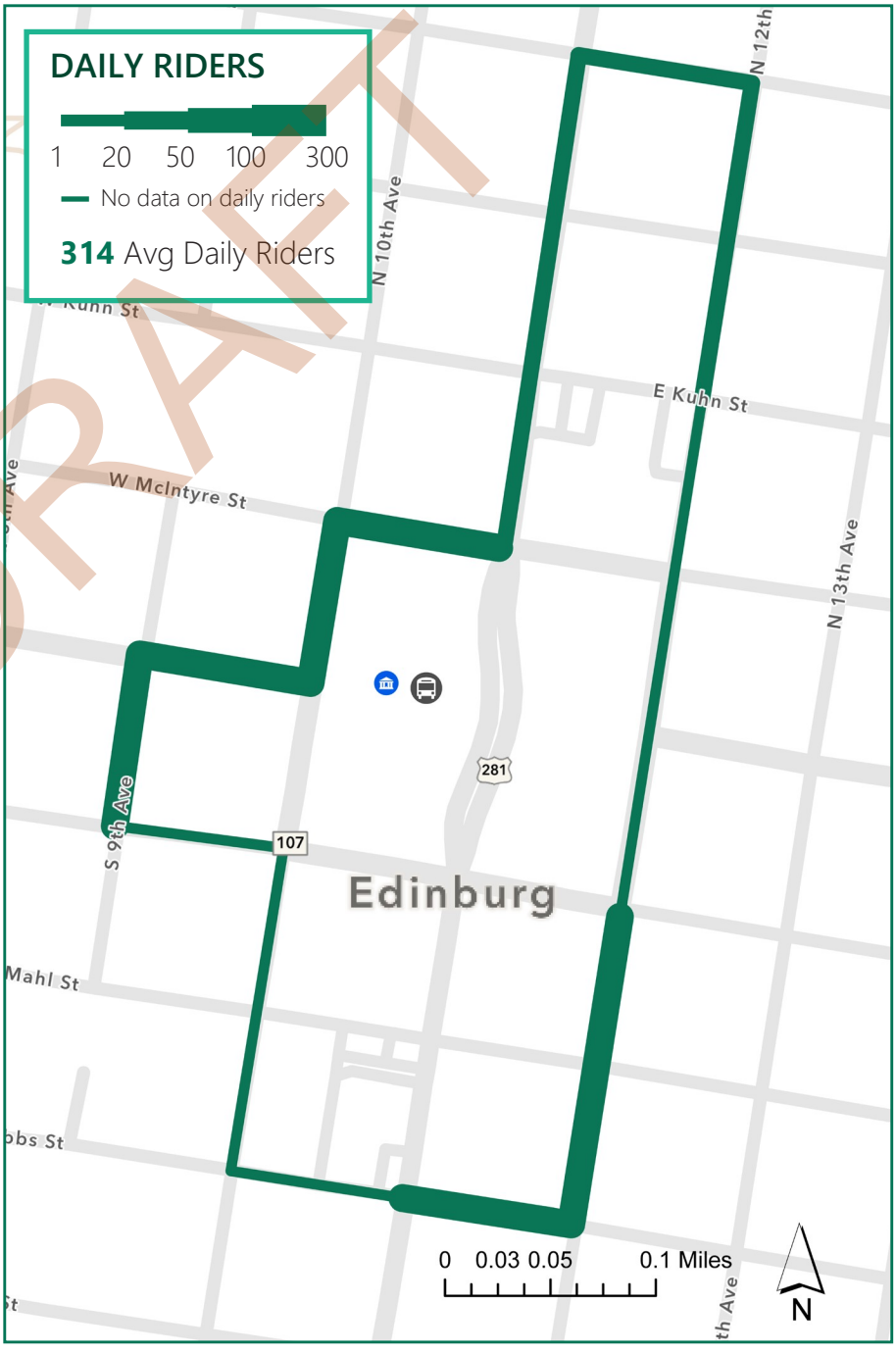
Route 16 circulates the county courthouse and adjacent parking lots. The route stops briefly at each location on all trips. Passengers may request to stop at other locations. The circulator operates Monday-Friday from 7:00am to 6:00pm.

KEY DESTINATIONS

GOVERNMENT
Hidalgo County Courthouse

CONNECTIONS
Hidalgo County Courthouse





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ROUTE 20

VALLEY METRO

ROUTE DETAILS

Route 20 services Mission and McAllen, following a fixed route unless passengers within a half mile of the route request pickup via phone at least one day in advance. The bus will leave the route, pick up the passenger, then return to the route to continue service. Route 20 operates Monday-Saturday from 6:30am to 5:30pm.

KEY DESTINATIONS

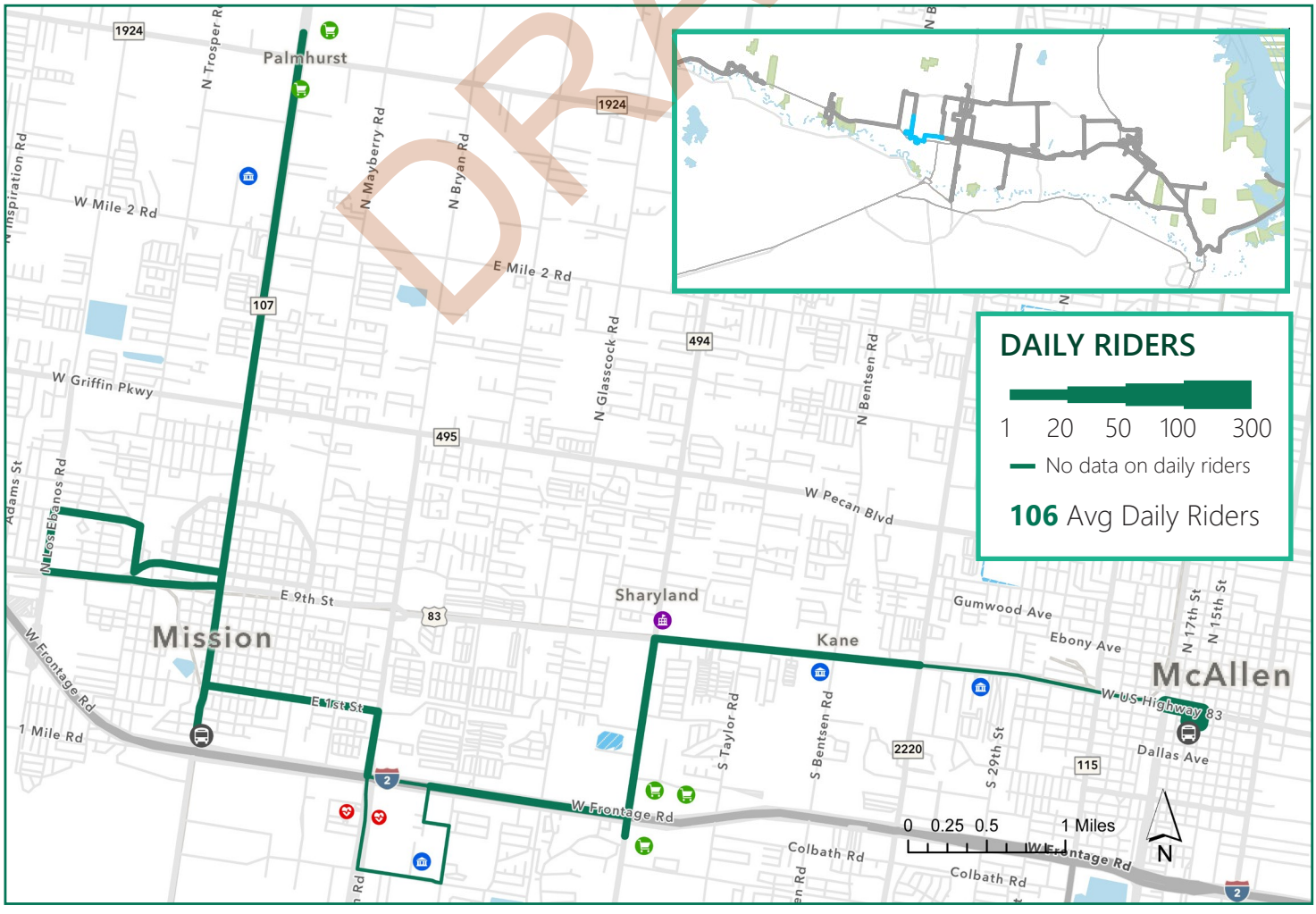
CONNECTION
McAllen Central Station
Foy's Supermarket

GOVERNMENT
Health & Human Services (McAllen)
Health & Human Services (Mission)
Workforce Solutions
Workforce Solutions Main Office

GROCERY
Walmart (Mile 3)
Foy's Supermarket
HEB
Target

SCHOOL
Sharyland Advanced Academy

MEDICAL
Mission Regional Medical Center
Mission Nursing and Rehab Center



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ROUTE 21

VALLEY METRO

ROUTE DETAILS

Route 21 services Mission and Sullivan City, following a fixed route unless passengers within a half mile of the route request pickup via phone at least one day in advance. The bus will leave the route, pick up the passenger, then return to the route to continue service. Route 21 departs at 7:40am and at 2:00pm each Monday Wednesday, and Friday.

KEY DESTINATIONS

CONNECTION
Foy's Supermarket

SCHOOL
La Joya High School
Palmview High School

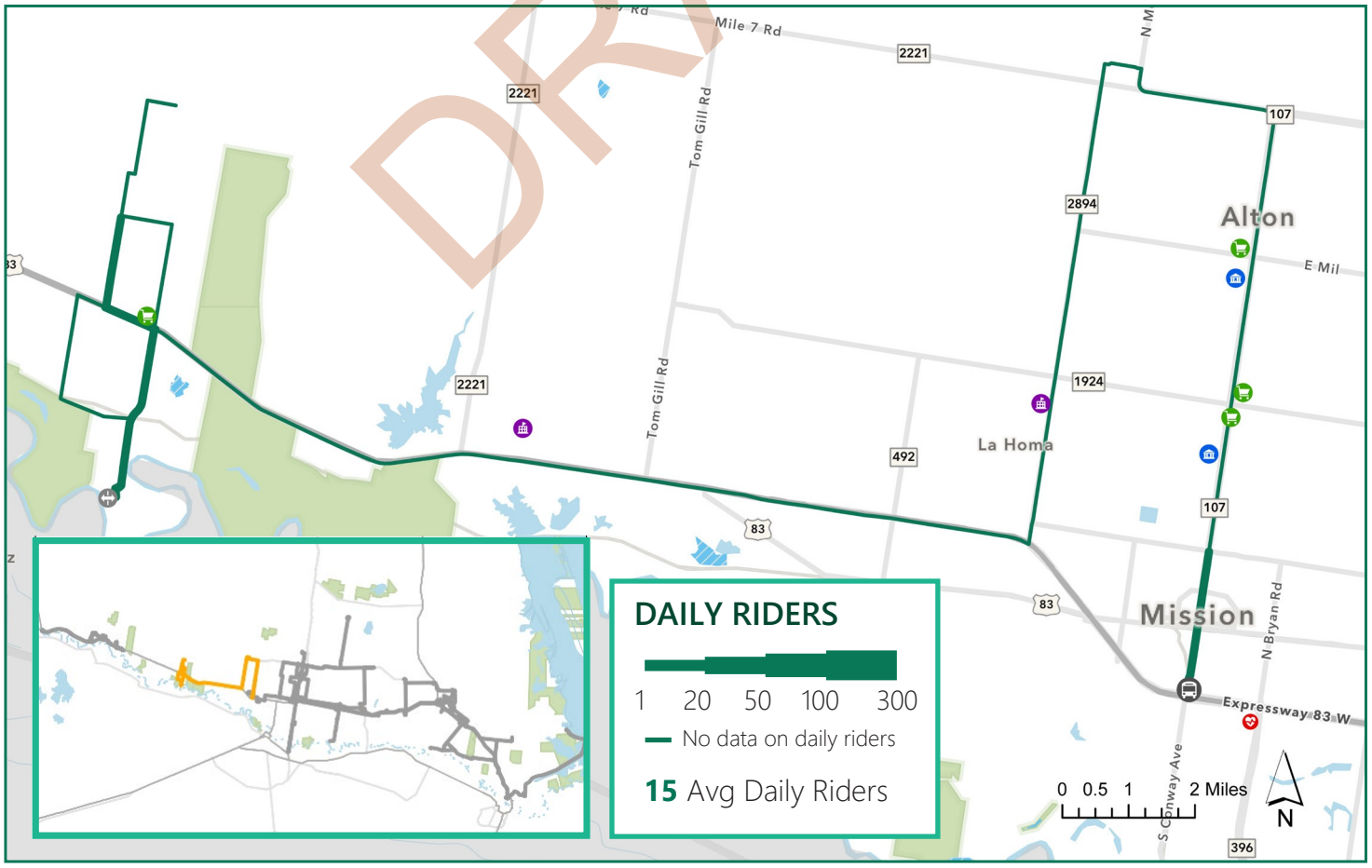
GROCERY
Foy's Supermarket
WalMart - Peñitas
Jessie's Store
Junior's Supermarket
WalMart - Palmhurst
HEB - Mission

GOVERNMENT
Alton City Hall
Health & Human Services

MEDICAL
Mission Regional
Medical Center

BORDER CROSSING
Los Ebanos Ferry

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ROUTE 30

VALLEY METRO

ROUTE DETAILS

Route 30 services Pharr, San Juan and Edinburg, following a fixed route unless passengers within a half mile of the route request pickup via phone at least one day in advance. The bus will leave the route, pick up the passenger, then return to the route to continue service. Route 30 operates Monday-Saturday from 6:20pm until 4:50pm.

KEY DESTINATIONS

SCHOOL
PSJA Southwest Early College
High School
IDEA College Prep

SHOPPING
The Shoppes at Rio Grande Valley

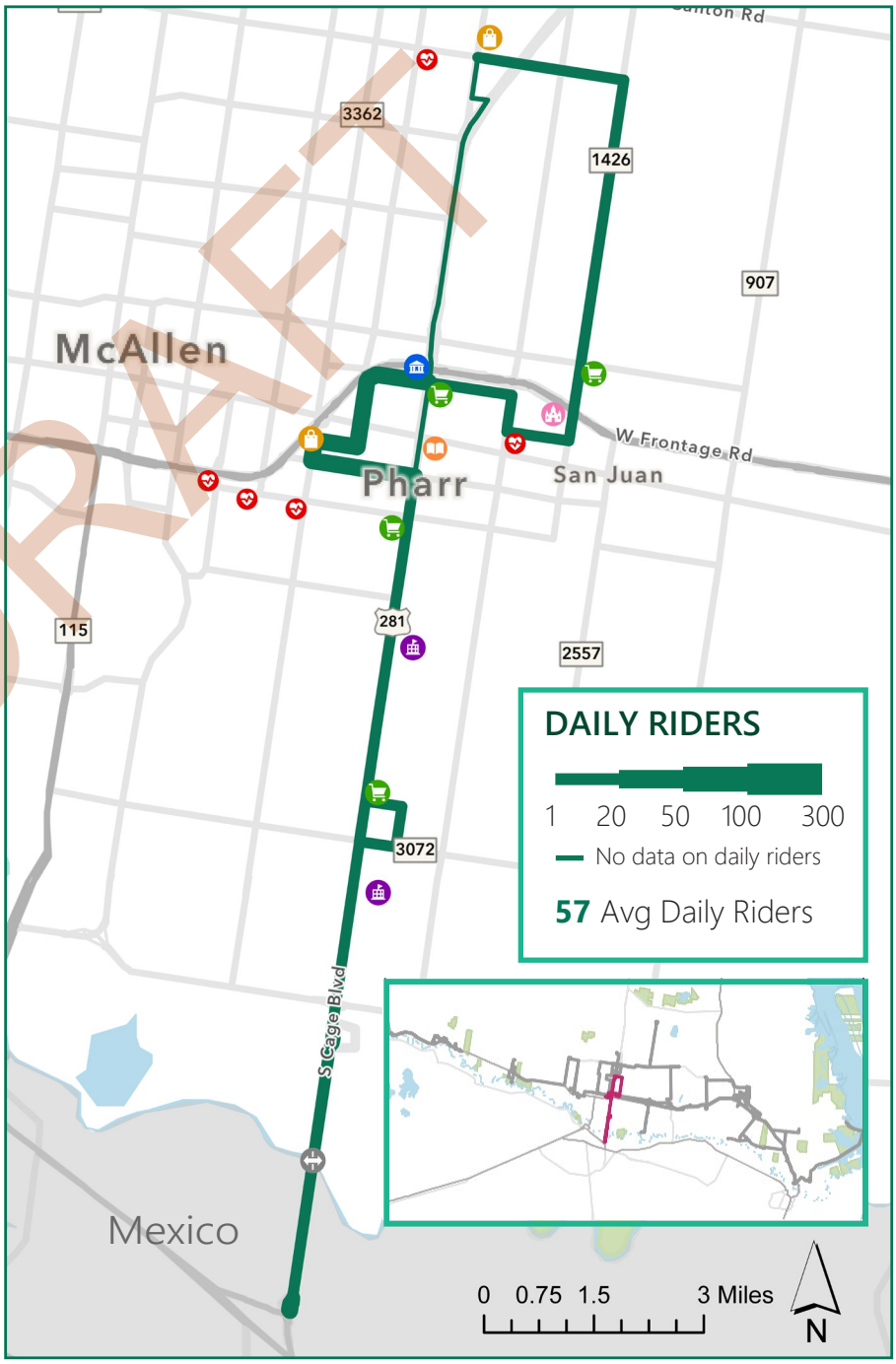
GROCERY
Junior 's (Cage)
Junior 's (San Juan)
M. Rivas
WalMart
HEB (Ridge)

GOVERNMENT
Pharr Housing Authority

MEDICAL
Nuestra Clinica del Valle
McAllen Medical Center
McAllen Heart Hospital
Edinburg Regional Medical Center

CHURCH
Our Lady of San Juan Basilica

BORDER CROSSING
Pharr International Bridge



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ROUTE 31

VALLEY METRO

ROUTE DETAILS

Route 31 services the cities along Business 83 from Harlingen to McAllen, following a fixed route unless passengers within a half mile of the route request pickup via phone at least one day in advance. The bus will leave the route, pick up the passenger, then return to the route to continue service. The route operates Monday-Saturday from 6:00am to 6:00pm.

KEY DESTINATIONS

CONNECTION
McAllen Central Station
Donna City Square Park
Harlingen Terminal
Weslaco Transit Center

MEDICAL
Knapp medical Center
Weslaco Rehab Hospital
Nuestra Clinica Del Valle

SHOPPING
RGV Premium Outlets
Dollar General

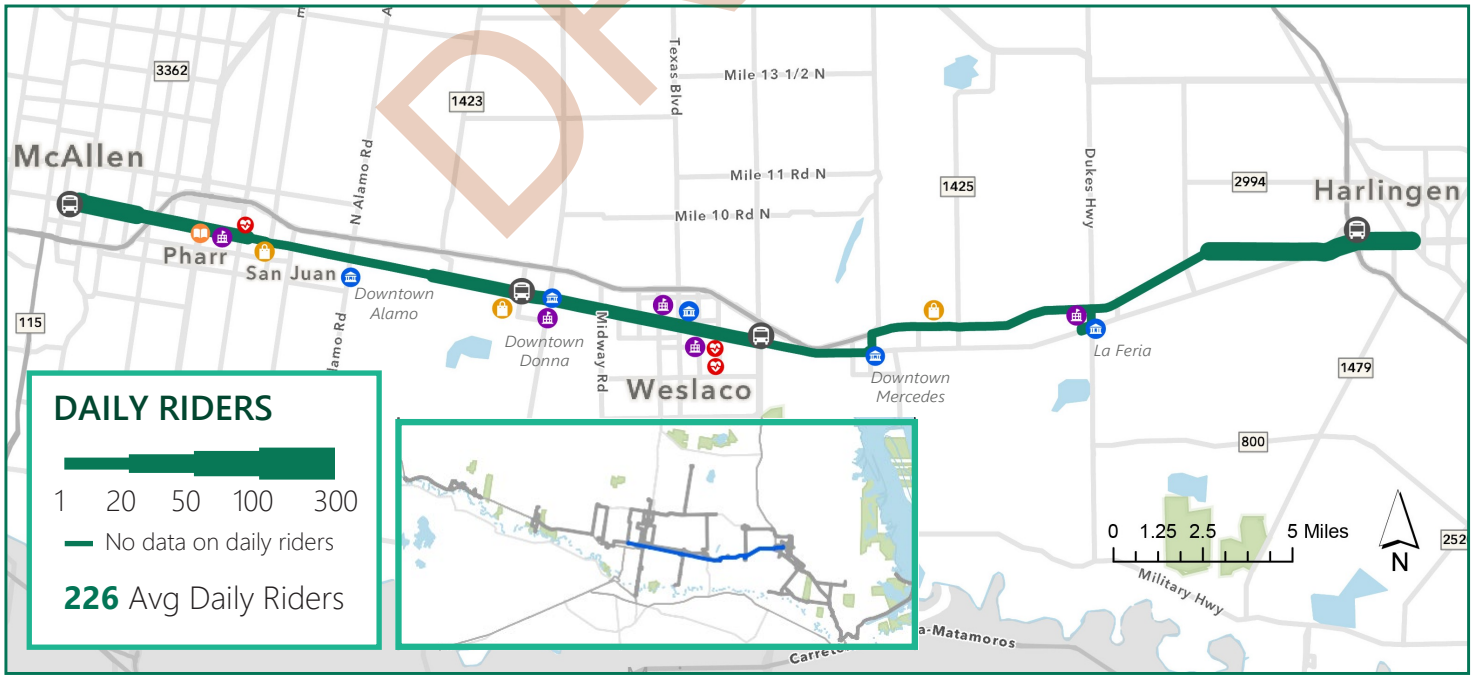
PARK
Donna City Square Park

GOVERNMENT
Weslaco City Hall

LIBRARY
Pharr City Library

SCHOOL
STC Mid Valley Campus
La Feria High School
Weslaco 21st Century Early College High School
3D Academy - Donna College Career & Technology Academy

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ROUTE 32

VALLEY METRO

ROUTE DETAILS

Route 32 services the City of Donna and connects to the Donna International Bridge, following a fixed route unless passengers within a half mile of the route request pickup via phone at least one day in advance. The bus will leave the route, pick up the passenger, then return to the route to continue service. Route 32 runs Monday-Friday from 8:00am to 5:00pm.

KEY DESTINATIONS

CONNECTION
Donna City Square Park
Donna Park & Ride

GROCERY
HEB
Donna WalMart

SHOPPING
Dollar General
Autozone
O'Reilly Auto Parts

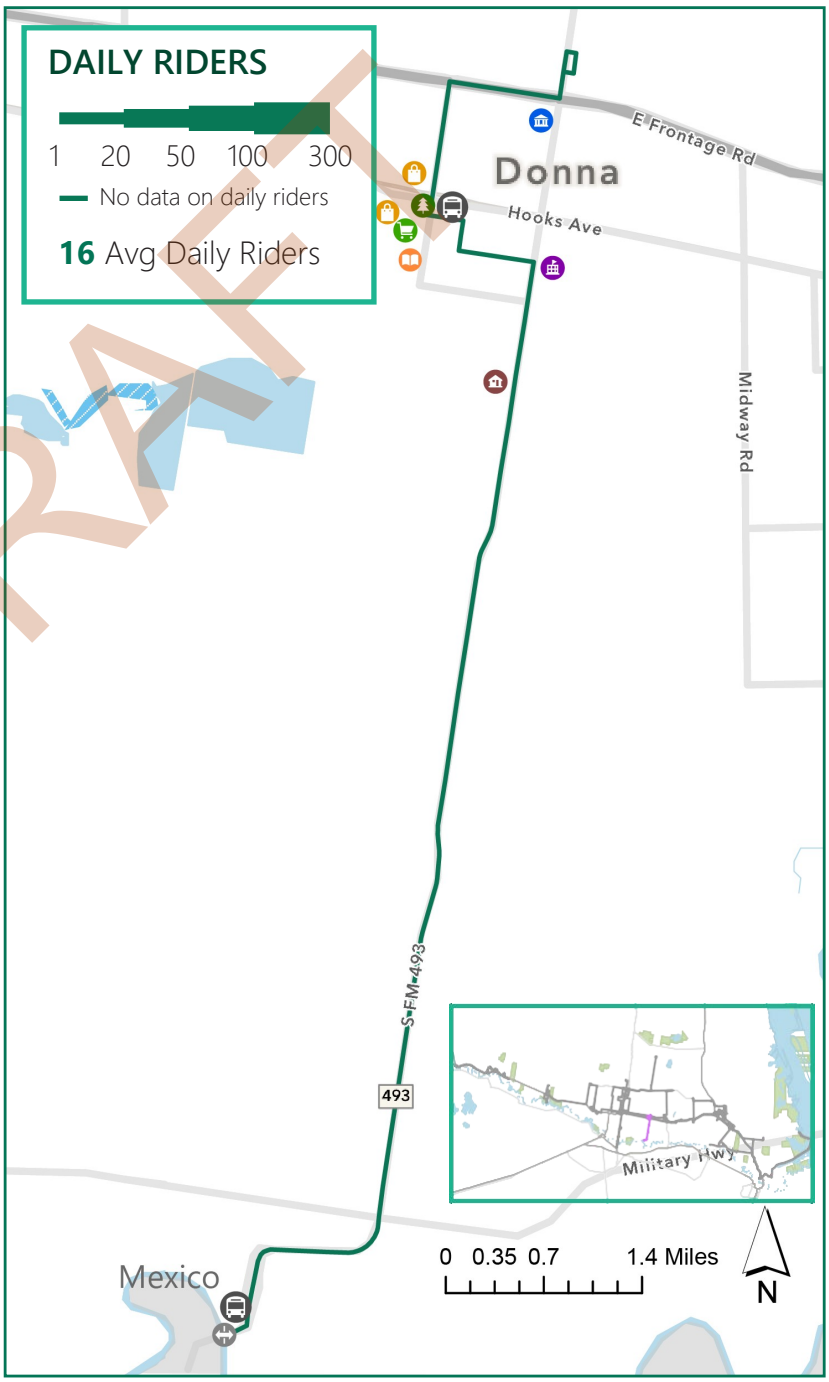
GOVERNMENT
Donna Post Office

COMMUNITY
Mesa Apartments

PARK
Donna City Square Park

LIBRARY
Donna Public Library

BORDER CROSSING
Donna International Bridge



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ROUTE 40

VALLEY METRO

ROUTE DETAILS

Route 40 services southern Harlingen, stopping at several medical facilities and following a fixed route unless passengers within a half mile of the route request pickup via phone at least one day in advance. The bus will leave the route, pick up the passenger, then return to the route to continue service. Route 40 operates Monday-Friday from 6:30am until 5:30pm.

KEY DESTINATIONS

CONNECTION
Regional Academic Health Center

GROCERY
HEB
Sam's Club

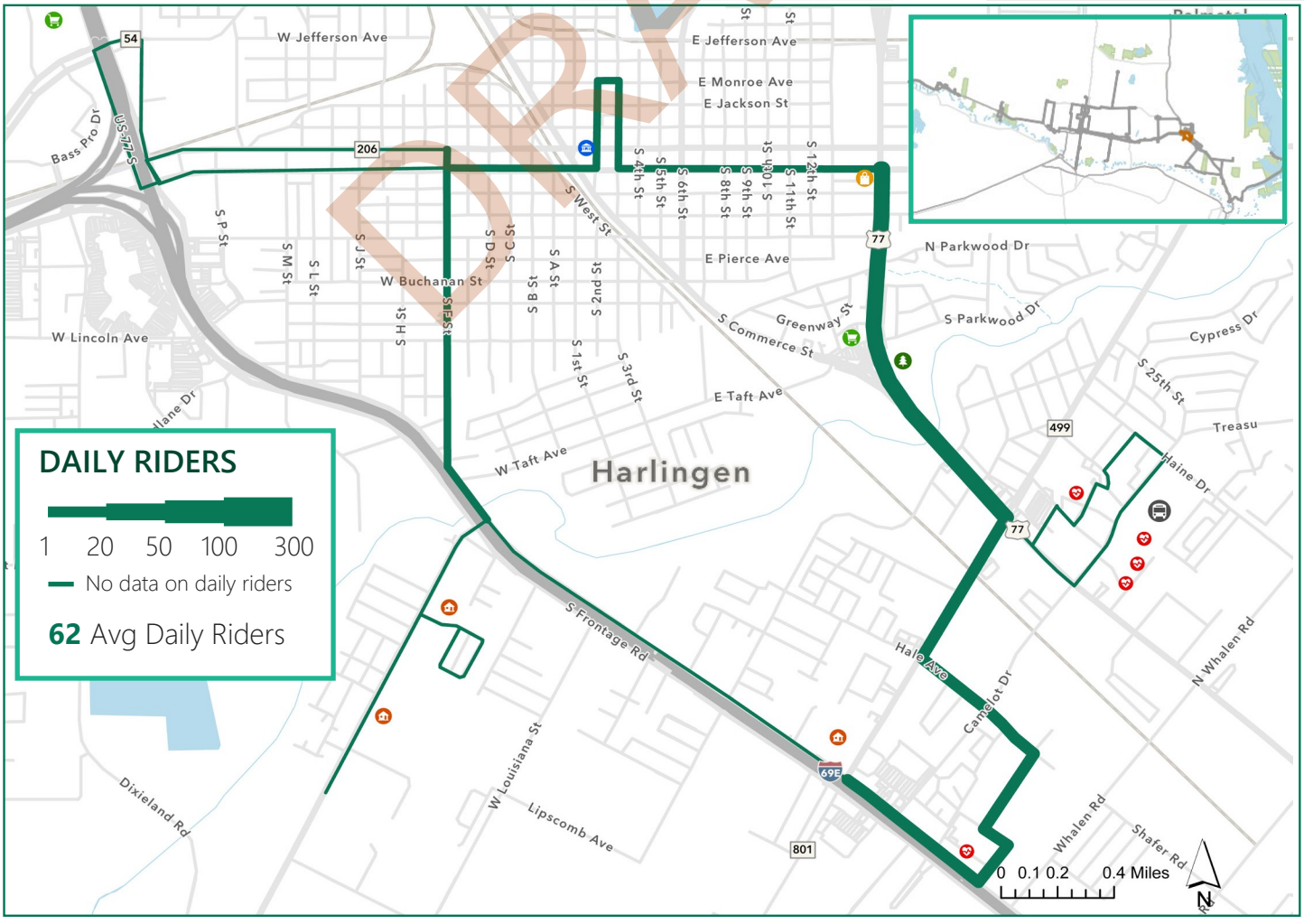
SHOPPING
Walgreens

COMMUNITY
Good Samaritan Center
Bonita Park Headstart
Boys and Girls Club

GOVERNMENT
City of Harlingen Offices

PARK
McKelvey Park

MEDICAL
Valley Baptist Medical Center
Harlingen Medical Center
Su Clinica Familiar
Ronald McDonald House
South TX VA Healthcare Center
Regional Academic Health Center



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ROUTE 41

VALLEY METRO

ROUTE DETAILS

Route 41 services many retail locations in north Harlingen, following a fixed route unless passengers within a half mile of the route request pickup via phone at least one day in advance. The bus will leave the route, pick up the passenger, then return to the route to continue service. Route 41 operates Monday-Saturday from 6:30am until 5:30pm.

KEY DESTINATIONS

SCHOOL
Texas State Technical College

GOVERNMENT
Harlingen City Hall
Social Security Office

AIRPORT
Valley International Airport

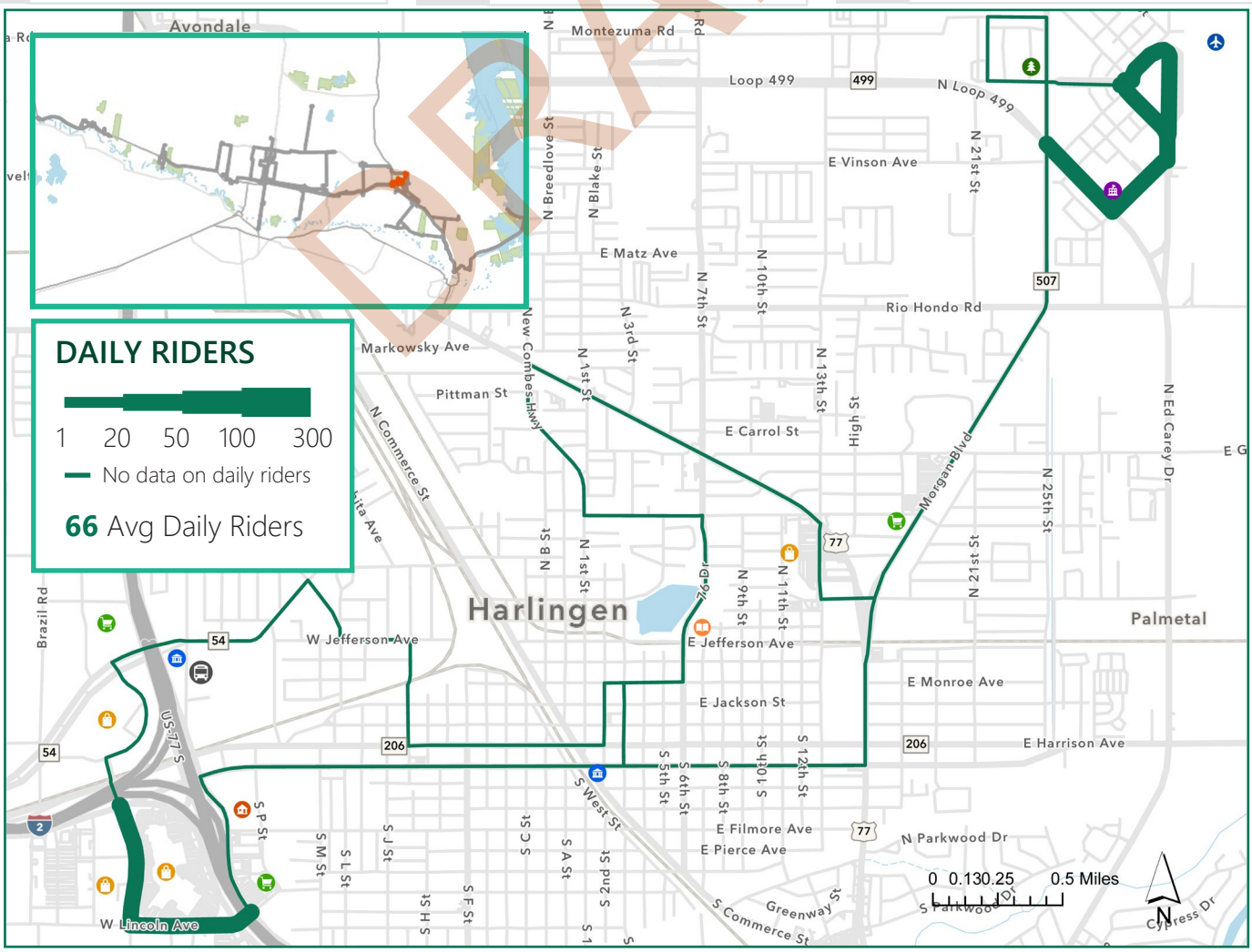
GROCERY
HEB (Morgan)
Sam's Club
WalMart
HEB (Frontage)

COMMUNITY
Cinemark Theater

SHOPPING
Sun Valley Plaza Mall
Bass Pro Shop
Valle Vista Mall
Target

LIBRARY
Harlingen Public Library

DRAFT



ROUTE 42

VALLEY METRO

ROUTE DETAILS

Route 42 connects San Benito and Harlingen, following a fixed route unless passengers within a half mile of the route request pickup via phone at least one day in advance. The bus will leave the route, pick up the passenger, then return to the route to continue service. This route operates Monday-Friday from 6:35am until 3:43pm.

KEY DESTINATIONS

CONNECTION
- Harlingen Terminal
- San Benito City Hall

SCHOOL
- San Benito High School
- Mid Valley Academy
- Gateway to Graduation Academy

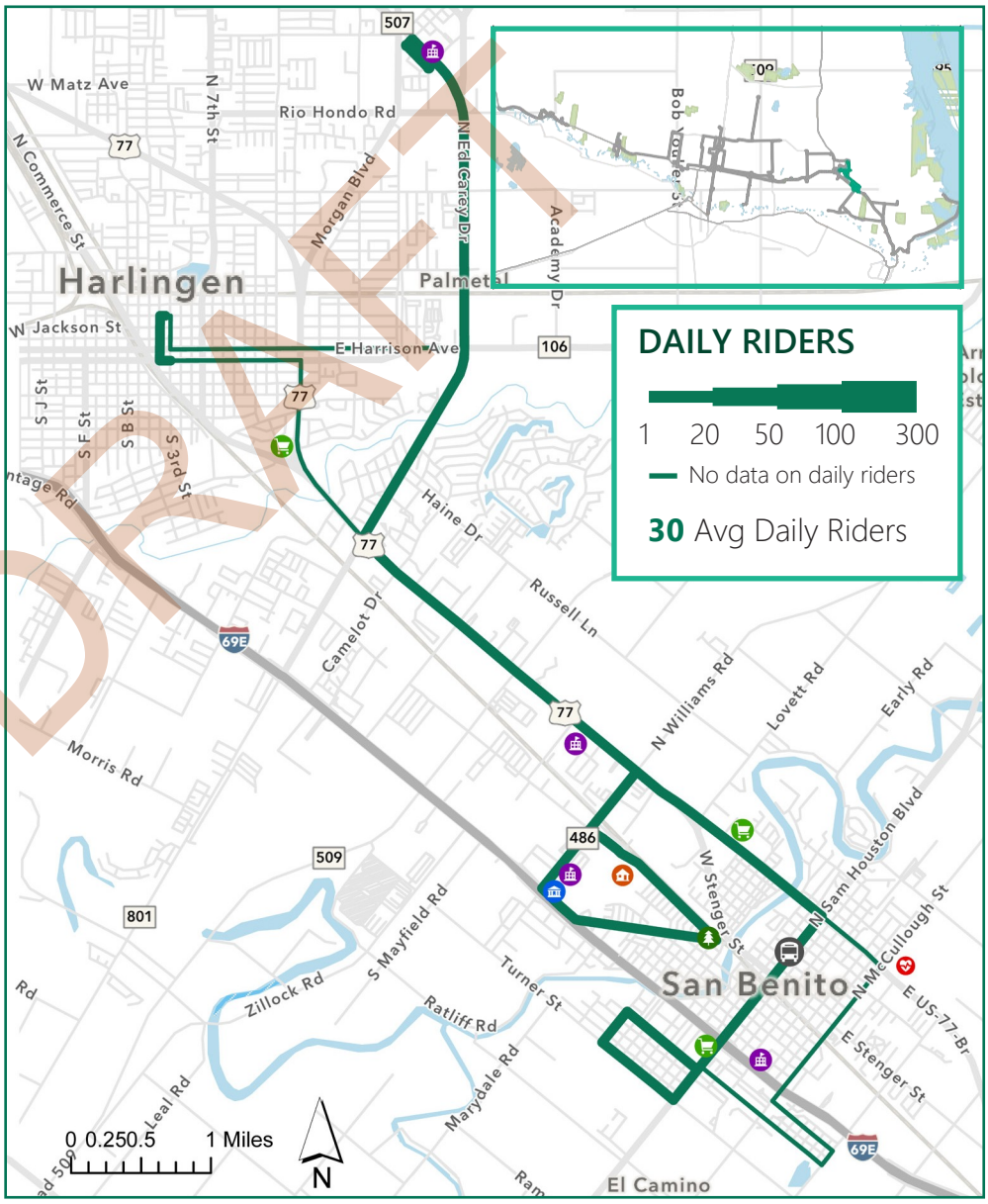
GROCERY
- Lopez Supermarket
- Super WalMart
- HEB
- WalMart

GOVERNMENT
- Cameron County Annex
- San Benito City Hall

MEDICAL
- US Renal Care - San Benito

COMMUNITY
- Bobby Morrow Stadium

PARK
- Resaca Trail



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ROUTE 43

VALLEY METRO

ROUTE DETAILS

Route 43 connects San Benito to Brownsville, following a fixed route unless passengers within a half mile of the route request pickup via phone at least one day in advance. The bus will leave the route, pick up the passenger, then return to the route to continue service. This route operates each Monday, Wednesday, and Friday from 8:00am until 2:45pm.

KEY DESTINATIONS

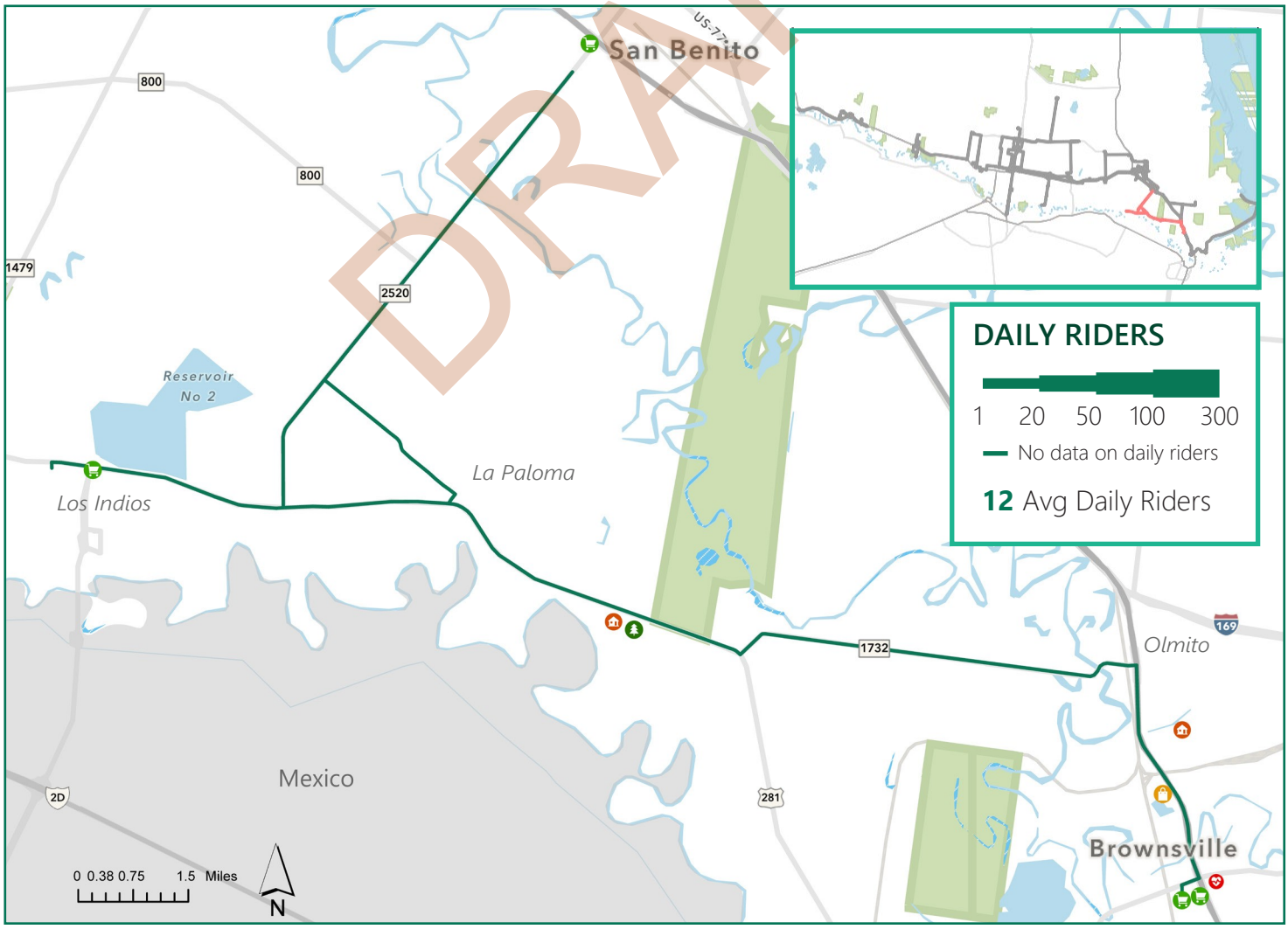
GROCERY
Stripes - FM 509
WalMart (Brownsville)
Sam's Club (Brownsville)
Lopez Supermarket

SHOPPING
77 Flea Market

MEDICAL
Valley Regional Medical Center

COMMUNITY
Brownsville Sports Park
El Ranchito Headstart

DRAFT



ROUTE 44

VALLEY METRO

ROUTE DETAILS

Route 44 services La Feria, Santa Rosa, and Combes, following a fixed route unless passengers within a half mile of the route request pickup via phone at least one day in advance. The bus will leave the route, pick up the passenger, then return to the route to continue service. Route 44 operates Monday-Friday from 6:30am until 4:30pm.

KEY DESTINATIONS

CONNECTION
Harlingen Terminal
La Feria City Hall

GROCERY
El Centro Foods

SHOPPING
Dollar General
Walgreens

SCHOOL
Santa Rosa High School
Texas State Technical College
La Feria High School
Southwest Key High School

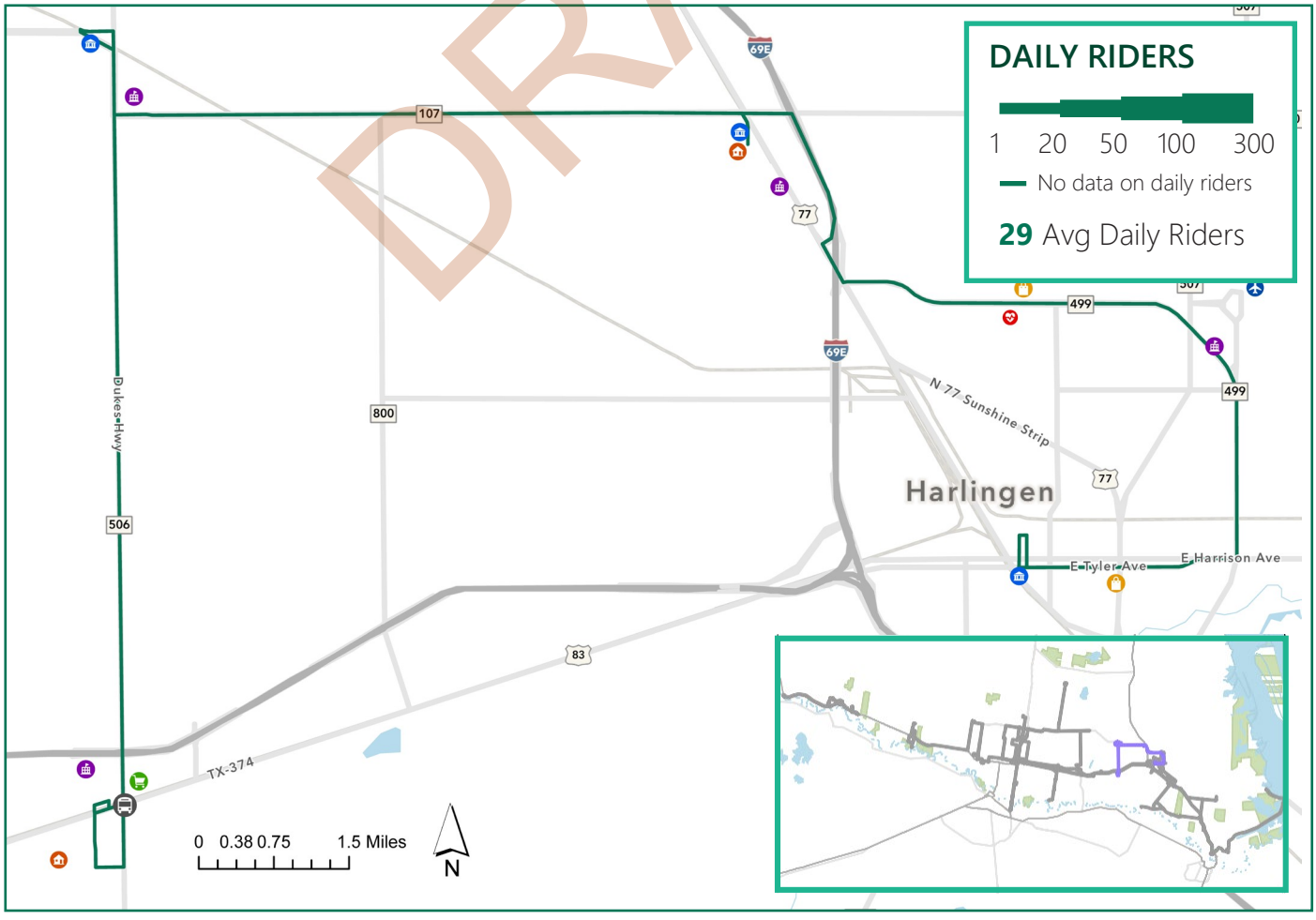
MEDICAL
Tropical Texas Behavioral Health

AIRPORT
Valley International Airport

GOVERNMENT
Combes City Hall
Santa Rosa City Hall
La Feria City Hall
Harlingen City Hall

COMMUNITY
La Feria Sports Complex
Combes Community Center

DRAFT



ROUTE 45

VALLEY METRO

ROUTE DETAILS

Route 45 services employment hubs between Brownsville and Harlingen, following a fixed route unless passengers within a half mile of the route request pickup via phone at least one day in advance. The bus will leave the route, pick up the passenger, then return to the route to continue service. Route 45 operates Monday-Friday from 6:25am until 5:30pm.

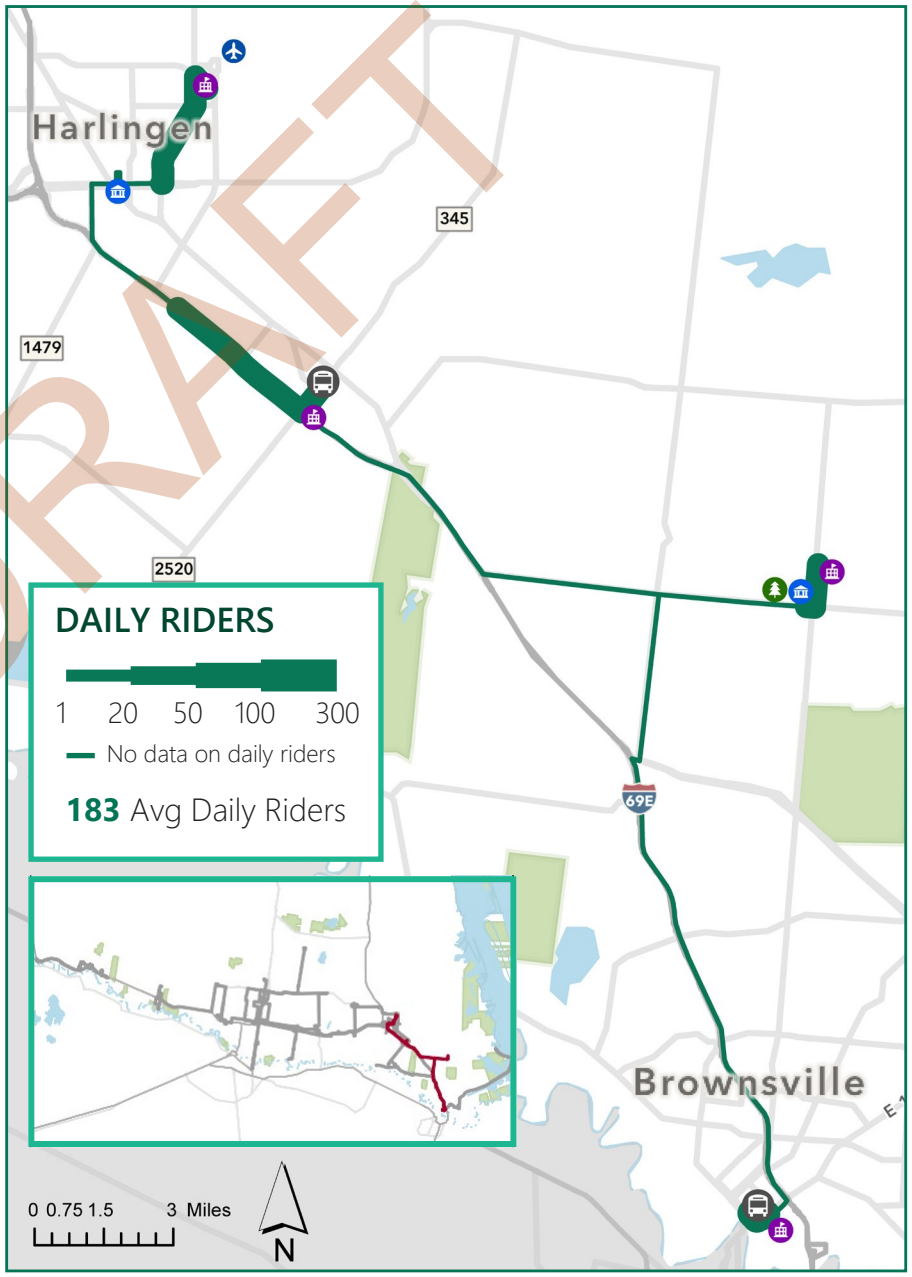
KEY DESTINATIONS

CONNECTION
La Plaza Brownsville Multimodal Terminal

SCHOOL
Texas State Technical College
UTRGV Brownsville Campus
Los Fresnos High School
Gateway to Graduation High School

GOVERNMENT
San Benito City Hall
Los Fresnos City Hall
Harlingen City Hall

PARK
Los Fresnos City Park



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2030 TRANSIT DEVELOPMENT PLAN

ROUTE 50

VALLEY METRO

ROUTE DETAILS

Route 50 services Brownsville, Port Isabel, and Laguna Vista, following a fixed route. This route is free for all passengers and operates Monday-Saturday from 6:00am to 6:30pm, and Sundays from 6:00am to 6:10pm.

KEY DESTINATIONS

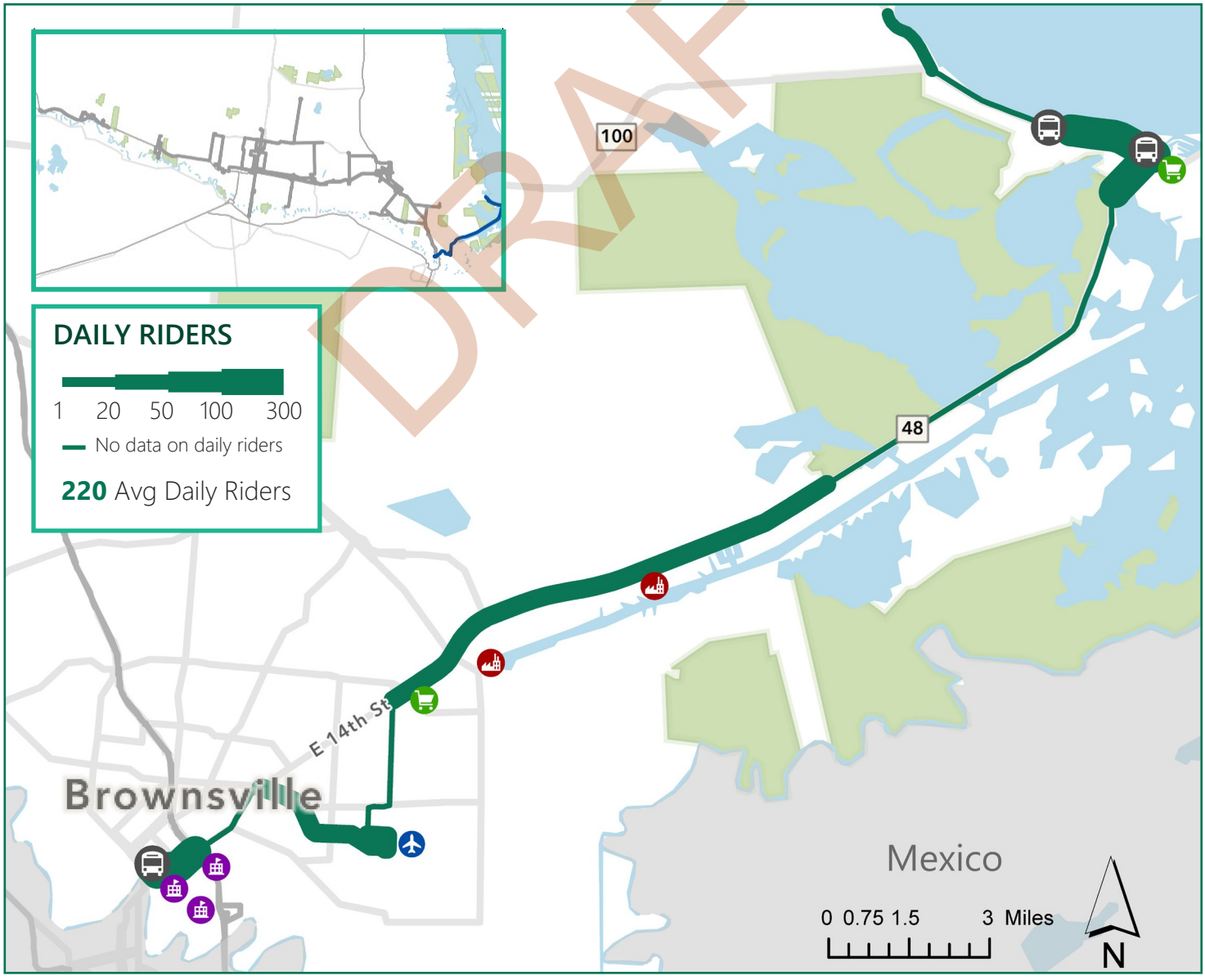
CONNECTION
- La Plaza Brownsville Multimodal Terminal
- Port Isabel
- Laguna Heights

SCHOOL
- UTRGV Brownsville Campus
- Texas Southmost College
- Lincoln Park High School

AIRPORT
- Brownsville-SPI Airport

GROCERY
- WalMart (Brownsville)
- WalMart (Port Isabel)

INDUSTRIAL
- Keppel AmFELS
- Port of Brownsville



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ROUTE 60

VALLEY METRO

ROUTE DETAILS

Route 60 services Roma and Rio Grande, following a fixed route and stopping briefly at each scheduled stop. This is an extension of the free South Texas College Jag Express - Green Line. It operates Monday-Friday from 7:10am to 5:00pm.

KEY DESTINATIONS

GOVERNMENT
Roma City Hall
Rio Grande City Fire Department
Rio Grande City Police Department
Escobares City Hall

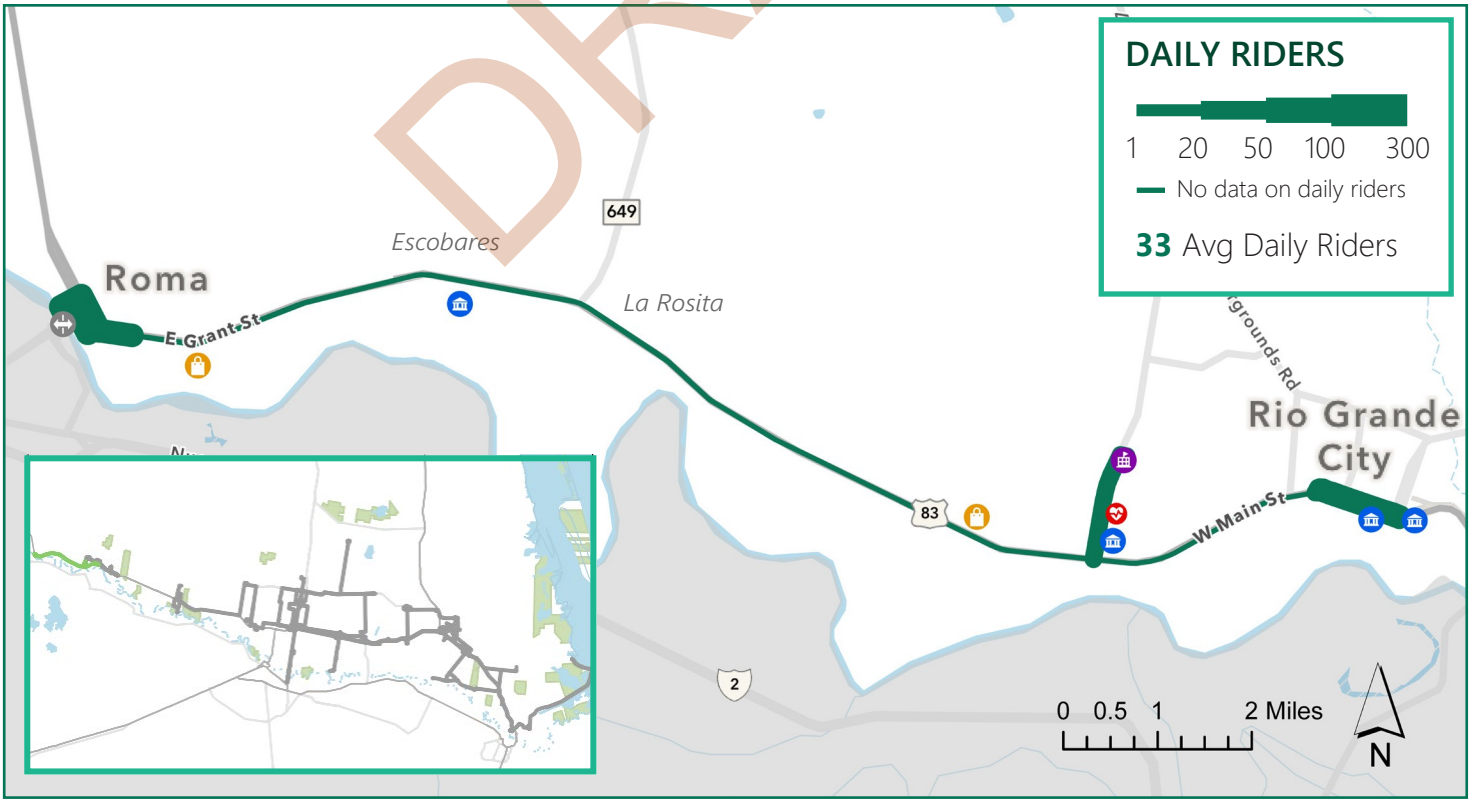
SCHOOL
South Texas College Starr County Campus

SHOPPING
Dollar Tree
Dollar General

MEDICAL
Starr County Memorial Hospital

BORDER CROSSING
Roma-Ciudad Miguel Alemán International Bridge

DRAFT



ROUTE 61

VALLEY METRO

ROUTE DETAILS

Route 61 services western Rio Grande City, following a fixed route unless passengers within a half mile of the route request pickup via phone at least one day in advance. The bus will leave the route, pick up the passenger, then return to the route to continue service. Route 61 operates Monday-Friday from 7:00am until 5:00pm.

KEY DESTINATIONS

SCHOOL
South Texas College Starr County Campus

SHOPPING
Dollar General

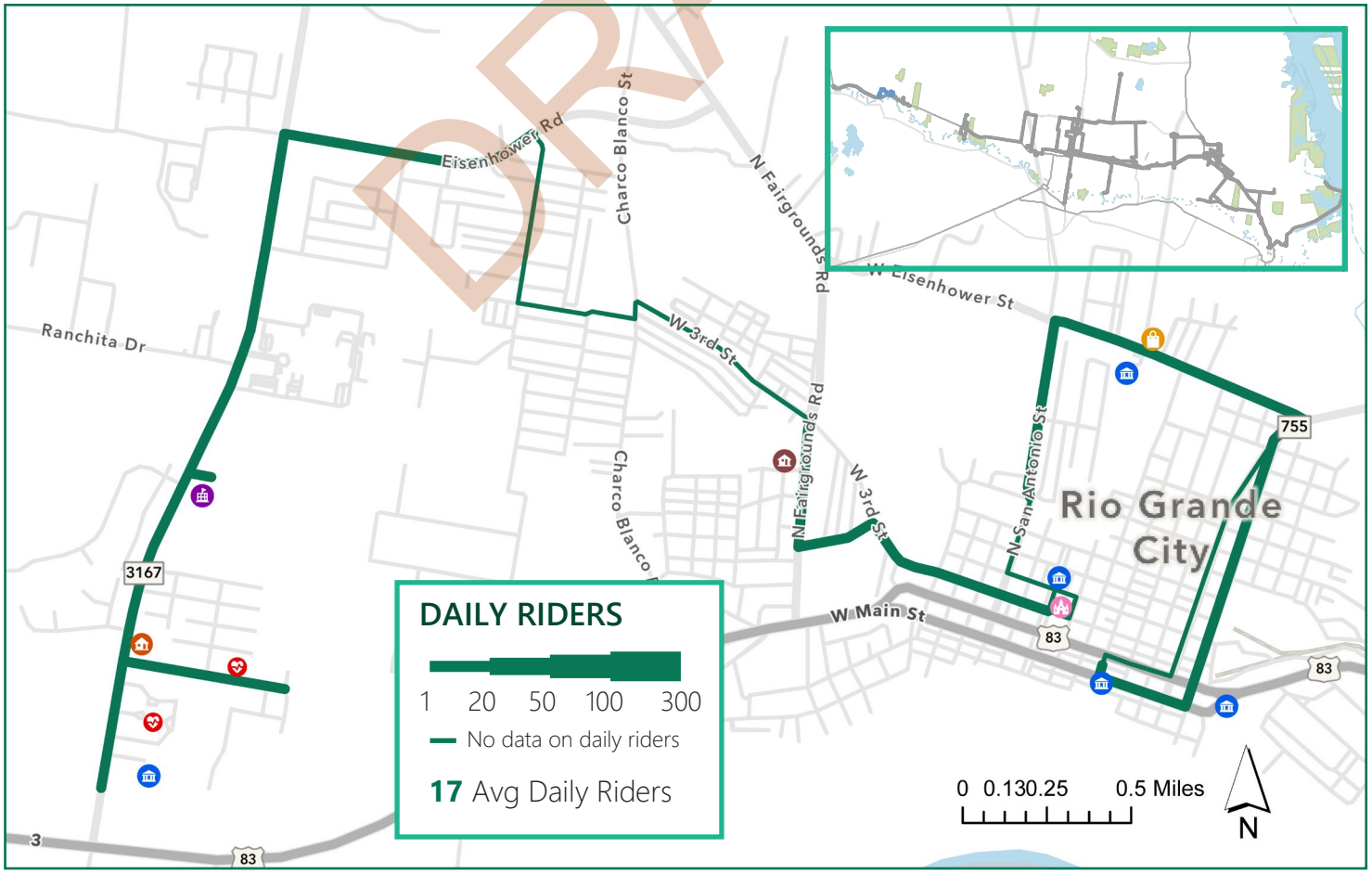
MEDICAL
Rio Grande City Nursing & Rehabilitation Center

COMMUNITY
Villa Vallarta Apartments
Central Plaza

GOVERNMENT
Rio Grande City Post Office
Starr County Courthouse
County Courthouse Annex

CHURCH
Immaculate Conception Catholic Church

DRAFT



ROUTE 62

VALLEY METRO

ROUTE DETAILS

Route 62 services eastern Rio Grande City, Las Lomas, and Santa Cruz following a fixed route unless passengers within a half mile of the route request pickup via phone at least one day in advance. The bus will leave the route, pick up the passenger, then return to the route to continue service. Route 62 operates Monday-Friday from 7:00am until 5:00pm.

KEY DESTINATIONS

GROCERY
- WalMart
- HEB Plus
- Mendoza Grocery
- A&A Grocery

GOVERNMENT
- City Hall - Rio Grande City
- WIC Clinic
- Workforce Solutions
- Rio Grande City Police & Fire Departments

COMMUNITY
- Starplex Theatre
- Julabe Event Center
- IBC Bank

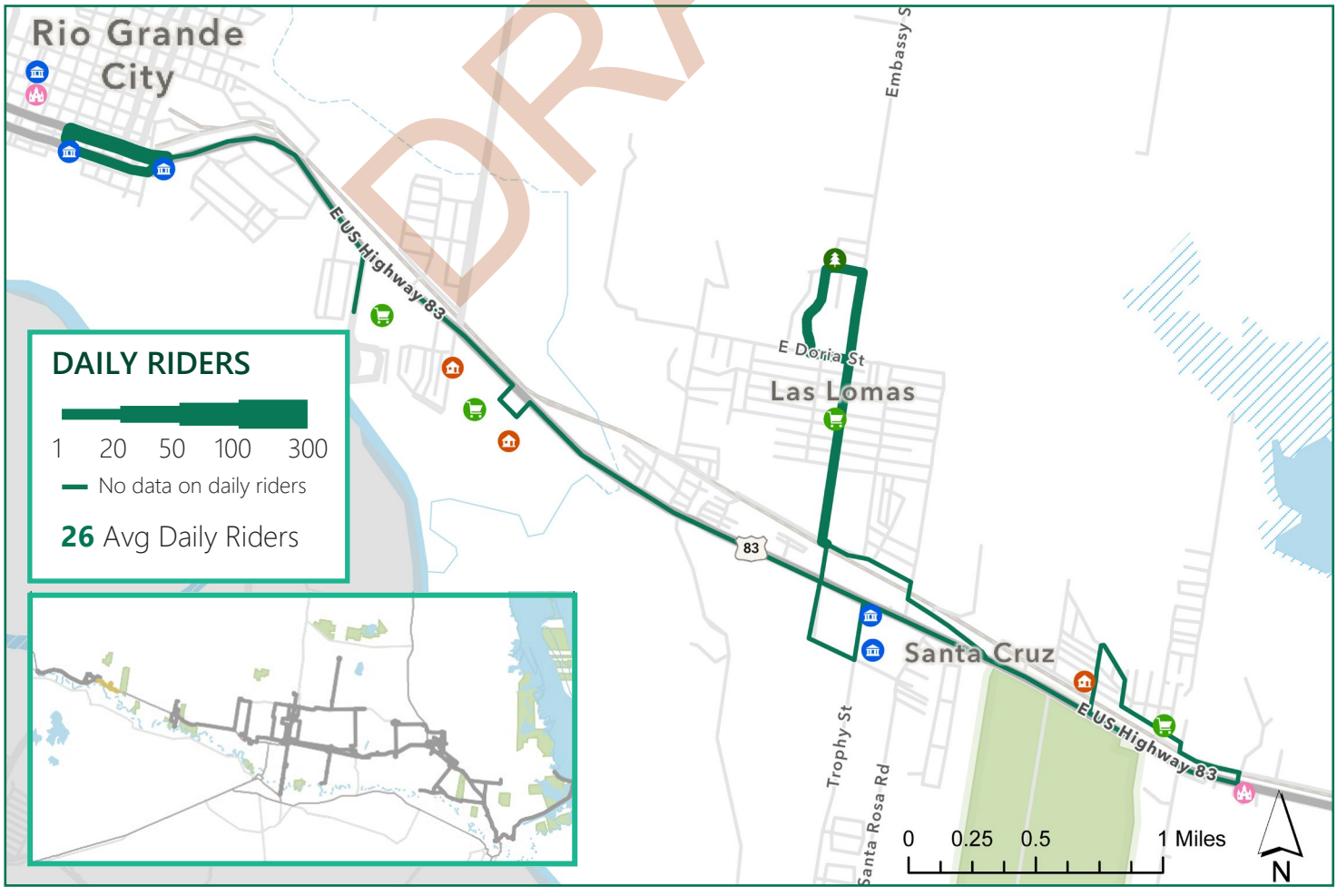
MEDICAL
- Santa Cruz Medical Plaza

SHOPPING
- Dollar General

CHURCH
- San Pablo Apostol Church

PARK
- Poke Park

DRAFT



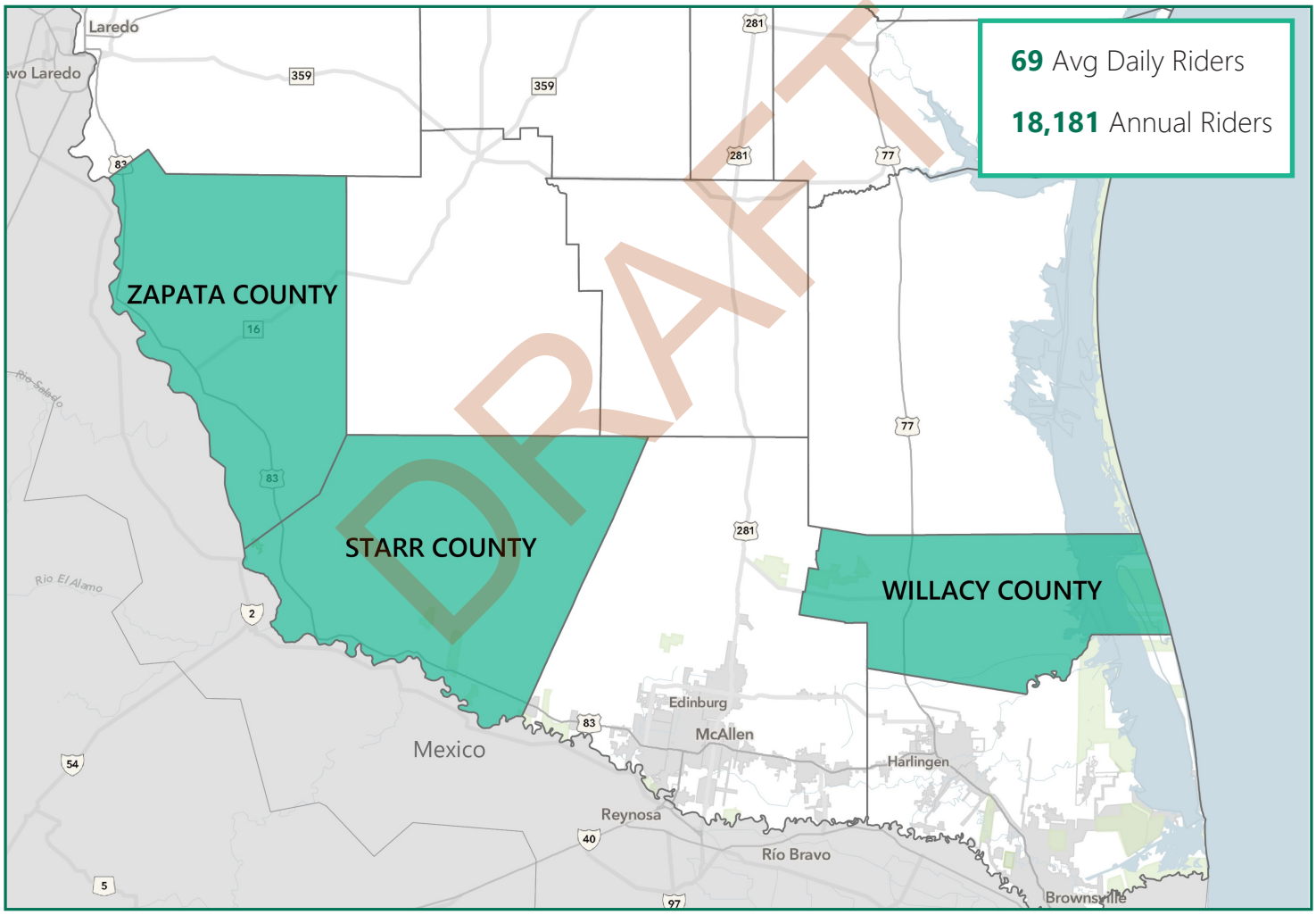
DEMAND RESPONSE SERVICE

VALLEY METRO

SERVICE DETAILS

Valley Metro's demand response service is a reservation-based program that operates on weekdays between 7:00 AM and 5:00 PM in Starr County, between 7:00 AM and 4:00 PM in Willacy County, and between 8:00 AM and 5:00 PM in Zapata County. Reservations should be made one day in advance for trips beginning and/or ending in those counties.

Trips from the Zapata town site may also be scheduled for cities outside the county boundary, including McAllen, Harlingen, Laredo, and Weslaco.



CITIES SERVICED

Zapata County
Zapata
Falcon Mesa

Starr County		
Alto Bonito	Midway	Rio Grande City
La Grulla	La Rosita	Roma
Garciasville	Garceno	Los Saenz
La Casita	Escobares	Fronton

Willacy County	
San Perlita	Sebastian
Port Mansfield	
Raymondville	
Lyford	

CAMPUS CONNECTOR

UTRGV VAQUERO

ROUTE DETAILS

UTRGV has branded the Campus Connector as a UTRGV Vaquero Express route. The Campus Connector connects the UTRGV Brownsville, Edinburg, and Harlingen campuses. Harlingen stops that are not scheduled may be requested upon boarding. The Campus Connector route operates Monday-Friday. The first bus from Edinburg is at 6:00am and the last is at 10:30pm. The first bus from Brownsville is at 6:00am and the last is at 11:45pm. Last departure on Friday is at 6:00pm.

KEY DESTINATIONS

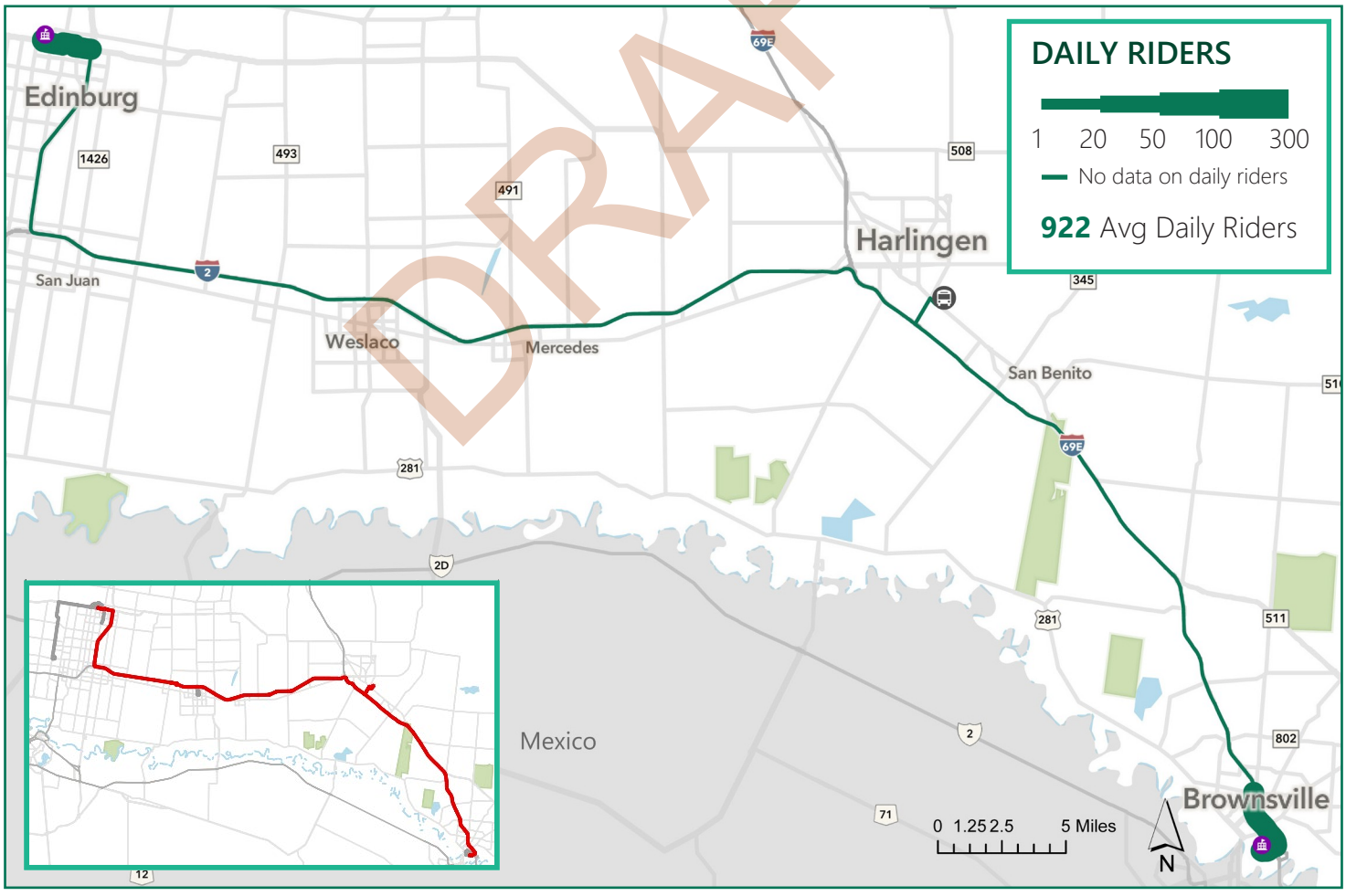
CONNECTION

UT Regional Academic Health Center

SCHOOL

UTRGV Edinburg Campus
UTRGV Brownsville Campus

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EDINBURG-WESLACO CONNECTOR

UTRGV VAQUERO

ROUTE DETAILS

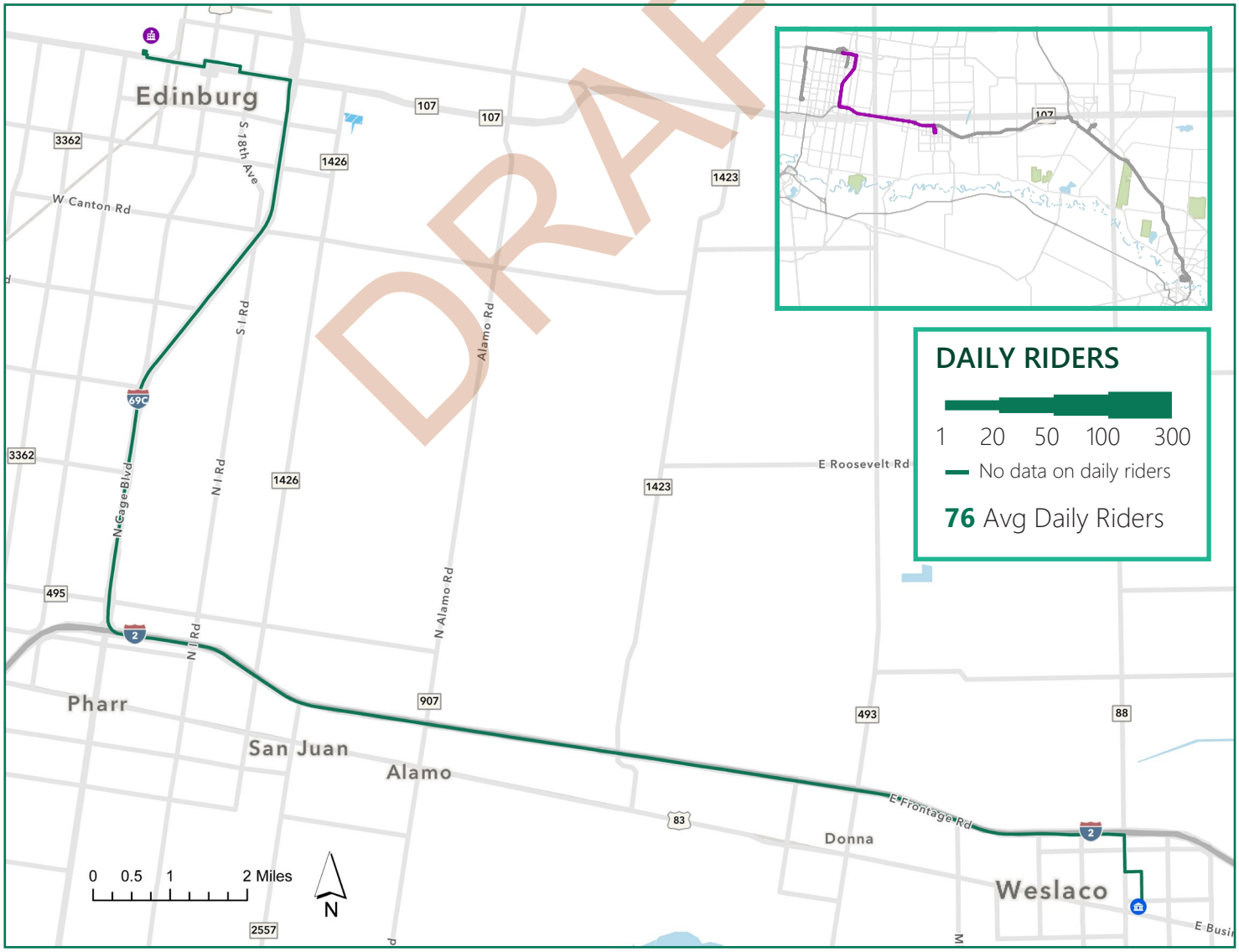
UTRGV has branded the Edinburg-Wesalco Connector as a UTRGV Vaquero Express route. The Edinburg to Weslaco Connector connects the UTRGV Edinburg campus to Weslaco and operates Monday-Friday. The first bus departs from Edinburg at 8:00am and the last departure is at 6:30pm. The last departure from Weslaco is at 7:30pm. On Friday the last departure is at 3:30pm.

KEY DESTINATIONS

SCHOOL
UTRGV Edinburg Campus

GOVERNMENT
Weslaco City Hall

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BROWNSVILLE-WESLACO CONNECTOR

UTRGV VAQUERO

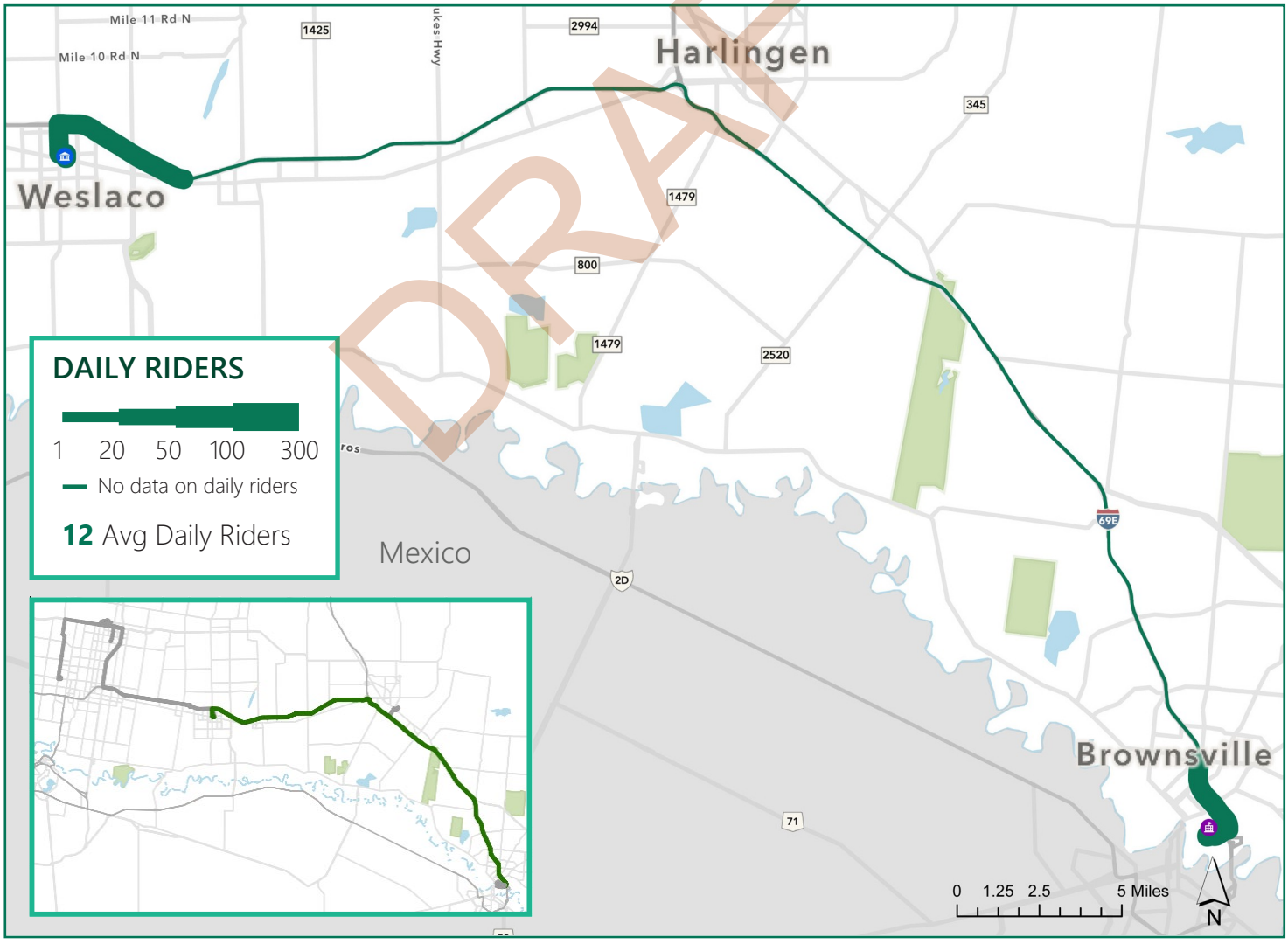
ROUTE DETAILS

UTRGV has branded the Brownsville-Weslaco Connector as a UTRGV Vaquero Express route. The Brownsville - Weslaco Connector connects the UTRGV Brownsville campus to Weslaco and operates Monday-Friday. The first bus departs from Brownsville at 8:00am and the last departure is at 6:30pm. The last departure from Weslaco is at 7:30pm. The last departure on Friday is at 3:30 P.M.

KEY DESTINATIONS

SCHOOL
UTRGV Brownsville Campus

GOVERNMENT
Weslaco City Hall



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RIO GRANDE CITY-MCALLEN CONNECTOR

UTRGV VAQUERO

ROUTE DETAILS

UTRGV has branded the Rio Grande City-McAllen Connector as a UTRGV Vaquero Express route. The Rio Grande - McAllen Connector connects the UTRGV Edinburg Campus to Rio Grande City via the STC Jag Express Green Line. Passengers must transfer buses at South Texas College Cooper Center in McAllen. This route is available Monday-Thursday departing from Rio Grande City to Edinburg at 6:05am, and departing from Edinburg to Rio Grande City at 4:45pm.

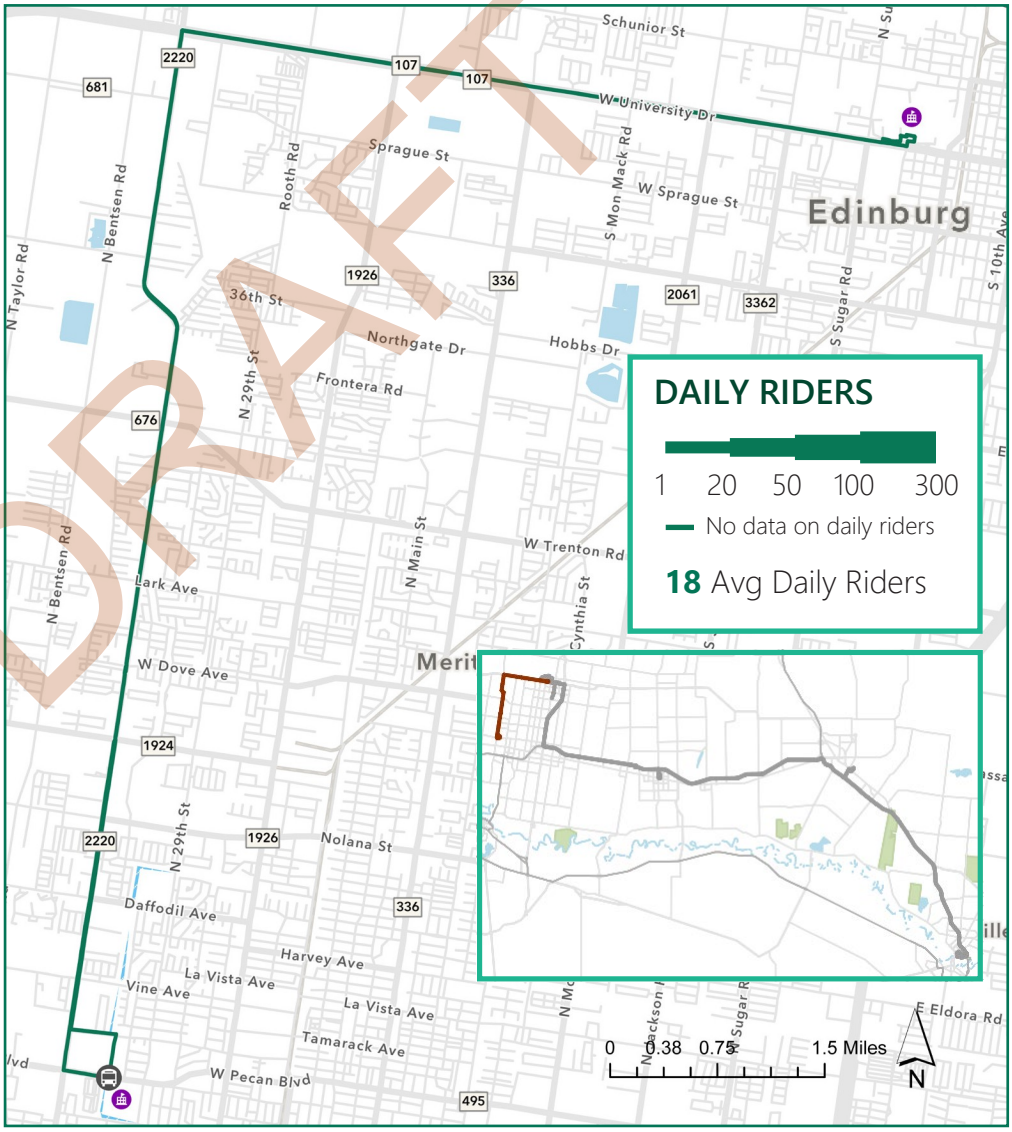
KEY DESTINATIONS

CONNECTION

South Texas College
Pecan Campus

SCHOOL

UTRGV Edinburg Campus
South Texas College
Pecan Campus



EVABL

UTRGV VAQUERO

ROUTE DETAILS

The EVABL route provides flexible service between the UTRGV Edinburg Campus Visitors Center and UTRGV Edinburg Visual Arts Building (EVAB). Passengers within a half mile of the route can request pickup via phone one day in advance. This route operates Monday-Friday from 7:30am until 10:30pm, providing service to City Hall, the Courthouse, and HEB upon request between 8:30pm and 10:30pm. Valley metro operates the route until 8:30pm, after which UTRGV runs the service.

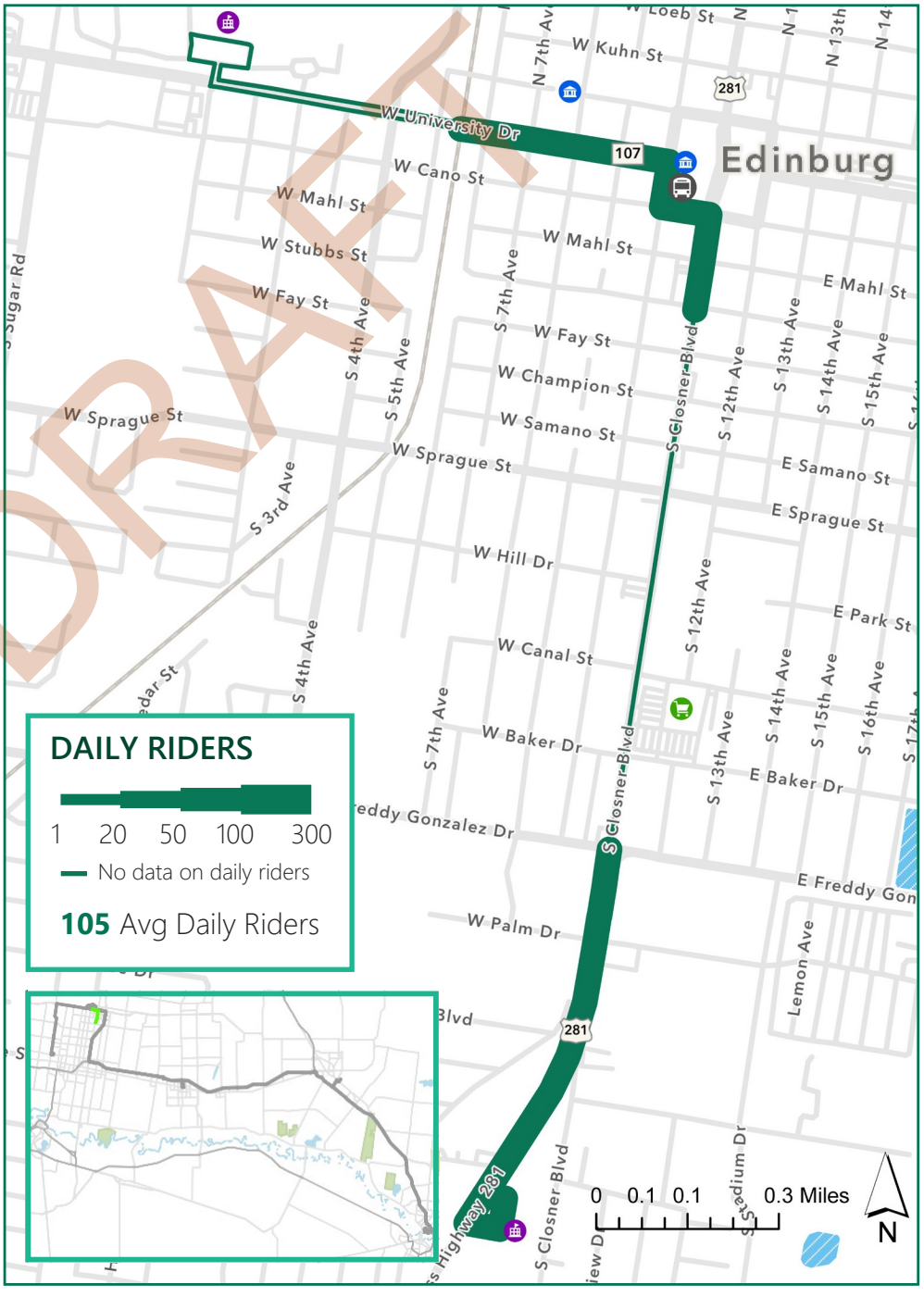
KEY DESTINATIONS

CONNECTION
Hidalgo County Courthouse

SCHOOL
UTRGV Edinburg Campus
UTRGV Visual Arts Building

GROCERY
HEB (Closner)

GOVERNMENT
Hidalgo County Courthouse
Edinburg City Hall



ORANGE, BLUE, AND GREEN CIRCUITS

UTRGV VOLT

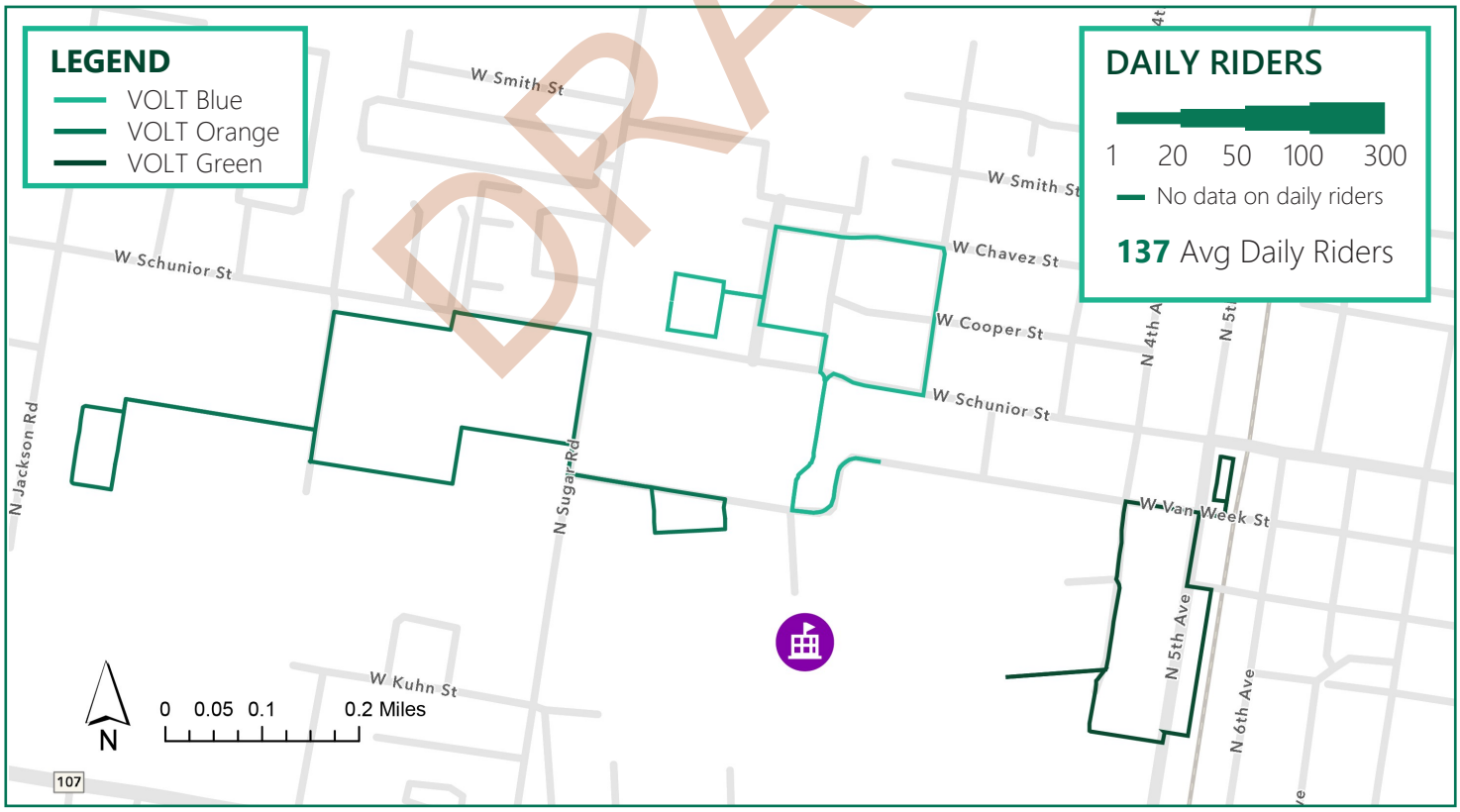
SERVICE DETAILS

UTRGV has branded the campus electric vehicle as the VOLT Circuits, which are operated through a partnership with Valley Metro. The Orange, Blue, and Green VOLT Circuits provide service in and around the Edinburg Campus. VOLT service also offers the convenience of call stops, which provide service outside the circuit alignments by reservation. The circuits operate Monday-Friday from 7:30am until 5:00pm.

STOPS

ORANGE	Lot E9 Lot E10 Lot E34 Soccer Field The Village Apartments Parking & Transportation Services	BLUE	Lot E12 Lot E31 Lot E32 Lot E33 Aaronson Library	GREEN	Lot E21 - A Lot E21 - B Lot E23 Sundial

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PINK AND YELLOW CIRCUITS

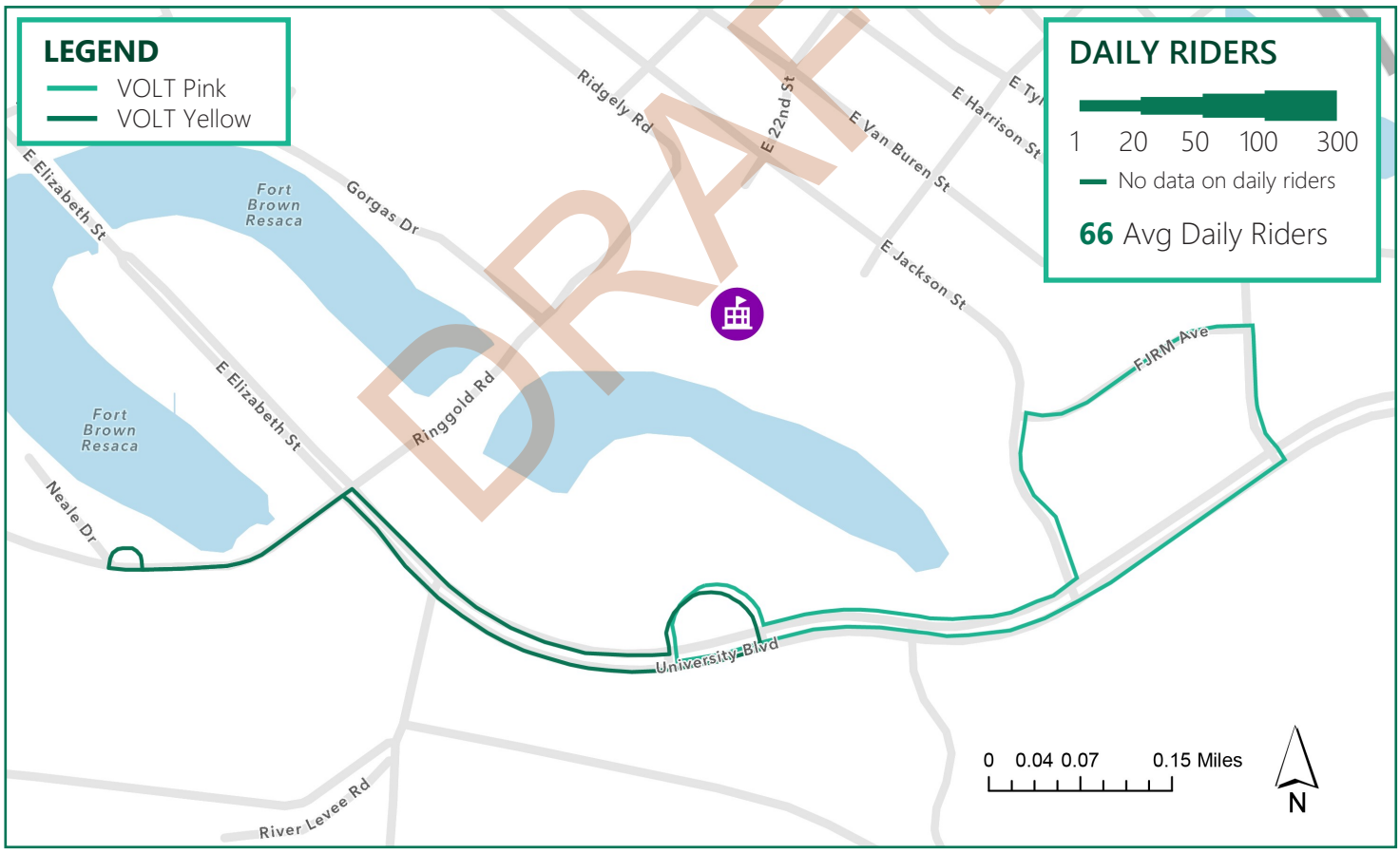
UTRGV VOLT

SERVICE DETAILS

UTRGV has branded the campus electric vehicle as the VOLT Circuits, which are operated through a partnership with Valley Metro. The Pink and Yellow VOLT Circuits provide service in and around the Brownsville Campus. VOLT service also offers the convenience of call stops, which provide service outside the circuit alignments by reservation. The circuits operate Monday-Friday from 7:30am until 5:00pm.

STOPS

YELLOW	Lot B1 Brownsville Early College High School	PINK	Lot B1 Lot B4



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GREEN LINE

SOUTH TEXAS COLLEGE

ROUTE DETAILS

Valley Metro provides funding to South Texas College to operate the Green Line. The South Texas College Routes are branded as the Jag Express. The Jag Express Green Line, operated by Valley Metro, provides fixed route service that connects STC Starr County and STC Pecan Campus. Multiple buses operate Monday-Thursday with only one bus on Fridays from 6:00am until 5:00pm. Transfer to Valley Metro Route 60 to Roma is available in Rio Grande City.

KEY DESTINATIONS

CONNECTION
South Texas College Pecan Campus
South Texas College Nursing & Allied Health Center

SCHOOL
South Texas College Pecan Campus
South Texas College Starr County Campus
La Joya Higher Ed Center

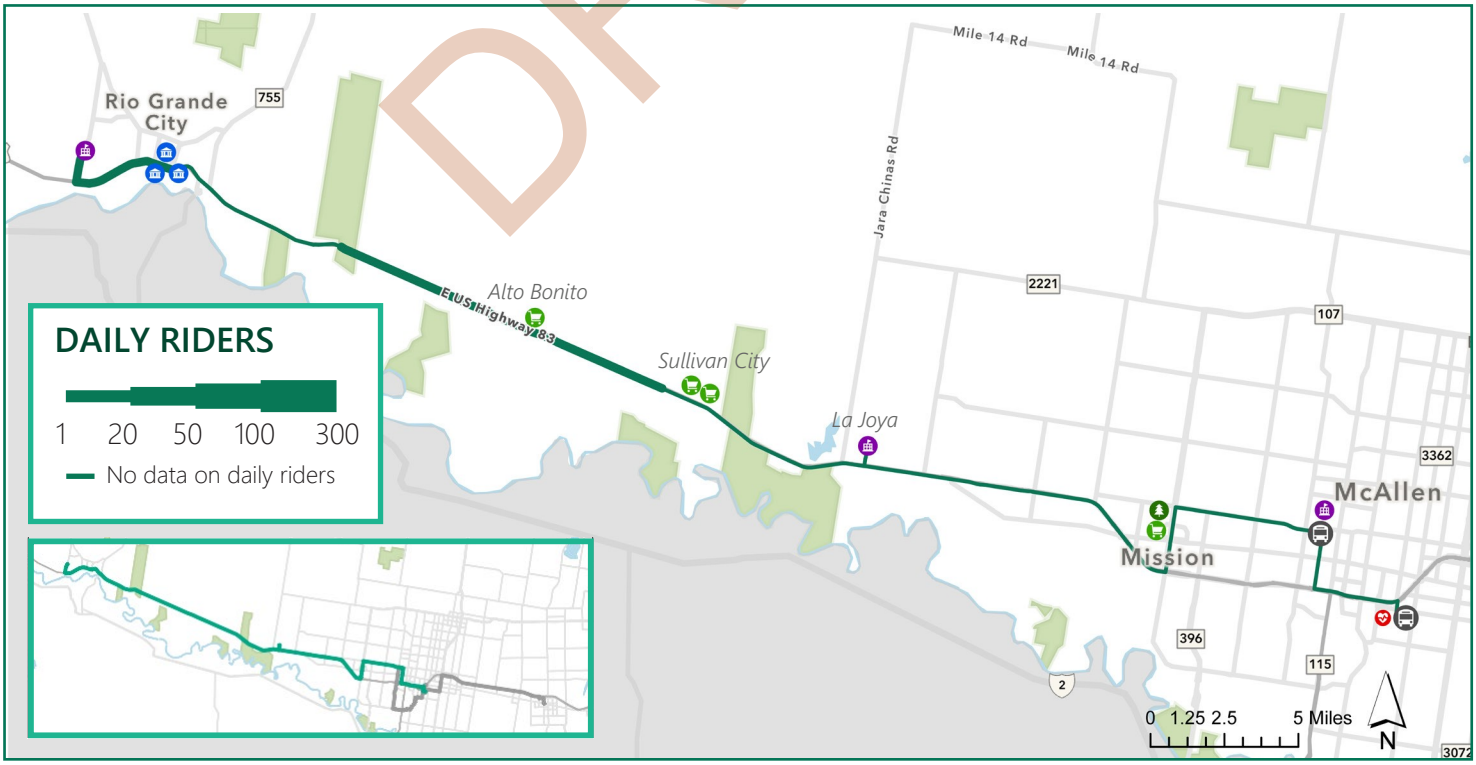
GROCERY
HEB (Mission)
Stripes (Alto Bonito)
Stripes (Sullivan City)
Jesse's Meat Market

GOVERNMENT
City Hall - Rio Grande City
Rio Grande City Police & Fire Departments

MEDICAL
South Texas College Nursing & Allied Health Center

PARK
Leo Peña Placita Park

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YELLOW LINE

SOUTH TEXAS COLLEGE

ROUTE DETAILS

Valley Metro provides funding to South Texas College to operate the Yellow Line. The South Texas College Routes are branded as the Jag Express. The Jag Express - Yellow Line, operated by STC, provides fixed route service that connects all STC campuses. The Yellow Line has five routes that serve alternate stops. Route 1 and 2 serving mainly Pecan and Tech operate Monday-Thursday from 7:00am to 7:00pm. Route 3 and 4 serving mainly Pecan and NAH operate Monday - Thursday from 7:00am to 4:20pm. Route 5 serving Tech and NAH operates Monday - Thursday from 7:20am to 5:00pm. On Friday only Route 1 operates from 7:00am to 5:00pm.

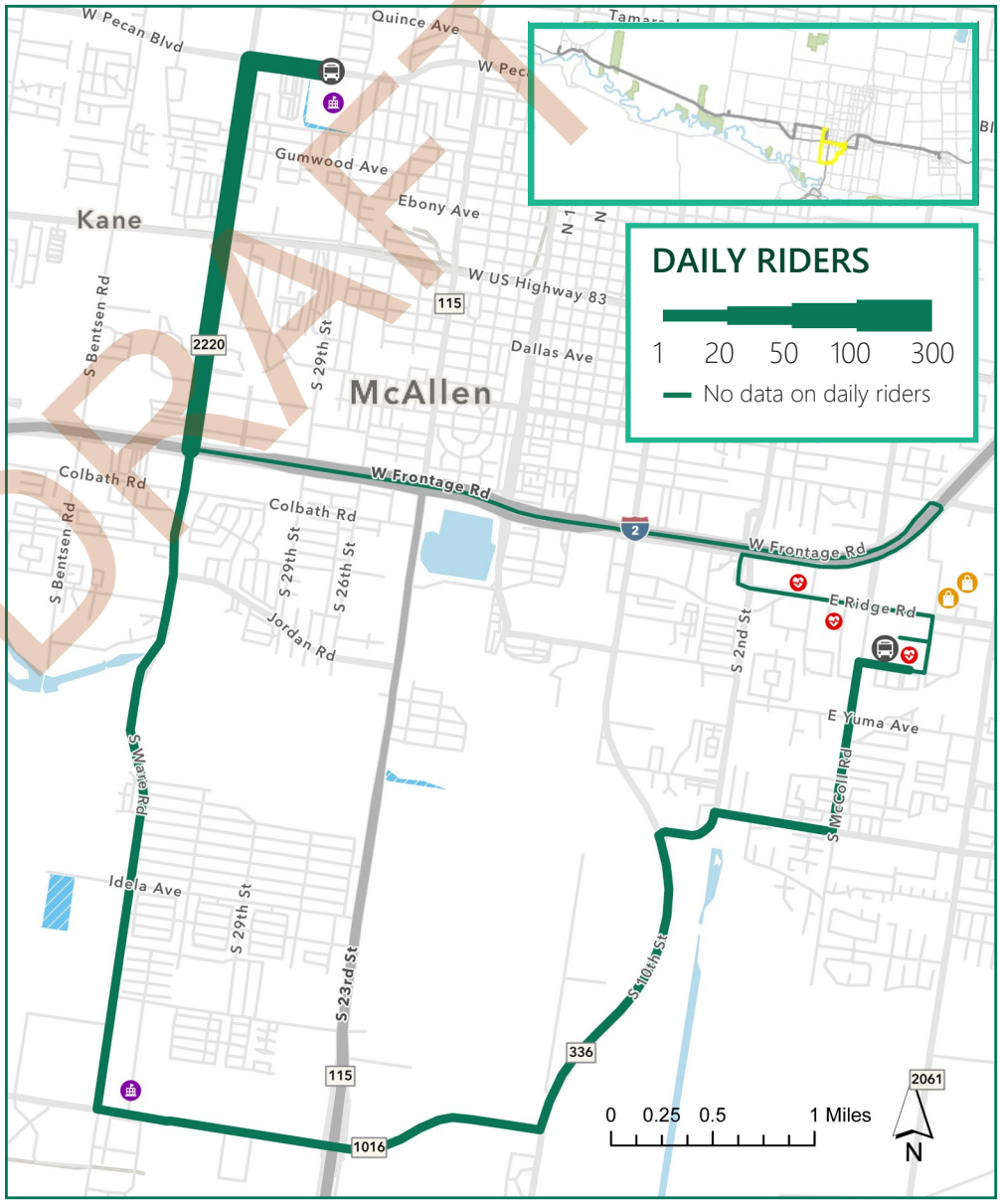
KEY DESTINATIONS

CONNECTION
South Texas College Pecan Campus
South Texas College Nursing & Allied Health Center

SCHOOL
South Texas College Pecan Campus
South Texas College Technology Campus

SHOPPING
Walgreens
Target

MEDICAL
South Texas College Nursing & Allied Health Center
McAllen Heart Hospital
Rio Grande Regional Hospital
McAllen Medical Plaza



PURPLE LINE

SOUTH TEXAS COLLEGE

ROUTE DETAILS

Valley Metro provides funding to South Texas College to operate the Purple Line. The South Texas College Routes are branded as the Jag Express. The Jag Express - Purple Line, operated by Valley Metro, provides fixed route service that serves Pharr, the Weslaco Mid-Valley Campus, and Nursing & the Allied Health Center. The Purple Line operates Monday-Friday from 6:40am until 7:15pm.

KEY DESTINATIONS

CONNECTION
South Texas College Nursing & Allied Health Center

SCHOOL
South Texas College Mid Valley Campus

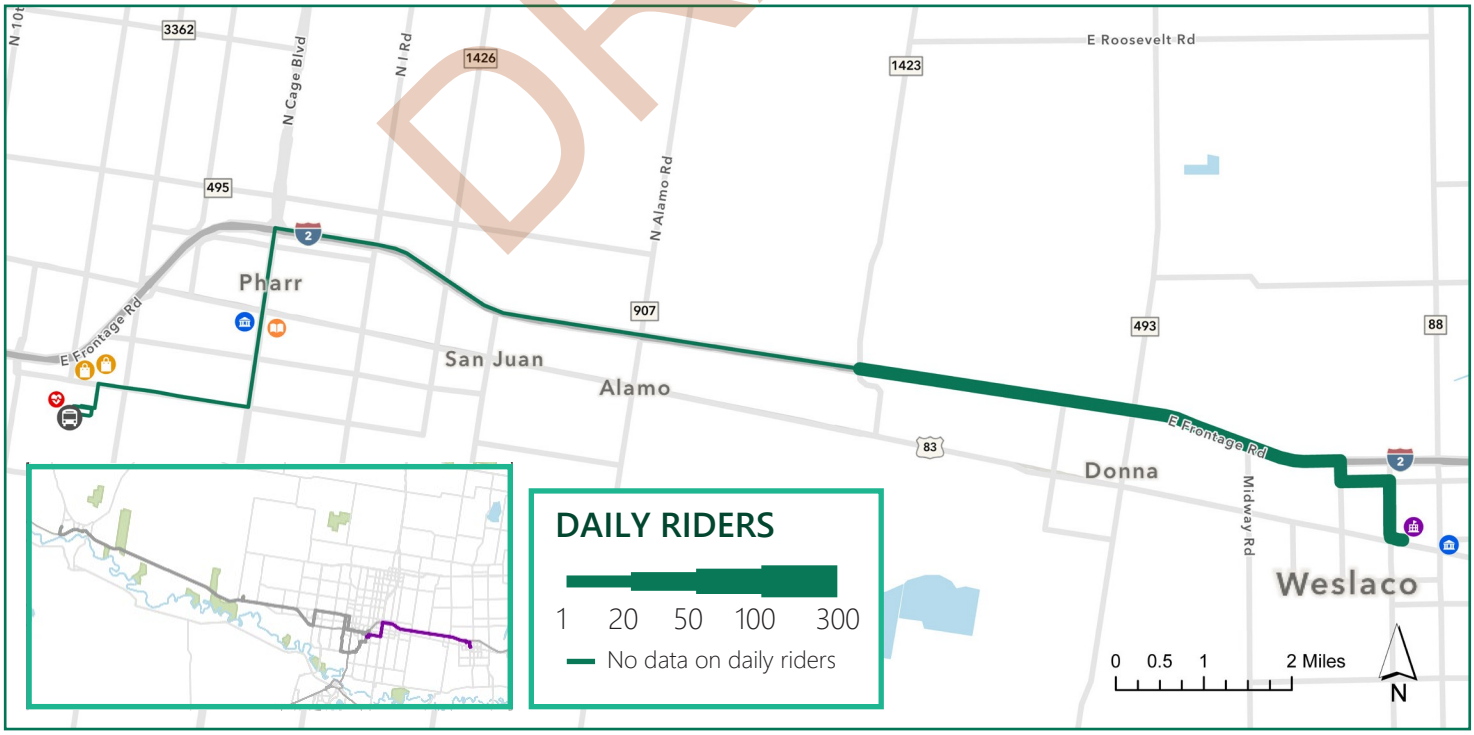
SHOPPING
Walgreens
Target

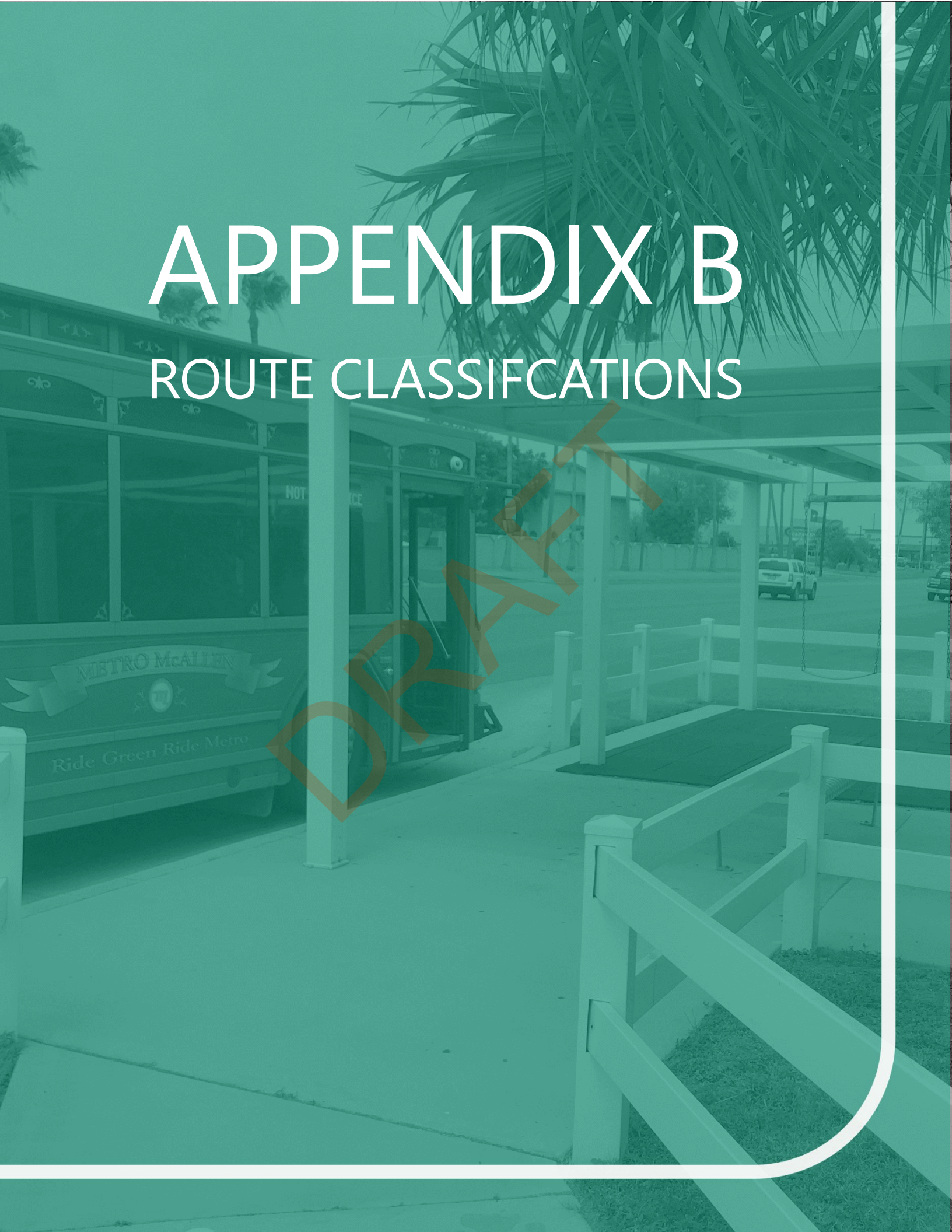
GOVERNMENT
Pharr City Hall
Weslaco City Hall

MEDICAL
South Texas College Nursing & Allied Health Center

LIBRARY
Pharr Memorial Library

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APPENDIX B

ROUTE CLASSIFCATIONS

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RGVMAB ROUTE CLASSIFICATIONS

Existing routes in the RGVMAB have been classified based on their service type. Route classifications may be subject to change over time due to changes in demand and local context. Routes added following the 2030 TDP process should be classified based on service type and local context.

Table B-1: RGVMAB Route Classifications

Provider	Route Name	Classification
Valley Metro	Route 10	Local – Urban
Valley Metro	Route 11	Local – Rural
Valley Metro	Route 12	Local – Urban
Valley Metro	Route 15	Local – Urban
Valley Metro	Route 16	Local – Urban
Valley Metro	Route 20	Local – Urban
Valley Metro	Route 21	Local – Rural
Valley Metro	Route 30	Local – Urban
Valley Metro	Route 31	Regional – Urban
Valley Metro	Route 32	Local – Urban
Valley Metro	Route 40	Local – Urban
Valley Metro	Route 41	Local – Urban
Valley Metro	Route 42	Local – Urban
Valley Metro	Route 43	Local – Rural
Valley Metro	Route 44	Local – Urban
Valley Metro	Route 45	Regional – Urban
Valley Metro	Route 50	Regional – Express
Valley Metro	Route 60	Local – Rural
Valley Metro	Route 61	Local – Rural
Valley Metro	Route 62	Local – Rural
Valley Metro	Red Line	Regional – Express
B Metro	Route 1	Local – Urban
B Metro	Route 2	Local – Urban
B Metro	Route 3	Local – Urban
B Metro	Route 4	Local – Urban
B Metro	Route 5	Local – Urban
B Metro	Route 6	Local – Urban
B Metro	Route 7	Local – Urban
B Metro	Route 8	Local – Urban
B Metro	Route 9	Local – Urban
B Metro	Route 11	Local – Urban
B Metro	Route 14	Local – Urban
B Metro	Route 30	Local – Rural

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Provider	Route Name	Classification
Island Metro	Route 1	Local – Urban
Island Metro	Route 2	Local – Urban
Island Metro	Route 3	Local – Rural
Island Metro	Route 4	Local – Urban
Metro McAllen	Route 1	Local – Urban
Metro McAllen	Route 2	Local – Urban
Metro McAllen	Route 3	Local – Urban
Metro McAllen	Route 4	Local – Urban
Metro McAllen	Route 5	Local – Urban
Metro McAllen	Route 6	Local – Urban
Metro McAllen	Route 7	Local – Urban
Metro McAllen	Route 8	Local – Urban
Metro McAllen	Route 9	Local – Urban
South Texas College	JagExpress Purple Line	Local – Urban
South Texas College	JagExpress Yellow Line	Local – Urban
South Texas College	JagExpress Green line	Regional – Urban
UT Rio Grande Valley	Campus Connector	Regional – Express
UT Rio Grande Valley	Edinburg-Weslaco Connector	Regional – Urban
UT Rio Grande Valley	Brownsville-Weslaco Connector	Regional – Urban
UT Rio Grande Valley	Rio Grande City-McAllen Connector	Local – Urban
UT Rio Grande Valley	EVABL	Local – Urban
UT Rio Grande Valley	VOLT Orange	Campus
UT Rio Grande Valley	VOLT Blue	Campus
UT Rio Grande Valley	VOLT Green	Campus
UT Rio Grande Valley	VOLT Pink	Campus
UT Rio Grande Valley	VOLT Yellow	Campus

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RGV MPO

in collaboration with

ATG ALLIANCE TRANSPORTATION GROUP

RIO GRANDE VALLEY MPO FY 2020-2021 UPWP

TASK NAME	UPWP TASK	UPWP Budget	FY 2020 Budget	Adjusted Ammount	FY 2020 ADJUSTED BUDGET	October 2019	November 2019	December 2019	January 2020	February 2020	March 2020	April 2020	May 2020	June 2020	July 2020	August 2020	September 2020	FY 2020 TOTAL	FY 2020 BALANCE
MPO Administration	1.1	**$1,069,367.13**	$445,036.00		$445,036.00	$30,067.26	$31,275.87	$35,531.58	$20,796.97	$36,156.59	$31,601.77	$39,516.84	$42,539.57	$51,913.28	$36,465.71	$22,686.92	$44,277.91	$422,830.27	$22,205.73
Public Participation Plan	1.2	**$276,628.66**	$121,785.00		$121,785.00	$8,727.57	$4,584.03	$2,853.38	$2,739.26	$1,647.87	$1,419.60	$3,548.95	$1,419.58	$2,129.30	$1,863.49	$2,857.82	$898.32	$34,689.17	$87,095.83
Training for TAC & TPC	1.3	**$5,468.25**	$2,250.00		$2,250.00	$0.00	$0.00	$0.00	$0.00	$0.00	$25.83	$0.00	$0.00	$0.00	$0.00	$0.00	$3,037.50	$3,063.33	$813.33
Computer Purchases	1.4	**$47,100.00**	$23,550.00		$23,550.00	$155.00	$2,982.79	$3,722.50	$0.00	$3,037.50	$9,100.00	$0.00	$0.00	$558.90	$310.00	$9,218.75	$3,173.21	$32,258.65	$8,708.65
Staff Development	1.5	**$129,530.67**	$55,320.00		$55,320.00	$635.87	$3,308.54	$5,415.28	$5,328.88	$6,382.72	$6,473.91	$0.00	$0.00	$2,144.39	$221.91	$0.00	$2,100.00	$27,811.50	$27,508.50
Demographic Data	2.1	**$127,163.33**	$51,775.00		$51,775.00	$1,477.82	$0.00	$4,710.58	$2,037.54	$4,115.22	$5,876.20	$6,992.15	$6,569.75	$7,140.49	$3,964.34	$0.00	$0.00	$42,884.09	$8,890.91
Title VI Civil Rights Evaluation	2.2	**$102,930.67**	$42,020.00		$42,020.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$3,226.32	$6,936.58	$7,581.83	$17,744.73	$24,275.27
Model Work	2.3	**$78,700.49**	$32,266.00		$32,266.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$12,266.09	$20,465.04	$21,527.07	$54,258.20	$21,992.20
Land Use Map	2.4	**$78,700.49**	$32,266.00		$32,266.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$32,266.00
Service Coordination	3.1	**$152,946.00**	$62,305.00		$62,305.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$6,130.00	$10,324.21	$9,517.64	$25,971.85	$36,333.15
Planning Assistance	3.2	**$219,344.00**	$88,420.00		$88,420.00	$2,380.65	$6,188.84	$17,447.18	$10,709.66	$11,652.69	$12,499.31	$5,203.05	$5,348.16	$7,514.80	$6,764.89	$0.00	$3,989.34	$89,698.57	$1,278.57
Project Selection Criteria	4.1	**$24,235.15**	$9,756.00		$9,756.00	$293.66	$0.00	$0.00	$0.00	$0.01	$0.00	$1,531.19	$177.54	$0.00	$0.00	$0.00	$0.00	$2,002.40	$7,753.60
Bike And Pedestrian	4.2	**$396,996.00**	$309,330.00	$250,000.00	$59,330.00	$880.95	$1,101.19	$862.58	$0.00	$819.21	$1,926.93	$1,680.69	$2,827.39	$523.29	$21,806.80	$39,023.88	$90,226.39	$161,679.30	$102,349.30
Truck Route & Freight Planning	4.3	**$72,700.49**	$29,266.00		$29,266.00	$0.00	$0.00	$293.63	$0.00	$426.29	$0.00	$296.54	$0.00	$0.00	$259.46	$389.21	$741.33	$2,406.46	$26,859.54
County Thoroughfare Plan	4.4	**$30,485.15**	$12,881.00		$12,881.00	$0.00	$0.00	$0.00	$0.00	$0.00	$2,452.01	$1,096.94	$0.00	$0.00	$0.00	$0.00	$0.00	$3,548.95	$9,332.05
Metropolitan Transportation Plan	4.5	**$316,772.67**	$295,795.00	$100,000.00	$195,795.00	$5,857.10	$6,786.13	$11,320.21	$13,100.59	$26,530.26	$9,806.98	$35,243.25	$8,408.00	$120,563.64	$92,423.18	$74,462.91	$112,060.14	$331,716.03	$135,921.03
Regional Transit Plan	5.1	**$504,465.33**	$472,510.00	$250,000.00	$222,510.00	$880.95	$587.30	$0.00	$287.91	$157.01	$0.00	$0.00	$0.00	$0.00	$168,093.94	$62,476.30	$90,322.46	$322,805.87	$100,295.87
Incident Management & Safety Study	5.2	**$48,465.33**	$19,510.00		$19,510.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$19,510.00
Congestion Data Collection	5.3	**$379,101.69**	$361,901.00	$75,000.00	$286,901.00	$0.00	$0.00	$1,463.09	$12,004.39	$39,175.11	$0.00	$65,511.63	$0.00	$34,804.27	$1,935.84	$70,167.60	$33,037.21	$258,099.14	$28,801.86
Corridor Study	5.4	**$74,285.15**	$59,781.00		$59,781.00	$0.00	$2,124.37	$0.00	$0.00	$0.11	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$2,124.48	$57,656.52
Traffic Counts	5.5	**$45,956.37**	$18,500.00		$18,500.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$18,500.00
	Totals	**$4,181,343.02**	$2,546,223.00		$1,871,223.00	$51,356.83	$58,939.06	$83,620.01	$67,005.20	$130,100.59	$81,182.54	$160,621.23	$67,289.99	$227,292.36	$170,885.61	$319,009.22	$418,290.35	$1,835,592.99	$35,630.01

TASK NAME	UPWP TASK	UPWP Budget	FY 2021 Budget	Adjusted Ammount	FY 2021 ADJUSTED BUDGET	October 2020	November 2020	December 2020	January 2021	February 2021	March 2021	April 2021	May 2021	June 2021	July 2021	August 2021	September 2021	FY 2021 TOTAL	FY 2021 BALANCE
MPO Administration	1.1	**$1,069,367.13**	$624,331.13		$624,331.13														$624,331.13
Public Participation Plan	1.2	**$276,628.66**	$154,843.66		$154,843.66														$154,843.66
Training for TAC & TPC	1.3	**$5,468.25**	$3,218.25		$3,218.25														$3,218.25
Computer Purchases	1.4	**$47,100.00**	$23,550.00		$23,550.00														$23,550.00
Staff Development	1.5	**$129,530.67**	$74,210.67		$74,210.67														$74,210.67
Demographic Data	2.1	**$127,163.33**	$75,388.33		$75,388.33														$75,388.33
Title VI Civil Rights Evaluation	2.2	**$102,930.67**	$60,910.67		$60,910.67														$60,910.67
Model Work	2.3	**$78,700.49**	$46,434.49		$46,434.49														$46,434.49
Land Use Map	2.4	**$78,700.49**	$46,434.49		$46,434.49														$46,434.49
Service Coordination	3.1	**$152,946.00**	$90,641.00		$90,641.00														$90,641.00
Planning Assistance	3.2	**$219,344.00**	$130,924.00		$130,924.00														$130,924.00
Project Selection Criteria	4.1	**$24,235.15**	$14,479.15		$14,479.15														$14,479.15
Bike And Pedestrian	4.2	**$396,996.00**	$87,666.00	$250,000.00	$337,666.00														$337,666.00
Truck Route & Freight Planning	4.3	**$72,700.49**	$43,434.49		$43,434.49														$43,434.49
County Thoroughfare Plan	4.4	**$30,485.15**	$17,604.15		$17,604.15														$17,604.15
Metropolitan Transportation Plan	4.5	**$316,772.67**	$20,977.67	$100,000.00	$120,977.67														$120,977.67
Regional Transit Plan	5.1	**$504,465.33**	$31,955.33	$250,000.00	$281,955.33														$281,955.33
Incident Management & Safety Study	5.2	**$48,465.33**	$28,955.33		$28,955.33														$28,955.33
Congestion Data Collection	5.3	**$379,101.69**	$17,200.69	$75,000.00	$92,200.69														$92,200.69
Corridor Study	5.4	**$74,285.15**	$14,504.15		$14,504.15														$14,504.15
Traffic Counts	5.5	**$45,956.37**	$27,456.37		$27,456.37														$27,456.37
	Totals	**$4,181,343.02**	$1,635,120.02		$2,310,120.02														$2,310,120.02

FY 2020 Task	Adjusted upwp	Total Spent	% of adjust. Budget spent	Amount we should've spent	Difference
1	$647,941.00	$520,652.92	80.35%	$647,941	$127,288
2	$158,327.00	$114,887.02	72.56%	$158,327	$43,440
3	$150,725.00	$115,670.42	76.74%	$150,725	$35,055
4	$307,028.00	$501,353.14	163.29%	$307,028	($194,325)
5	$607,202.00	$583,029.49	96.02%	$607,202	$24,173
Totals	**$1,871,223.00**	**$1,835,592.99**	**98.10%**	**$1,871,223.00**	**$35,630.01**
			100.00%		

FY 2021 Task	Adjusted upwp	Total Spent	% of adjust. Budget spent	Amount we should've spent	Difference
1	$880,153.71	$0.00	0.00%	$0	$0
2	$229,167.98	$0.00	0.00%	$0	$0
3	$221,565.00	$0.00	0.00%	$0	$0
4	$534,161.46	$0.00	0.00%	$0	$0
5	$445,071.87	$0.00	0.00%	$0	$0
Totals	**$2,310,120.02**	**$0.00**	**0.00%**	**$0.00**	**$0.00**
			0.00%		

FY 2020 Task	UPWP	Total Spent	% of adjust. Budget spent	Amount we should've spent	Difference
1	$1,528,094.71	$520,652.92	34.07%	$764,047	$243,394
2	$387,494.98	$114,887.02	29.65%	$193,747	$78,860
3	$372,290.00	$115,670.42	31.07%	$186,145	$70,475
4	$841,189.46	$501,353.14	59.60%	$420,595	($80,758)
5	$1,052,273.87	$583,029.49	55.41%	$526,137	($56,893)
Totals	**$4,181,343.02**	**$1,835,592.99**	**43.90%**	**$2,090,671.51**	**$255,078.52**
			50.00%		

October 1, 2020

TxDOT Monthly Letting Update

(Projects within Rio Grande Valley MPO Area)

PROJECTS TO BE LET IN November 2020

Hwy	CO	Limits	Description	Estimate / Low Bid	Funding Categories
LL-North Alamo Rd *0921-02-311*	HID	FM 1925 to .54 Miles North of FM 1925	New Location – 2 Lane Rural Roadway	$607,100 / $0.00	CAT 3 & 7
LL-Mile 3 N *0921-02-321*	HID	Tom Gill Rd to Goodwin Rd	Reconstruct & Widen from 2 lane to 4 lane divided – C&G	$14,191,784 / $0.00	CAT 3, 7 & 12

PROJECTS TO BE LET IN December 2020

Hwy	CO	Limits	Description	Estimate / Low Bid	Funding Categories
LL-Various *0921-06-345*	CAM	On Robles Rd from FM 1846 to Arroyo Colorado	Port of Harlingen Authority Queuing Area	$5,262,841 / $0.00	Rider 38
LL-BMetro Transfer Station *0921-06-304*	CAM	@ Jose Coluga Jr & Billy Mitchell	Construct BUS Facility	$985,612 / $0.00	CAT 3 & 9
LL-PSJA Tri-City Ped Safety Improvement *0921-02-391*	HID	Within City Limits of Alamo, Pharr & San Juan	Construct Safety Ped Improvements	$2,014,506 / $0.00	CAT 3 & 9

PROJECTS TO BE LET IN April 2021

Hwy	CO	Limits	Description	Estimate / Low Bid	Funding Categories
LL-365 Tollway *0921-02-368*	HID	FM 396 TO US 281	Construct 4 Ln Controlled Access Tolled Facility	$260,123,640 / $0.00	CAT 3, 10, 11B & 12
S Parallel Corridor *0921-06-252*	CAM	FM 509 to FM 1577	Construct 2 Lane Rural	$8,368,925 / $0.00	CAT 3, 10, 11B

PROJECTS TO BE LET IN May 2021

Hwy	CO	Limits	Description	Estimate / Low Bid	Funding Categories
LL-Cano St Hike & Bike *0921-02-392*	HID	Cano St to Freddy Gonzalez St	Installation of Solar Powered Lighting	$534,400 / $0.00	CAT 3 & 9

Disclaimer: Work in Progress and Subject to Change

October 1, 2020

PROJECTS TO BE LET IN July 2021

Hwy	CO	Limits	Description	Estimate / Low Bid	Funding Categories
LL-FM 1926 *1804-01-068*	HID	@ FM 1926 (23rd St) & Hackberry Ave	Addition of North & South Bound Center Turn Lanes	$150,968 / $0.00	CAT 7
LL-FM 1926 *1804-01-069*	HID	@ FM 1926 (23rd St) & Kendlewood Ave	Addition of North & South Bound Center Turn Lanes	$103,113 / $0.00	CAT 7

Disclaimer: Work in Progress and Subject to Change

PHARR DISTRICT MASTER LETTING PLAN - FY 2020 + <<FOR INTERNAL TxDOT PHARR DISTRICT USE ONLY>> (JS Revised 11-5-2020)

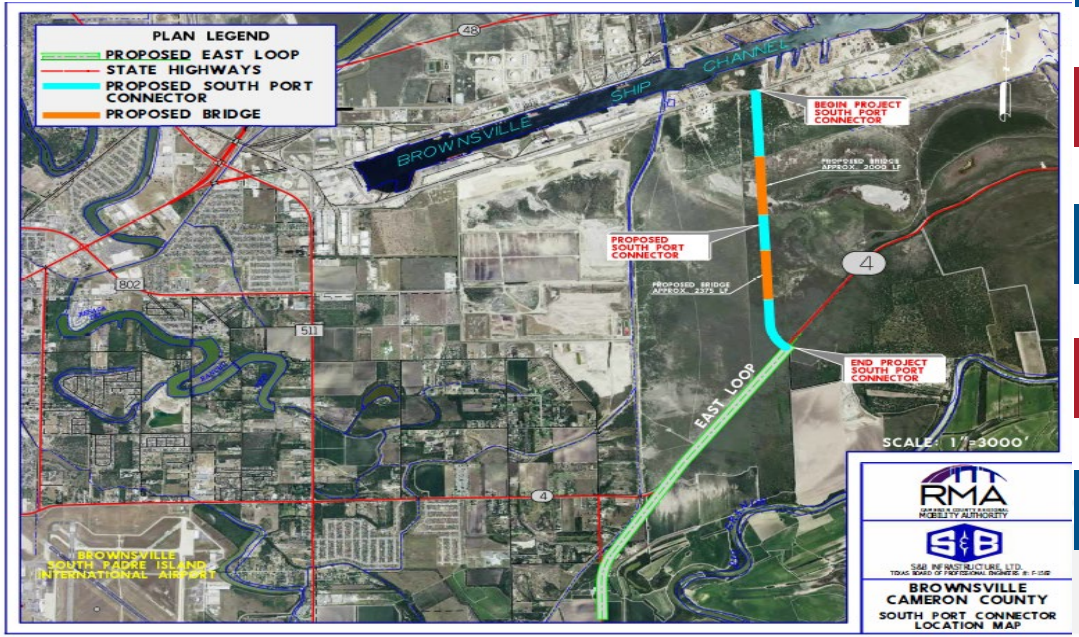
Let Date	Co	Highway	CSJ	Description	Limits	DISTRICT FUND 6						STATEWIDE FUND 6					Cat 11 (RIDER 11B)/(Rider 45)	Cat 11 (Energy Sector)	Overall Total
						Cat 1 Rehab	Cat 1 PM	DISTRICT Cat 1 TOTALS	Cat 10 Charge (CBI)	Cat 12	DISTRICT FUND 6 TOTALS	Cat 6/RGS	Cat 3 Local	STATEWIDE FUND 6 TOTALS	Cat 3 Pass Thru	DISTRICT NON-TRADITIONAL TOTALS			
Construction Lettings																			
Sep-20	HID	FM 1017	1227-04-022, etc.	Seal Coat	Hidalgo/Starr C.L. to US 281		$ 1,532,884	$ 1,366,830			$ -			$ -		$ -		$ -	$ 1,366,830
	HID	>FM 494	0864-01-077	Seal Coat	RR Tracks to FM 1016		$ 155,138	$ 175,268			$ -			$ -		$ -		$ -	$ 175,268
	HID	>FM 681	0669-01-063	Seal Coat	FM 1017 TO FM 490		$ 598,288	$ 567,206			$ -			$ -		$ -		$ -	$ 567,206
	HID	>FM 88	0698-03-097	Seal Coat	18th St. to 0.05 Miles South of West Chaparral Dr.		$ 25,998	$ 24,775			$ -			$ -		$ -		$ -	$ 24,775
	HID	>FM 3072	3098-01-015	Seal Coat	I Rd. (Veterans Blvd.) to FM 907		$ 131,331	$ 329,484			$ -			$ -		$ -		$ -	$ 329,484
	HID	>FM 1423	1427-02-007	Seal Coat	BUS 83 to (1.389 Miles South of Bus 83)		$ 121,834	$ 27,366			$ -			$ -		$ -		$ -	$ 27,366
	HID	>US 281	0220-01-036	Seal Coat	FM 2557 to FM 1015		$ 27,272	$ 969,447			$ -			$ -		$ -		$ -	$ 969,447
	CAM	>FM 3068	0684-04-007	Seal Coat	FM 511 to FM 1419		$ 70,752	$ 69,099			$ -			$ -		$ -		$ -	$ 69,099
	CAM	>LP 499	1137-02-039	Seal Coat	BUS 77 to BUS 77 SS 206/FM 106		$ 121,118	$ 124,485			$ -			$ -		$ -		$ -	$ 124,485
	CAM	>FM 510	1057-03-049	Seal Coat	BUS 77 to FM 3462		$ 108,749	$ 107,790			$ -			$ -		$ -		$ -	$ 107,790
	CAM	>FM 507	0873-01-027	Seal Coat	FM 508 to BUS 77		$ 237,376	$ 217,296			$ -			$ -		$ -		$ -	$ 217,296
	CAM	>FM 1575	1505-01-017	Seal Coat	FM 510 to SH 100		$ 199,266	$ 191,429			$ -			$ -		$ -		$ -	$ 191,429
	CAM	>FM 3248	2717-01-028	Seal Coat	US 281 to IH 69E		$ 322,538	$ 309,776			$ -			$ -		$ -		$ -	$ 309,776
	HiID	>FM 88	0698-04-009	Seal Coat	0.05 Miles South of West Chaparral Dr. to US 281		$ 997,470	$ 141,565			$ -			$ -		$ -		$ -	$ 141,565
	HID	>SH 107	0528-01-119	Seal Coat	0.2 Mi E of Stewart Rd. to FM 2061		$ 596,911	$ 546,617			$ -			$ -		$ -		$ -	$ 546,617
	CAM	>SH 48	0220-07-062	Seal Coat	SH 550 to SH 100		$ 1,404,130	$ 1,188,339			$ -			$ -		$ -		$ -	$ 1,188,339
	CAM	>FM 2556	2529-01-023	Seal Coat	IH-2 to Bus 83		$ 570,685	$ 34,541			$ -			$ -		$ -		$ -	$ 34,541
	CAM	>FM 510	1057-03-050	SealCoat	FM 2480 to Buena Vista Rd.		$ 161,685	$ 128,713			$ -			$ -		$ -		$ -	$ 128,713
	CAM	>FM 510	0775-01-019	SealCoat	Buena Vista Rd. to SH 100		$ 260,018	$ 217,886			$ -			$ -		$ -		$ -	$ 217,886
						$ -	$ 7,643,443	$ 6,737,912	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,737,912
Oct-20		NO PROJECTS		NO PROJECTS														$ -	$ -
						$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Nov-20	HID	FM 88	0698-03-099	Overlay	Mile 12 Rd to IH-2		$ 2,588,243	$ 2,893,724			$ -			$ -		$ -		$ -	$ 2,893,724
	HID	>SH 107	0528-01-120	Overlay	SH 495 to BUS 83		$ 666,704	$ 738,879			$ -			$ -		$ -		$ -	$ 738,879
	HID	>SH 107	0219-01-060	Overlay	BUS 83 to IH-2		$ 490,309	$ 543,436			$ -			$ -		$ -		$ -	$ 543,436
	HID	>FM 88	0698-03-098	Overlay	IH 2 to BUS 83		$ 499,722	$ 557,518			$ -			$ -		$ -		$ -	$ 557,518
	HID	>FM 681	0669-01-065	Overlay	FM 1925 to .25 Miles North of FM 2221		$ 770,111	$ 871,243			$ -			$ -		$ -		$ -	$ 871,243
	HID	>FM 88	0698-03-103	Overlay	Bus 83 to 18th St.		$ 699,529	$ 761,536			$ -			$ -		$ -		$ -	$ 761,536
Nov-20	CAM	SH 100	0331-01-052	Rehabilitation	S Mesquite St. to 567 Ft. East of Ebanos St.	$ 4,786,164		$ 4,241,029			$ -			$ -		$ -		$ -	$ 4,241,029
						$ 4,786,164	$ 5,714,618	$ 10,500,782	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,607,365
Dec-20		NO PROJECTS						$ -			$ -			$ -		$ -		$ -	$ -
						$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Jan-21		NO PROJECTS						$ -			$ -			$ -		$ -		$ -	$ -
						$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Feb-21	HID	FM 1423	1427-01-040, etc.	Overlay	IH-2 to Bus 83		$ 1,263,294	$ 1,263,294			$ -			$ -		$ -		$ -	$ 1,263,294
	HID	>FM 1423	1427-01-041	Overlay	SH 107 to Wisconsin Rd		$ 1,033,612	$ 1,033,612			$ -			$ -		$ -		$ -	$ 1,033,612
	HID	>FM 493	0863-01-071	Overlay	IH-2 to Bus 83		$ 465,375	$ 465,375			$ -			$ -		$ -		$ -	$ 465,375
	HID	>FM 2061	1939-02-040	Overlay	Ridge Rd to FM 3072		$ 2,684,253	$ 2,684,253			$ -			$ -		$ -		$ -	$ 2,684,253
	CAM	>BUS 77X	0327-08-099	Overlay	FM 507 to Floodway Bridge		$ 1,645,218	$ 1,645,218			$ -			$ -		$ -		$ -	$ 1,645,218
	CAM	>BUS 77X	0039-12-255	Overlay	Floodway Bridge to LP 499		$ 379,458	$ 379,458			$ -			$ -		$ -		$ -	$ 379,458
						$ -	$ 7,471,210	$ 7,471,210	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 7,471,210
Mar-21	HID	FM 2221	0862-01-059	Rehabilitation	FM 492 to FM 681	$ 3,248,400		$ 3,248,400			$ -			$ -		$ -		$ -	$ 3,248,400
						$ 3,248,400	$ -	$ 3,248,400	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,248,400
Apr-21		NO PROJECTS						$ -			$ -			$ -		$ -		$ -	$ -
						$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
May-21		NO PROJECTS						$ -			$ -			$ -		$ -		$ -	$ -
						$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Jun-21	CAM	FM 511	0684-02-014	Replace Bridge and Approaches	.4 Mi S of SH 4 STR# 0684-02-007 To Over Drainage Ditch			$ -			$ -	$ 911,397		$ 911,397		$ -		$ -	$ 911,397
						$ -	$ -	$ -	$ -	$ -	$ -	$ 911,397	$ -	$ 911,397	$ -	$ -	$ -	$ -	$ 911,397
Jul-21		NO PROJECTS						$ -			$ -			$ -		$ -		$ -	$ -
						$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Aug-21	VAR	Various	0921-02-465	Network, Integrate, and Updgrade Signal Cabinet Equipment	Various			$ -		$ 7,089,796	$ 7,089,796			$ -		$ -		$ -	$ 7,089,796
						$ -	$ -	$ -	$ -	$ 7,089,796	$ 7,089,796	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 7,089,796
								$ 27,958,304			$ 7,089,796			$ 911,397		$ -		$ -	$ 35,959,497

CCRMA
Project Status Presentation
RGVMPO TAC Meeting

November 19, 2020

RMA
CAMERON COUNTY REGIONAL
MOBILITY AUTHORITY

South Port Connector
CSJ: 0921-06-288

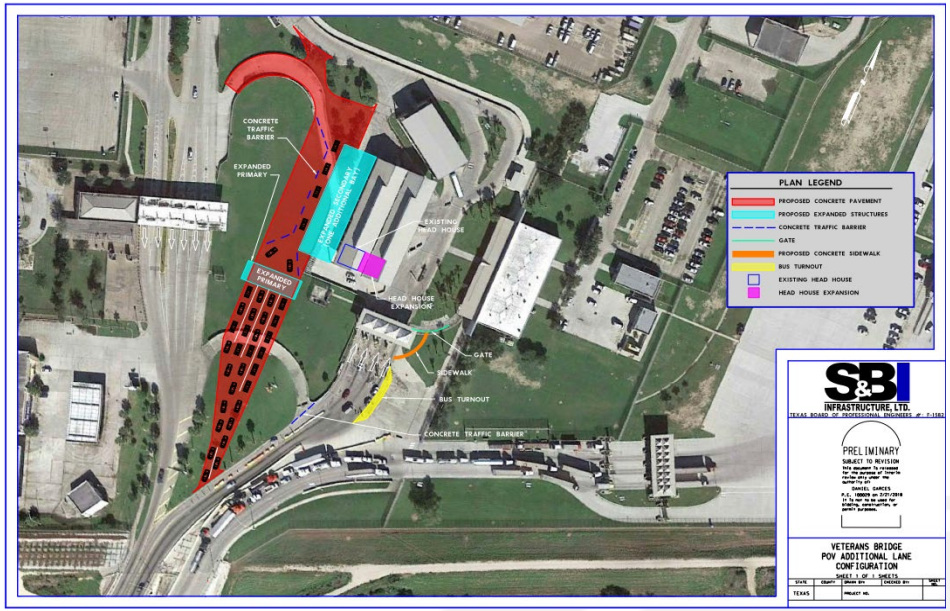


1	Environmental	✓
2	Preliminary Engineering	✓
3	ROW & Utilities:	✓
4	Design	✓
5	Funding	✓

Recent Activity:
- Construction is underway

→ Under Construction

Veterans POV Expansion
CSJ: 0921-06-313



1	Environmental	✓
2	Preliminary Engineering	✓
3	ROW & Utilities:	✓
4	Design	✓
5	Funding	✓

Recent Activity:

- CBP/GSA Approval Received – Pending Final DAA
- Received TxDOT concurrence on Public Interest Finding for specialized equipment
- Pending – TxDOT Final Approval for Project Letting / Approval of 100% PS&E
- Ready-to-Let in FY 2021

→ Shovel Ready

SH 550 GAP 2 Project
CSJ: 0684-01-068



SH 550

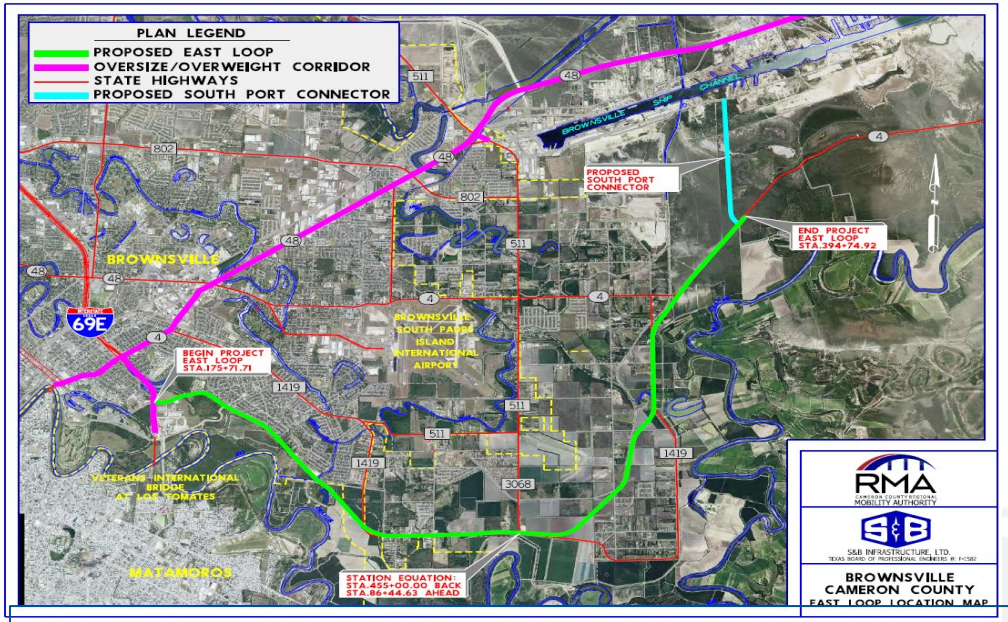
1	Environmental	✓
2	Preliminary Engineering	✓
3	ROW & Utilities:	✓
4	Design	- Update in Progress
5	Funding	✓

Recent Activity:

- ROW in Place / Utilities Adjusted
- Environmental Re Evaluation Underway
- PS&E-60% complete
- Anticipated Ready to Let in FY 2021
- TxDOT Commission Approved 2.5 Miles of Interstate Designation - March 2020
- UPRR coordination in progress

→ Shovel Ready

East Loop
CSJ: 0921-06-315



1	**Environmental**	- 80% complete
2	**Preliminary Engineering**	✓
3	**ROW & Utilities:**	- In Process
4	**Design**	- Under Design
5	**Funding**	- Partially Funded

Recent Activity:

- USFWS Land Swap Agreement in Final Stage of Approval
- Environmental Documents are 80% complete
- USFWS and IBWC Addressing 90% schematic comments
- Funded for Construction in approved 2021 UTP

Old Alice Rd
CSJ: 0921-06-290

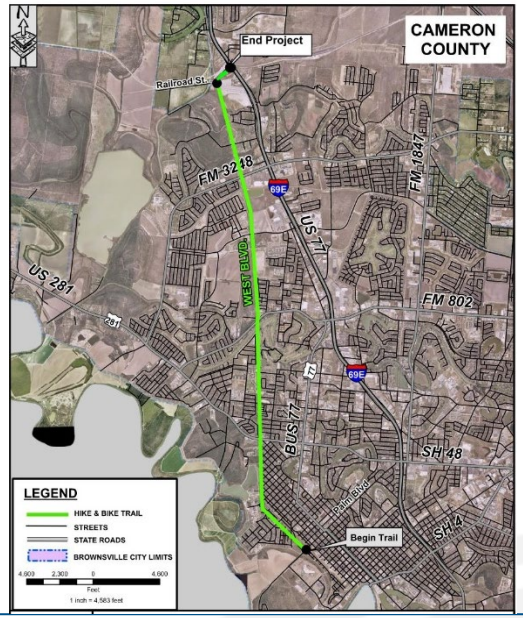


1	**Environmental**	- 85% Complete
2	**Preliminary Engineering**	✓
3	**ROW & Utilities:**	✓
4	**Design**	- Pending
5	**Funding**	✓

Recent Activity:

- Preliminary Engineering Underway with 100% Local Funds
- Submitted 100% Schematics to TxDOT on October 9, 2020, 100% TxDOT Comments addressed Nov 12, 2020
- Virtual Public Meeting Held August 11, 2020
- Construction AFA Partially Executed by Cameron County and sent to TxDOT (100% funded)
- ROW Acquisition Complete
- Ready-to-Let in FY 2021

West Rail Trail
CSJ: 0921-06-293



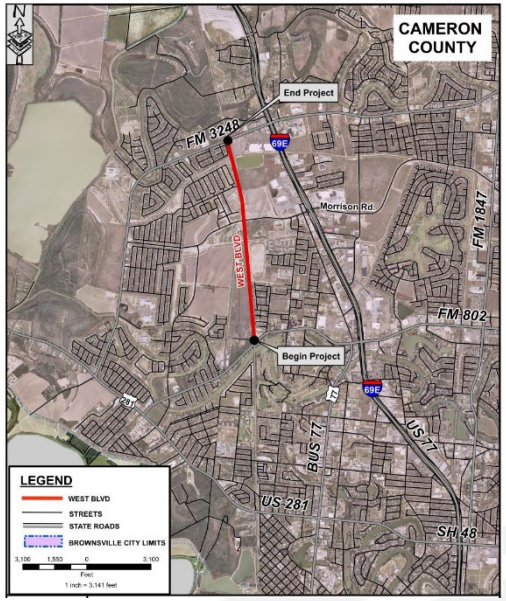
1	**Environmental**	- Underway
2	**Preliminary Engineering**	- Underway
3	**ROW & Utilities:**	- Existing ROW
4	**Design**	- In Process
5	**Funding**	✓

Recent Activity:

- Preliminary Engineering is being completed with 100% Local Funds
- Trail Construction Funding - $3.12M in TIP and $2.16 in FY 2025 (Category 7)
- Schematic at 90% and Environmental Documents at 60%.
- 100% Existing ROW
- PS&E Design Underway
- Development of TASA Application Underway

West Blvd – Roadway

CSJ:

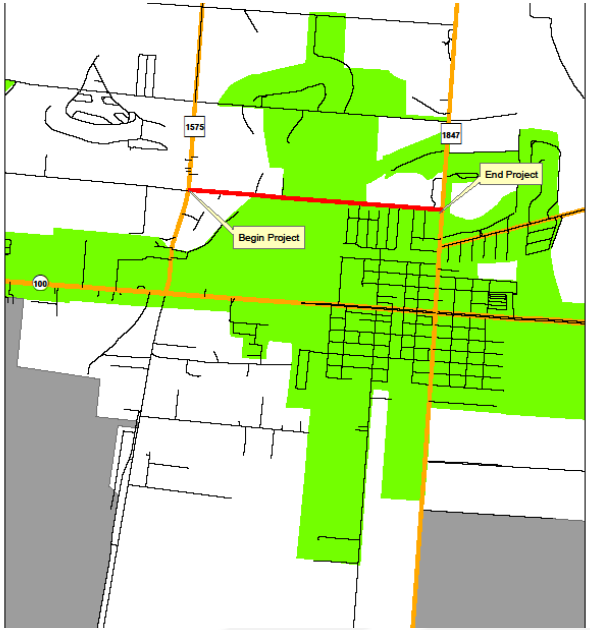


1	**Environmental**	- Underway
2	**Preliminary Engineering**	- Underway
3	**ROW & Utilities:**	- Existing ROW
4	**Design**	- Pending
5	**Funding**	✓

Recent Activity:

- Preliminary Engineering is being completed with 100% Local Funds
- Functional Classification under review by FHWA
- Roadway Construction Funding - FY 2022 of the TIP / MTP
- Environmental Documents Under Development In-House (CCRMA)
- Existing ROW

Whipple Road
CSJ: 0921-06-292



1	**Environmental**	- Underway
2	**Preliminary Engineering**	- Underway
3	**ROW & Utilities:**	✓
4	**Design**	- Pending
5	**Funding**	✓

Recent Activity:

- Construction Funds in UTP
- Consultant selected and environmental and schematic are under development
- DCC held on September 14, 2020
- Schematic Under Development
- 80% Design Survey Completed

FM 509
CSJ: 0921-06-254

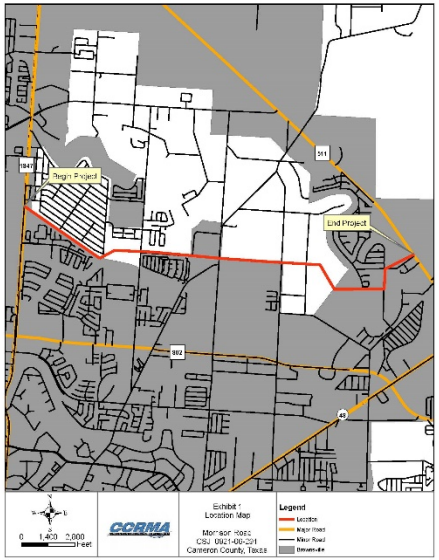


1	**Environmental**	- Underway
2	**Preliminary Engineering**	- Underway
3	**ROW & Utilities:**	- Pending
4	**Design**	- Pending
5	**Funding**	✓

Recent Activity:

- TxDOT is developing On-System Minute Order
- TxDOT has funded the project fully in the DRAFT 2021 UTP
- Consultant negotiations for Preliminary Engineering Underway

Morrison Road
CSJ: 0921-06-291



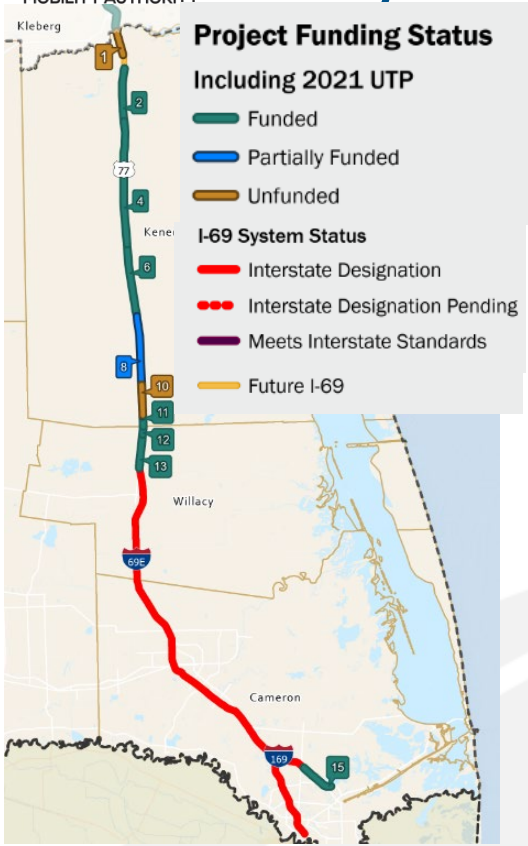
1	**Environmental**	- Underway
2	**Preliminary Engineering**	- Underway
3	**ROW & Utilities:**	- Pending
4	**Design**	- Pending
5	**Funding**	✓

Recent Activity:

- AFA Amendment #1 Fully Executed November 2019
- Construction Funding in Planning Documents - MTP
- Consultant selected and environmental and schematic are under development
- Preliminary Coordination with City and Drainage / District Underway
- Functional Classification under review by FHWA

U.S. 77 – I69E Plan

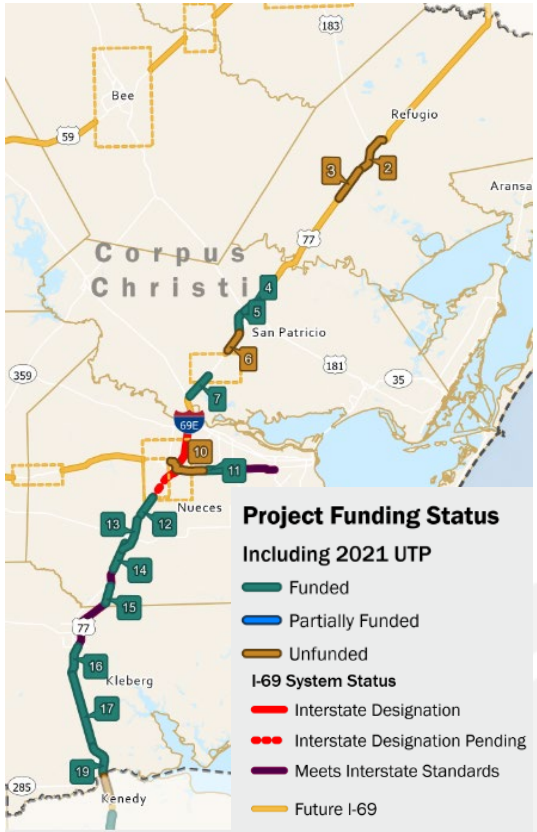
Fully Funded by TxDOT - 2021 UTP



#	CSJ	HWY	Current XS[2]	Limits	Description	EST CONST COST (M)	EST TOTAL COST[3]	MILES	FUNDING STATUS[5]	LET YEAR
1	0327-02-055	US 77	4D+	KENEDY/KLEBERG COUNTY LINE to 0.71 MILES N. OF LA PAR-RA AVE.	Interstate Designation	$23.3	$28.0	TBD	Unfunded	2025
2	0327-02-056	US 77	4D+	0.87 MILES S. OF LA PARRA AVE. to 8 MILES S. OF LA PARRA AVE.	Interstate Designation	$66.9	$80.3	7.1	Full	2026
4	0327-03-048	US 77	4D+	8 MILES S. OF LA PARRA AVE.. to 9.6 MILES N. OF NORIAS RD.	Interstate Designation	$60.4	$72.5	12.5	Full	2026
6	0327-04-037	US 77	4D+	9.6 MILES NORTH OF NORIAS RD to NORIAS RD.	Interstate Designation	$84.6	$101.5	9.6	Full	2024
8	0327-05-041	US 77	4D+	NORIAS RD to 1.34 MILES N OF WILLACY/KENEDY COUNTY LINE	Interstate Designation	$108.3	$130.0	11.6	Partial	2024
10	0327-05-043	US 77	4D+	1.34 MILES N OF WILLACY/KENEDY COUNTY LINE to 1.19 MILES S OF CRYSTAL GATE/NORIAS DI	Construct Main lanes & Overpasses	$24.5	$29.4	3.5	Unfunded	2035
11	0327-05-042	US 77	4D+	1.34 MILES N OF WILLACY/KENEDY COUNTY LINE to WILLACY/ KENEDY COUNTY LINE	Construct Main lanes & Overpasses (Under Construction; Completion date Nov. 2020)	$7.2	$8.6	1.3	Full	2018
12	0327-10-062	US 77	4D+	WILLACY/KENEDY COUNTY LINE to 0.93 MILES S OF WILLACY/ KENEDY C.L.	Construct Main lanes & Overpasses (Under Construction; Completion date Nov. 2020)	$8.2	$9.9	0.9	Full	2018
13	0327-10-057	US 77	4D+	0.93 MILES S OF WILLACY/KENEDY COUNTY LINE to BUSINESS 77	Construct Main lanes & Overpasses (Under Construction; Completion date Nov. 2020)	$22.7	$27.2	4.0	Full	2017
15	0684-01-068	SH 550	4D+	.203 MILES S OF FM 1847 to 1.13 MILES SE OF UPRR OVRPSS AT FM 3248	Construct New Toll Road	$17.3	$20.8	3.9	Full	2022
Total						**$1,085.2**	**$1,302.3**	**103.8**		

U.S. 77 – I69E Plan

Fully Funded by TxDOT - 2021 UTP



#	CSJ	HWY	Current XS[2]	Limits	Description	EST CONST COST ($M)	EST TOTAL COST[3]	MILES	FUNDING STATUS[5]	LET YEAR
2	0371-03-090	US 77	4CTL, 4D+	N OF REFUGIO to S OF REFUGIO (RELIEF ROUTE)	Construct New Roadway Lanes	$360.0	$432.0	10.1	Unfunded	2029
3	0371-03-130	US 77	4D+	S OF REFUGIO RR to S OF WOODSBORO	Convert Non-Freeway	$70.0	$84.0	4.1	Unfunded	2029
4	0371-04-062	US 77	4D+	CHILTIPIN CREEK BR (CONTROL BREAK) to BUSINESS NORTH (SINTON)	Convert Non-Freeway	$40.0	$48.0	2.9	Full	2024
5	0372-01-101	US 77	4D+	BUSINESS SOUTH (SINTON) to CHILTIPIN CREEK BR (CONTROL BREAK)	Convert Non-Freeway	$40.0	$48.0	2.9	Full	2024
6	0372-01-109	US 77	4D+	NORTH OF ODEM to BUSINESS SOUTH (SINTON)	Convert Non-Freeway	$60.0	$72.0	2.2	Unfunded	2029
7	0372-01-106	US 77	4D+	IH 37 AND INTERCHANGE to SOUTH OF ODEM	Convert Non-Freeway	$127.5	$153.0	4.3	Full	2028
12	0102-02-101	US 77	4D+	NORTH OF FM 2826 to SOUTH OF CR 28 (CONTROL BREAK)	Construct Main Lanes, Frontage Roads And Structures	$12.7	$15.2	2.4	Full	2018
13	0102-16-001	US 77	NA	CR 28 to CR 16	Construct New Roadway Lanes	$82.4	$98.9	5.1	Full	2018
14	0102-03-082	US 77	4D+	CR 16 to SOUTH OF FM 3354	Convert Non-Freeway	$23.2	$27.9	2.9	Full	2018
15	0102-03-087	US 77	4D+	CR 4 to FM 70	Construct Ramps	$9.0	$10.8	2.0	Full	2021
16	0102-04-099	US 77	4D+	FM 1356 to CR 2130	Convert Non-Freeway	$55.2	$66.3	3.4	Full	2020
17	0102-04-097	US 77	4D+	CR 2130 to 1.5 MILES N. OF SH 285	Convert Non-Freeway	$115.0	$138.0	8.6	Full	2022
19	0327-09-002	US 77	NA	1.5 MILES N. OF SH 285 INTERSECTION to KENEDY/KLEBERG COUNTY LINE	Construct New Roadway Lanes	$110.0	$132.0	4.0	Full	2024

HCRMA
HIDALGO COUNTY REGIONAL MOBILITY AUTHORITY

BOARD OF DIRECTORS MEETING FOR NOVEMBER 2020

HCRMA Board of Directors

S. David Deanda, Jr., Chairman
Forrest Runnels, Vice-Chairman
Ricardo Perez, Secretary/Treasurer
Francisco "Frank" Pardo, Director
Paul S. Moxley, Director
Alonzo Cantu, Director
Ezequiel Reyna, Jr., Director

HCRMA Administrative Staff

Pilar Rodriguez, PE, Executive Director
Eric Davila, PE, PMP, CCM, Chief Dev. Eng.
Ramon Navarro IV, PE, CFM, Chief Constr. Eng.
Celia Gaona, CIA, Chief Auditor/Compliance Ofcr.
Jose Castillo, Chief Financial Ofcr.

General Engineering Consultant

HDR ENGINEERING, INC.

Report on HCRMA Program Management Activity
Chief Development Engineer – Eric Davila, PE, PMP, CCM

Overview

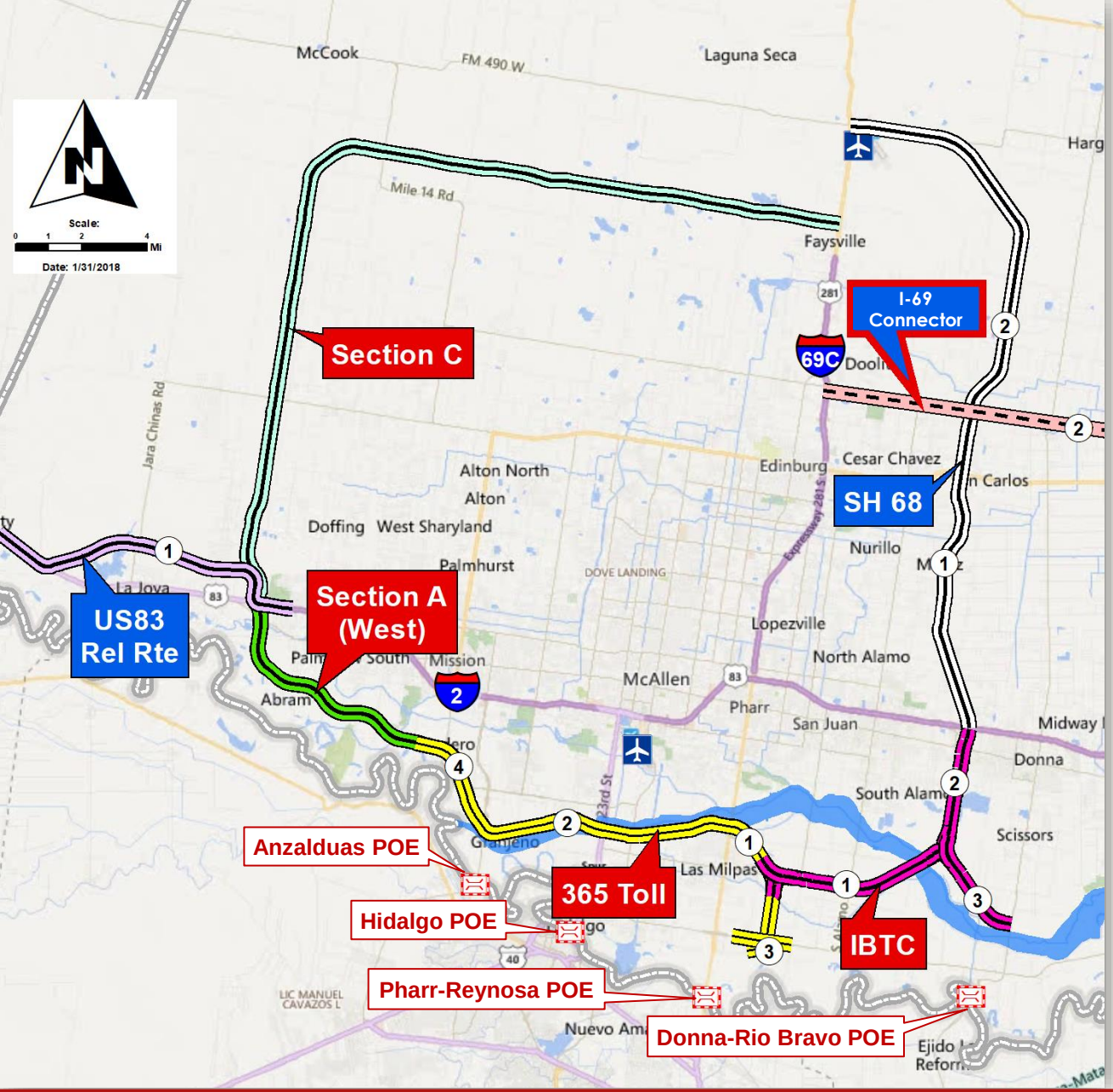
- 365 TOLL Project Overview
- IBTC Project Overview
- Overweight Permit Summary
- Construction Economics Update

MISSION STATEMENT:
"To provide our customers with a rapid and reliable alternative for the safe and efficient movement of people, goods and services"

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HCRMA
STRATEGIC PLAN

DEVELOP THE INFRASTRUCTURE TO SERVE A POPULATION OF APPROXIMATELY 800,000 RESIDENTS AND 5 INTERNATIONAL PORTS OF ENTRY



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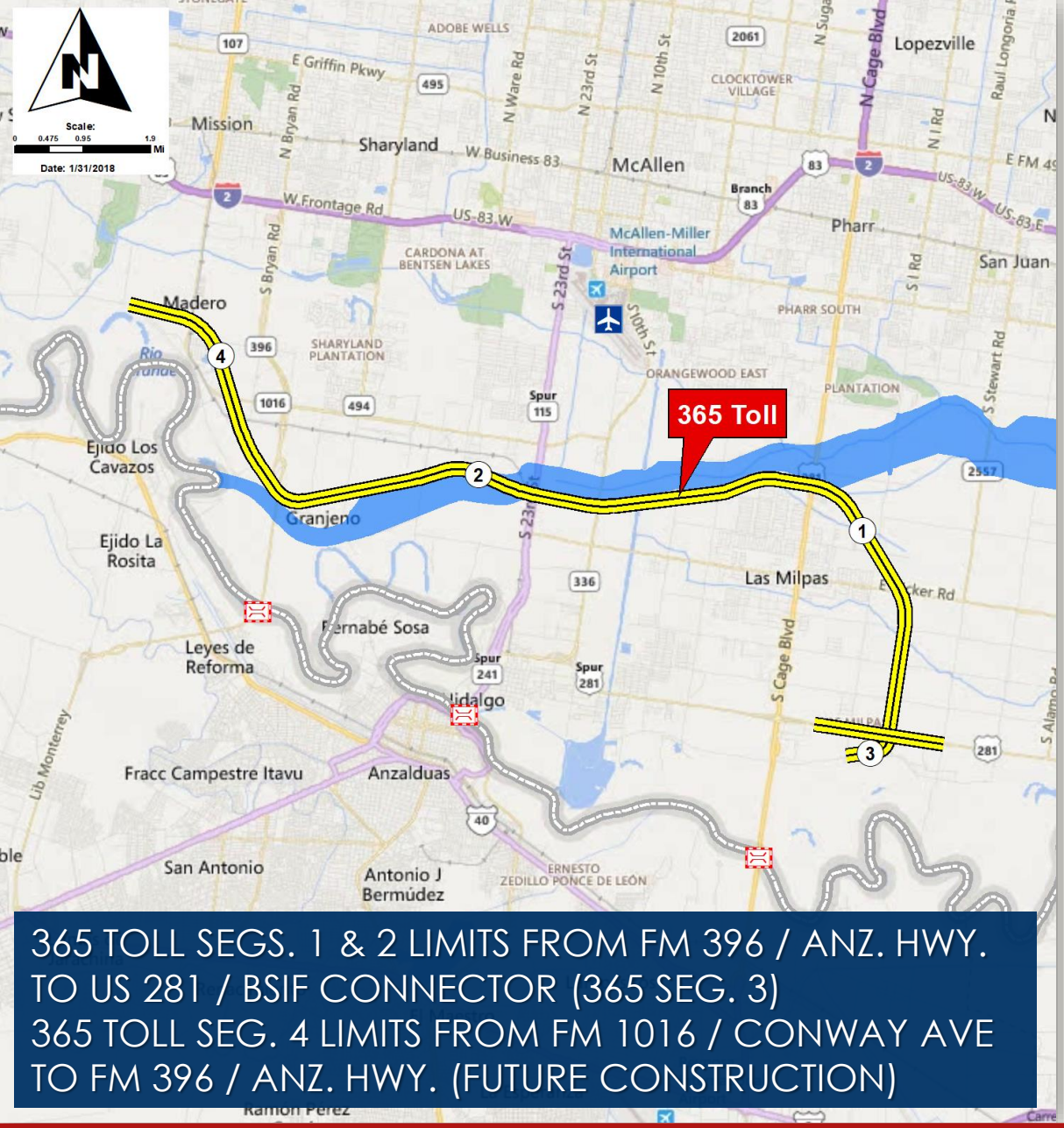
Post 2021 UTP Approval

SYSTEM WIDE

- Approval of 2021 UTP (Aug 2020)
  - 365 Toll: gap-funded construction – project needs 2nd FAA to move forward with letting after the TIP is approved by FHWA (earliest is end of Dec 2020).
  - IBTC: the $15.5M listed under Cat 12 / TBD needs revised PDA and direction from TxDOT as to whether approved funding can be used for advanced planning (e.g. design, ROW, and/or utility) work.
- What's in the RGVMPO (Local Plan)
  - 365 Toll Project (TIP / MTP) thru construction
  - IBTC Project (TIP / MTP) thru design (pending funding commitments for construction)

PDA – Project Development Agreement
FAA – Financial Assistance Agreement
TIP – Transportation Improvement Program (Short range)
MTP – Metropolitan Transportation Plan (Long Range)

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365 TOLL SEGS. 1 & 2 LIMITS FROM FM 396 / ANZ. HWY. TO US 281 / BSIF CONNECTOR (365 SEG. 3)
365 TOLL SEG. 4 LIMITS FROM FM 1016 / CONWAY AVE TO FM 396 / ANZ. HWY. (FUTURE CONSTRUCTION)

365 TOLL

HCRMA

MAJOR MILESTONES:

NEPA CLEARANCE
07/03/2015

98% ROW AS OF
09/30/2018

PH 1: 365 SEG. 3 –
LET: 08/2015
STARTED: 02/2016

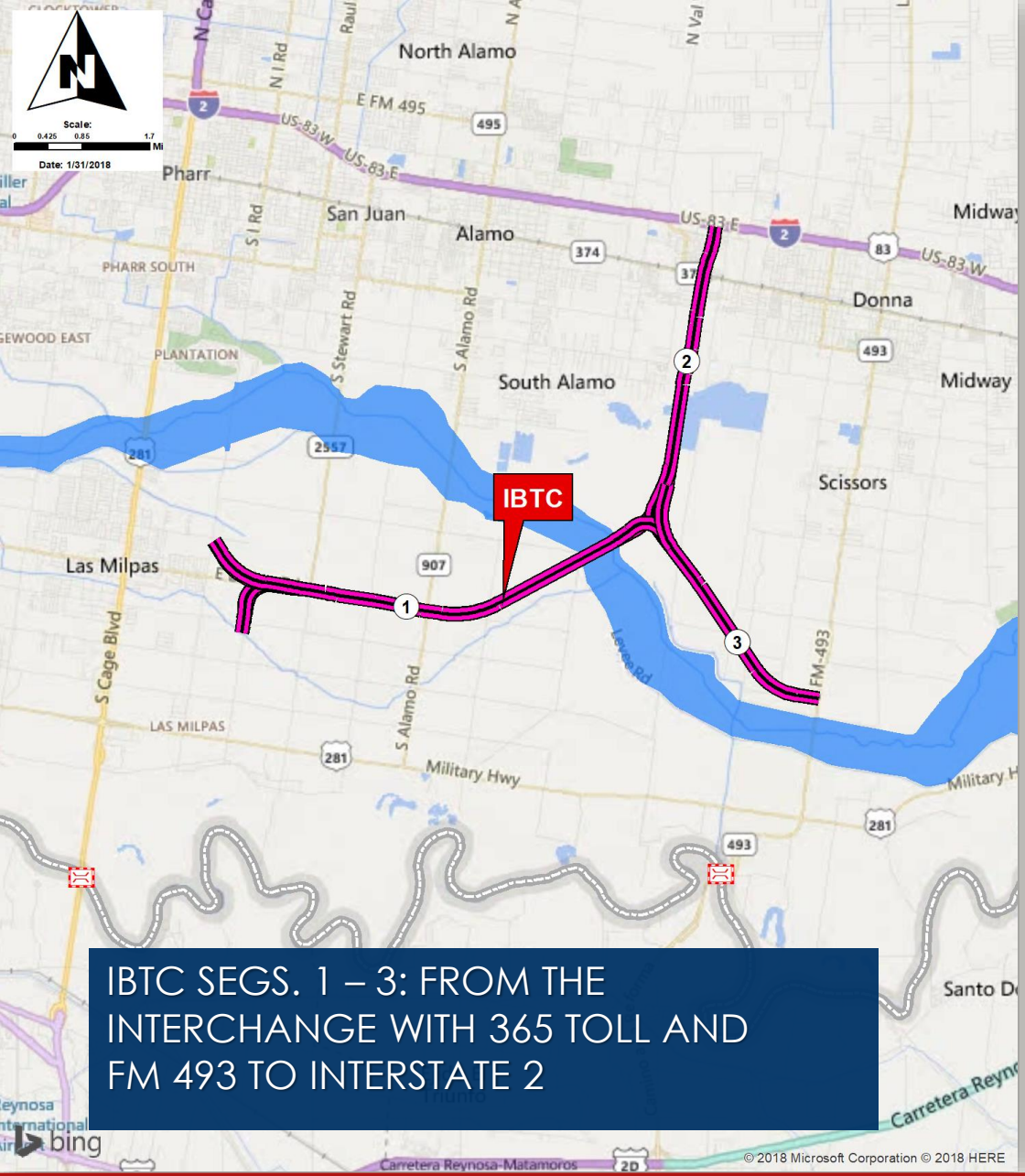
PH 2: 365 TOLL SEGS. 1 & 2 –
RE-LET: TBD
START: TBD

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365 TOLL

SCHEDULE:

- ~~**04/2020-05/2020**, Submit RGVMPO TIP Revisions based on draft 2021 UTP Funding Tables that are up for potential adoption by the Texas Transportation Commission (TTC) in 08/2020,~~
- ~~**08/2020**, Obtain addl. funding commitments via adoption of 2021 UTP,~~
- ~~**08/2020**, HCRMA to provide NTP on Investment Grade T&R Study with a 5-month completion period ending 04/2021,~~
- **11/2020**, Revise RGVMPO TIP listing for 365 Toll showing the approved funding source(s) for approval by FHWA 01/2021,
- **12/2020,** HCRMA to submit Utility Mitigation Plan for approval by TxDOT ahead of Federal Project Authorization and Agreement (FPAA) Modification request,
- **01/2021 - 12/2020**, TTC to read then adopt a new Minute Order (M.O.) for a new FAA to incorporate the gap funding into the project,
- **01/2021-02/2021,** TxDOT to process the FPAA Modification for the gap funding on 365 Tollway,
- **03/2021,** TxDOT to provide "release to advertise" notice to HCRMA,
- **03/2021 - 04/2021**, HCRMA to advertise the 365 Toll (60 days) & hold prebid last week in that period,
- **05/2021**, Open Bids by 1st week & by 2nd week conditionally award contract,
- **07/2021**, Receive TxDOT / FHWA concurrence with award of contract,
- **07/2021-08/2021**, HCRMA meets with rating agencies, prices bonds, and conducts toll revenue bond sale,
- **08/2021**, Purchase remaining 5% or ROW and finalize remaining utility relocation agreements,
- **09/2021**, Commence 42-month construction, and
- **03/2025**, Open to traffic.



IBTC SEGS. 1 – 3: FROM THE INTERCHANGE WITH 365 TOLL AND FM 493 TO INTERSTATE 2

IBTC

MAJOR MILESTONES:

OBTAINED EA ENV CLASSIF.: 11/2017

EST. NEPA CLEARANCE: LATE 2020

EST. OPEN: 03/2025

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IBTC SCHEDULE

International Bridge Trade Corridor (IBTC) (CSJ: 0921-02-142)

(From the Interchange with 365 Toll and FM 493 to Interstate 2)

Project Milestones	2020												2021												2022											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Environmental (Ongoing)	■	■	■	■	■	■	■	■	■	■	■	■																								
Surveys (65%)										■	■	■	■	■																						
ROW Title Research / Appraisals										■	■	■	■	■	■	■																				
ROW Acquisition (5% Adv. Acq.)												■	■	■	■	■	■	■	■	■	■	■														
Plans, Specs., & Estimates (50%)													■	■	■	■	■	■	■	■	■	■	■	■												
Utility Coord / Relocation												■	■	■	■	■	■	■	■	■	■	■	■	■												
Constr. Contract Letting Phase																						■	■	■												
Constr. Award / Commence																							◆	■	■	■	■	■	■	■	■	■	■	■	■	■

CONSTRUCTION FROM 12/2021 TO 03/2025

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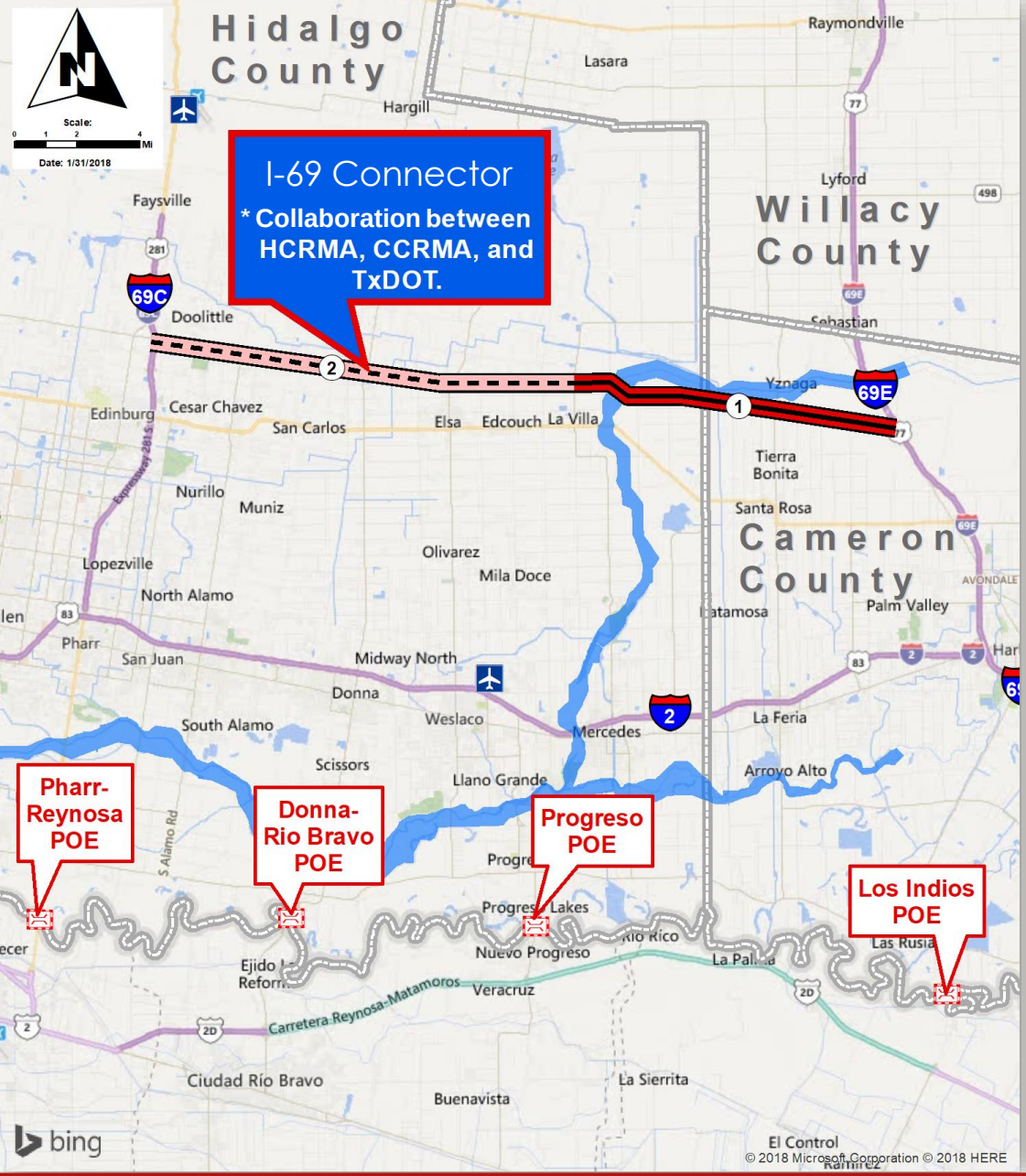
IBTC

Advance Planning

- Env.: Classification Letter and Scoping Toolkit Submitted Aug 2017
- Held IBTC Environmental Kick off with TxDOT PHR / ENV April 6, 2018.
- VRF UTP Matching Funds request processed at the HCMPO—pending adoption by TxDOT at State Level.
- All env. fieldwork complete: Waters of the US and Archeological trenching—Internal ROE efforts were instrumental to accelerating this work.
- Meeting held with EPA/TCEQ/TxDOT to discuss Donna Reservoir site for the Hazmat portion of the NEPA Document Oct 2018.
- Public Meeting took place at Donna High School March 29, 2019.
- All major milestone reports submitted and undergoing reviews: Project Description, Hazmat, Historic Resources, Public Meeting Summary Report, Waters of the US, and Archaeological Resources.
- Pending review / approval from TxDOT on: Noise Report, Archaeological Mitigation Plan, and CIC Report – so that final document can be submitted.

Other:

- Surveys (65% complete) – anticipate new survey pool procurement once TxDOT approves new federalized procurement procedures by end of Fall 2019.
- ROW Acquisition (5% complete)
- Utility Relo. (SUE 100%, coordination initiated, Overall 20%)
- Design (PS&E, 50% complete): On Hold



I-69 Connector

(COLLABORATION W/ TXDOT, CCRMA, AND HCRMA)

DESCRIPTION:

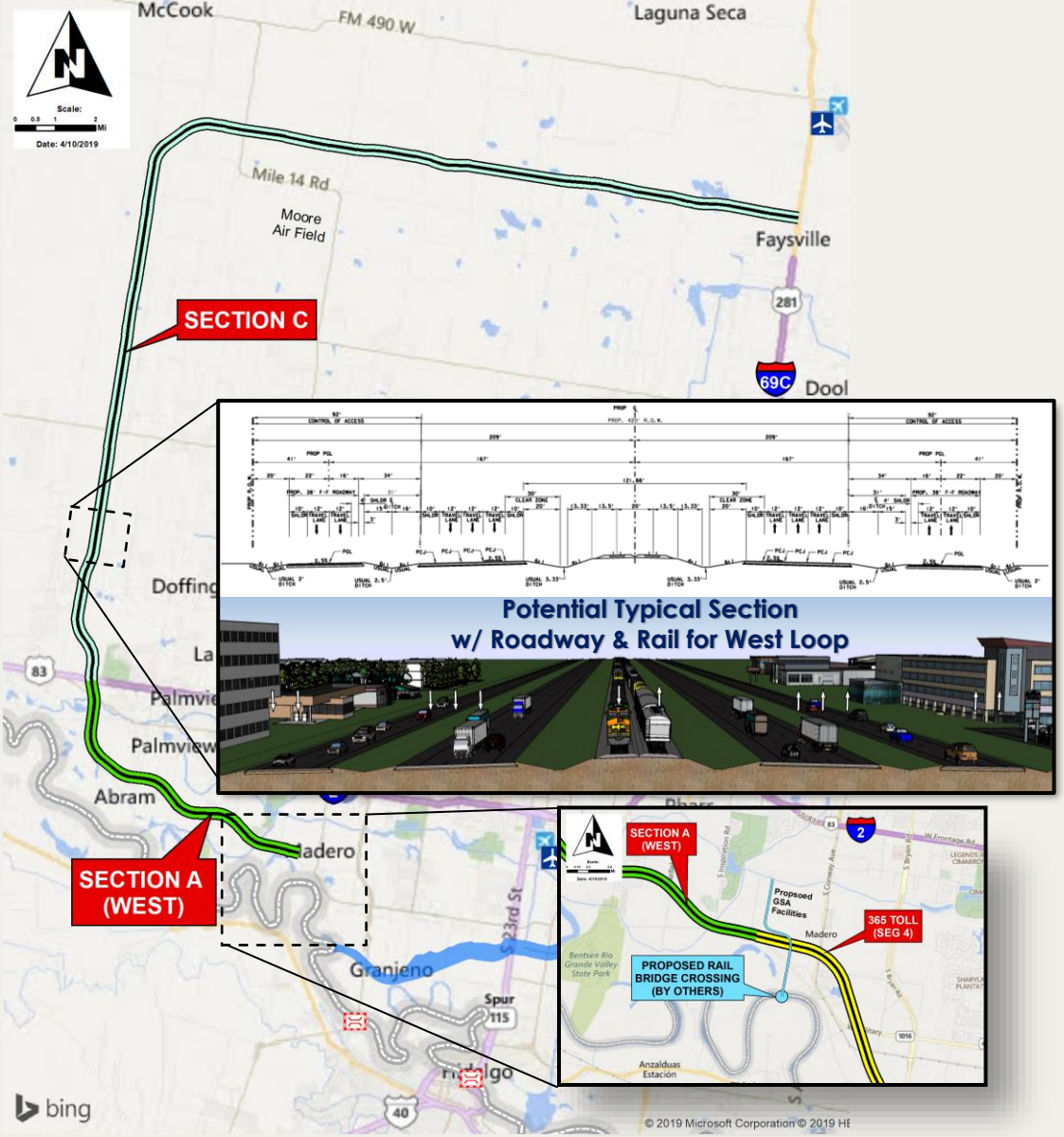
- PROJECT LENGTH ~27 MILES
- FROM I-69C IN HIDALGO COUNTY TO I69-E IN CAMERON COUNTY
- KEY PARALLEL CORRIDOR TO I-2 WITH IMPORTANCE TO MOBILITY PROJECTS BY TXDOT, CCRMA AND HCRMA
- TXDOT COMMITTED SUPPLEMENTAL DEVELOPMENT AUTHORITY FUNDS FOR THE ENTIRE 27 MILE CORRIDOR AS AN EXPRESSWAY FACILITY.
- TXDOT HAS COMMITTED TO FUNDING THE DEVELOPMENT OF THE SCHEMATIC DESIGN AND ENVIRONMENTAL DOCUMENTS.
- FEASIBILITY STUDIES KICKED OFF WITH A STAKEHOLDER MEETING OCT 2019.
- PUBLIC MEETING ON FEASIBILITY STUDIES HELD DECEMBER 2019.

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WEST LOOP

SECTION A(WEST) / SECTION C

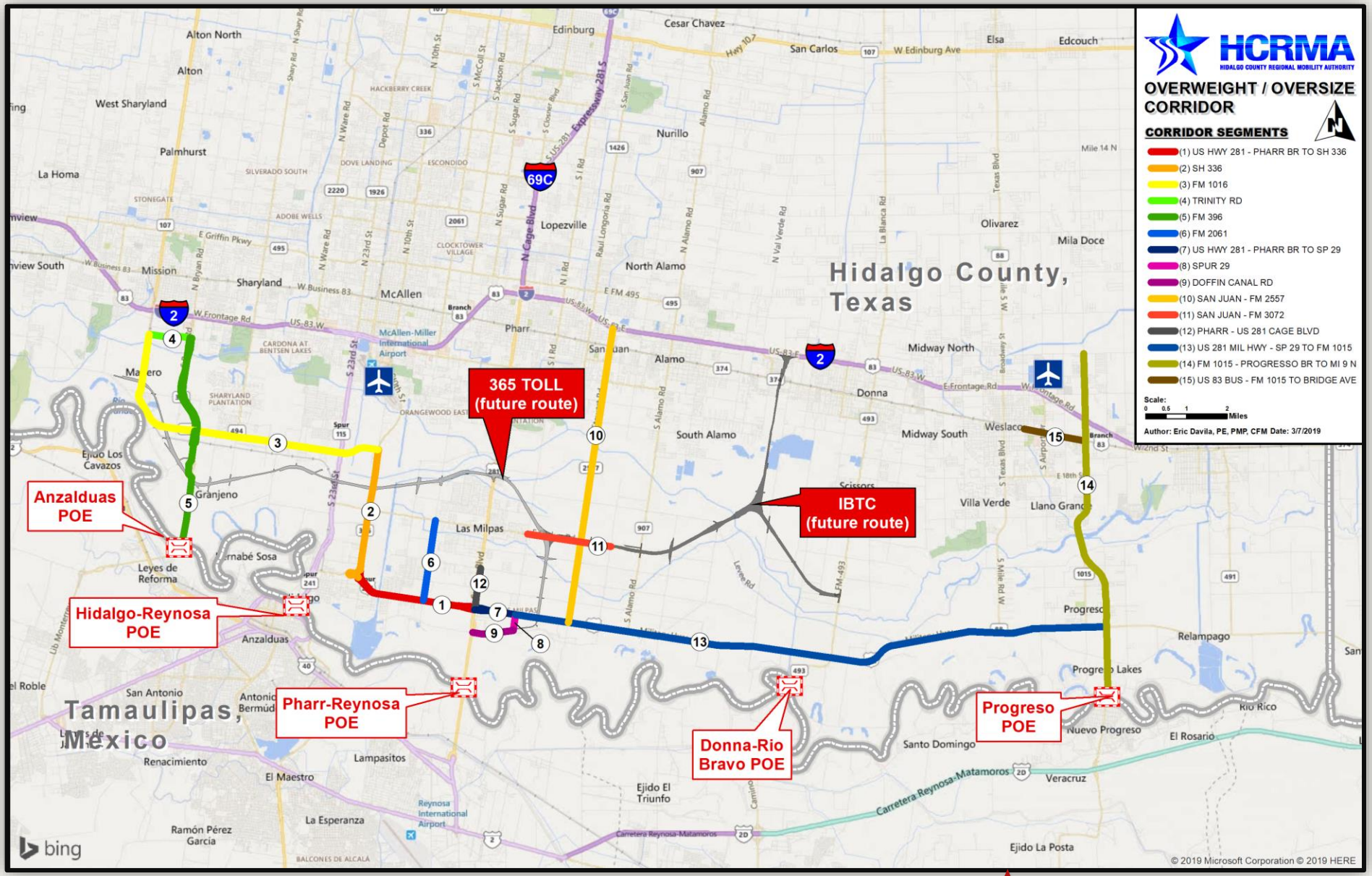
***COMPLIMENTS PROPOSED MISSION/MADERO-REYNOSA INTERNATIONAL BORDER CROSSING (BY OTHERS)**



DESCRIPTION:

- COMBINED PROJECT LENGTH:
  38 MILES FROM FM 1016 / CONWAY AVE (MISSION/MADERO) TO I-69C (NORTH EDINBURG)
- LIKELY TO BE CLASSIFIED AS AN ENVIRONMENTAL IMPACT STATEMENT (EIS) NEPA DOCUMENT (36 TO 48 MONTHS)—TO BE ENGAGED AFTER IBTC ENV.
- POTENTIAL FOR CLASS I RAIL WITHIN THE ROW PENDING DEVELOPMENTS FOR RAIL CROSSING IN MISSION AREA.
- INTERLOCAL AGREEMENT IN PLACE WITH CITY OF MISSION FOR HCRMA'S ASSISTANCE WITH ENVIRONMENTAL CLEARANCE EFFORTS.
- MARCH 2020 - HELD AN ILA KICK OFF MEETING WITH THE CITY OF MISSION TO BEGIN ALIGNING ENV. CLEARANCE EFFORTS WITH THE CITY'S INTENDED OVERALL PROJECT PLAN.
- MAY 2020 – HCRMA PROVIDED CITY OF MISSION W DRAFT SCOPES FOR ENV / TRAFFIC ENG. FOR THEIR PROPOSED ENV. CLEARANCE EFFORTS AT THE PROPOSED RAIL BRIDGE CROSSING.
- SEPTEMBER 2020 – TXDOT APPROVED CITY OF MISSION PROCUREMENT RULES TO ALIGN WITH THE "FEDERAL PROCESS"

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Overweight Report for 2014 – Present

Period: Jan 1, 2014 – Oct 31, 2020

OW

Total Permits Issued:	**176,708**
Total Amount Collected:	**$ 26,790,292**
■ **Convenience Fees:**	**$ 612,492**
■ **Total Permit Fees:**	**$ 26,177,800**
– Pro Miles:	$ 530,124
– TxDOT:	$ 22,251,130
– HCRMA:	$ 3,396,546

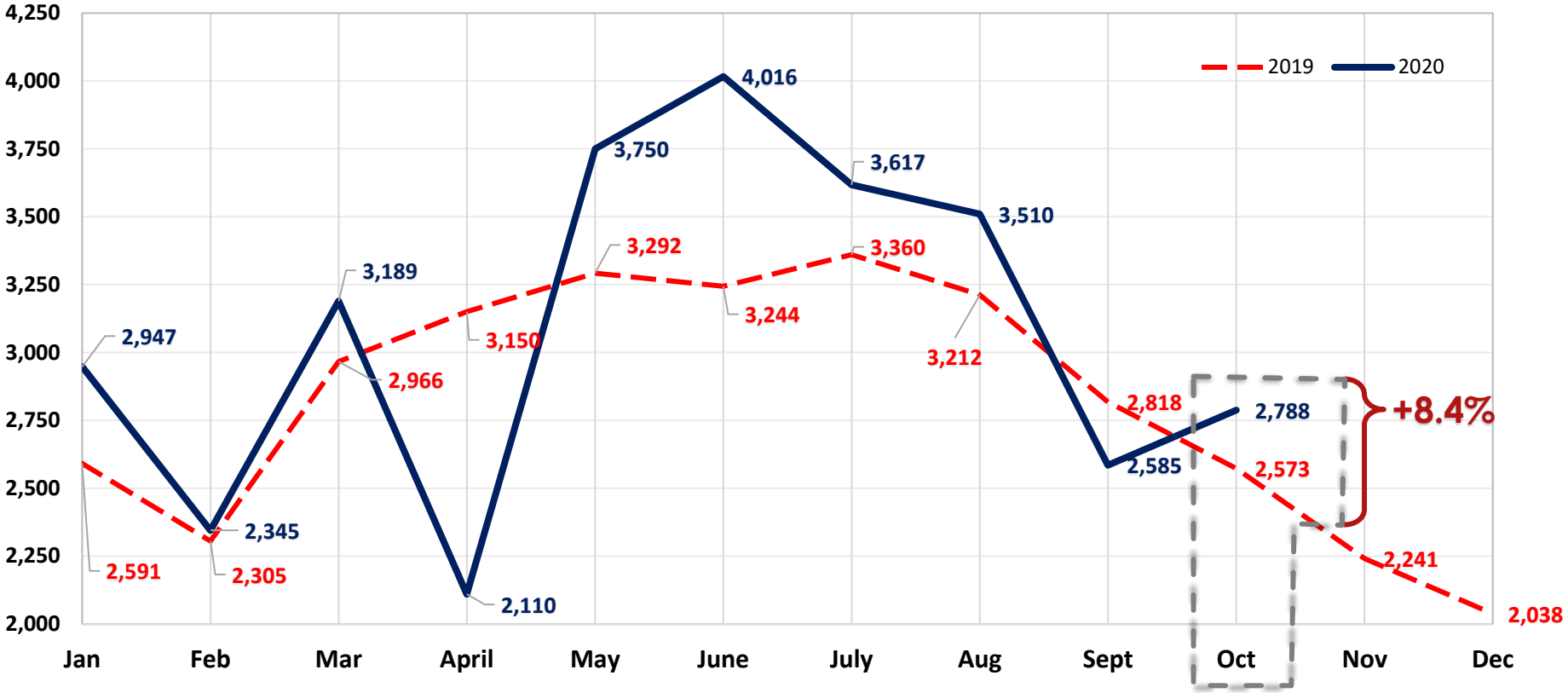
Overweight Report for Year 2020
Period: Jan 1, 2020 – Oct 31, 2020

OW

Total Permits Issued:	**28,069**
Total Amount Collected:	**$ 5,716,280**
■ **Convenience Fees:**	**$ 102,480**
■ **Total Permit Fees:**	**$ 5,613,800**
– Pro Miles:	$ 84,207
– TxDOT:	$ 4,771,730
– HCRMA:	$ 757,863

HCRMA
HIDALGO COUNTY REGIONAL MOBILITY AUTHORITY

Overweight/Oversized Permit Count
2019 - 2020 Monthly Comparison



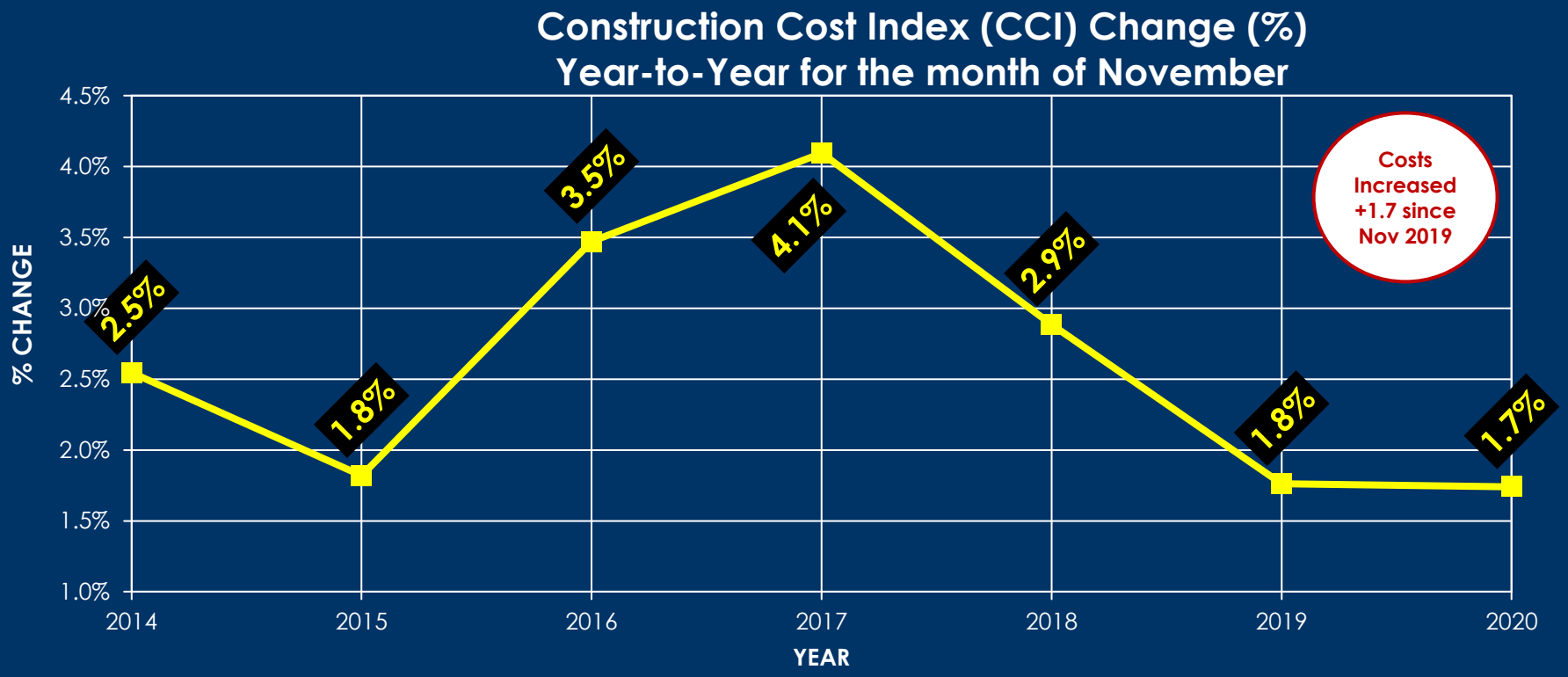
Notes:

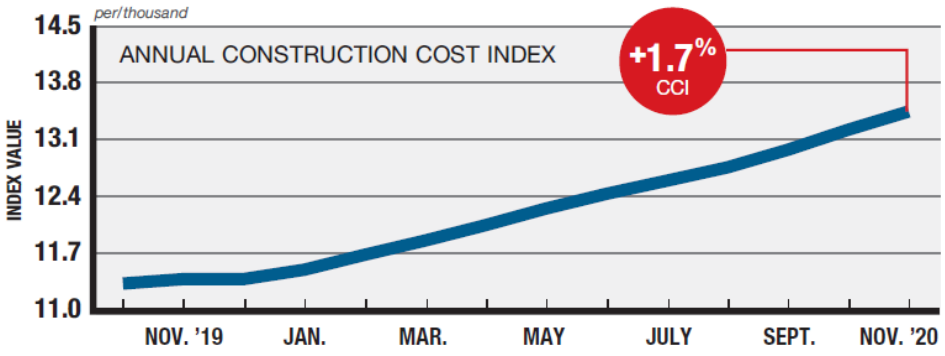
1. **Unprecedented stay at home orders in response to COVID-19 containment in in April 2020 on both sides of the US/ Mexico Border attributed toward a 33% drop in overweight permit purchases within Hidalgo County – April 2019 (3,150 permits) vs. April 2020 (2,110 permits).**
2. **By the end of Oct 2020, the total monthly permit count of 2,788 represents a +8.4% increase compared to the same month in 2019.**

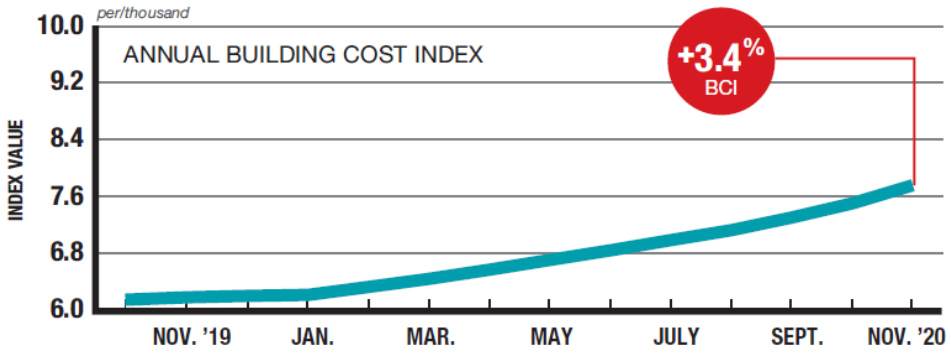
HCRMA
HIDALGO COUNTY REGIONAL MOBILITY AUTHORITY

Constr. Economics Nov 2020

CE







Source: McGraw Hill Construction ENR

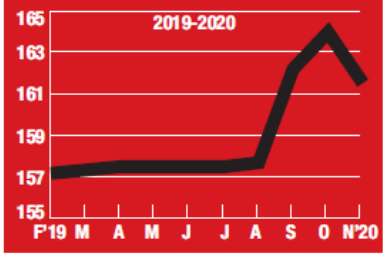
CONSTR. ECONOMICS NOV 2020

CE

CONCRETE BLOCK

-1.5%

MONTHLY PRICES DECREASED 1.5%, WHILE YEARLY PRICES ROSE 2.8%.

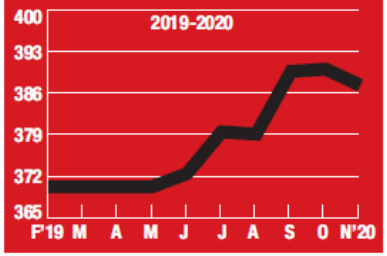


1992=100

READY-MIX CONCRETE

-0.7%

READY-MIX CONCRETE PRICES FELL 0.7% SINCE LAST MONTH.

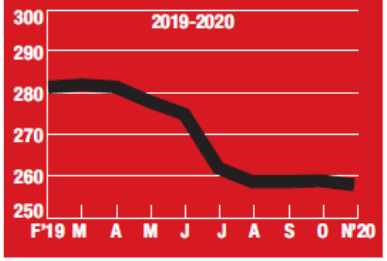


1992=100

ASPHALT PAVING

-0.4%

ASPHALT PRICES FELL 0.4% THIS MONTH, WHILE YEARLY PRICES ARE DOWN 6.3%.

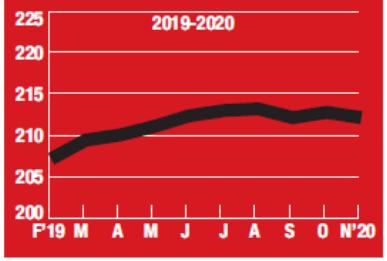


1992=100

PORTLAND CEMENT

-0.3%

MONTHLY PRICES FOR PORTLAND CEMENT DECLINED 0.3% IN NOVEMBER.



1992=100

20-CITY AVERAGE

ITEM	UNIT	$PRICE	%MONTH	%YEAR
ASPHALT PAVING				
PG 58	TON	390.96	**-0.4**	-6.3
Cutback, MC800	TON	368.04	-1.5	-2.9
Emulsion, RAPID SET	TON	354.92	-0.4	-1.4
Emulsion, SLOW SET	TON	364.97	-0.7	-1.4
PORTLAND CEMENT				
Type one	TON	147.83	**-0.3**	+6.1
MASONRY CEMENT				
70-lb bag	TON	10.90	+0.5	+2.6
CRUSHED STONE				
Base course	TON	12.59	+0.2	+2.8
Concrete course	TON	11.80	+0.2	+1.0
Asphalt course	TON	13.92	-0.4	+2.7
SAND				
Concrete	TON	10.45	+0.1	+2.6
Masonry	TON	12.47	+0.1	+3.1
READY-MIX CONCRETE				
3,000 psi	CY	124.33	**-0.7**	+4.9
4,000 psi	CY	140.26	-1.3	+1.8
5,000 psi	CY	189.68	-1.4	+2.2
CONCRETE BLOCK				
Normal weight: 8" x 8" x 16"	C	150.85	**-1.5**	+2.8
Lightweight: 8" x 8" x 16"	C	172.97	0.0	+1.3
12" x 8" x 16"	C	183.27	+0.1	+0.3

SOURCE: ENR

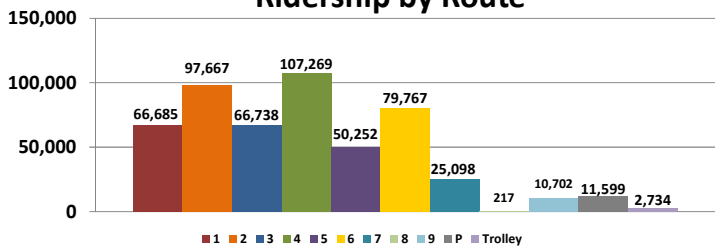
FY 2019-2020 METRO MCALLEN

OCTOBER 1, 2019 thru SEPTEMBER 30, 2020 Ridership and Fares

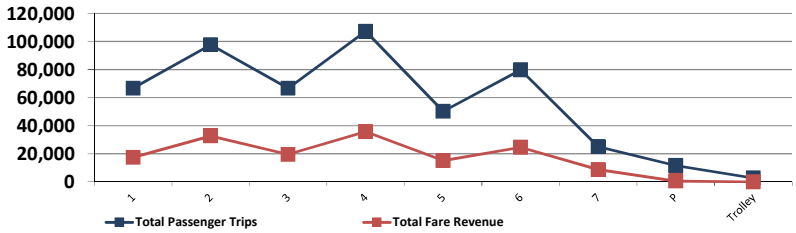
TOTAL RIDERSHIP=	537,699

TOTAL ANNUAL FARE REVENUE=	$157,150

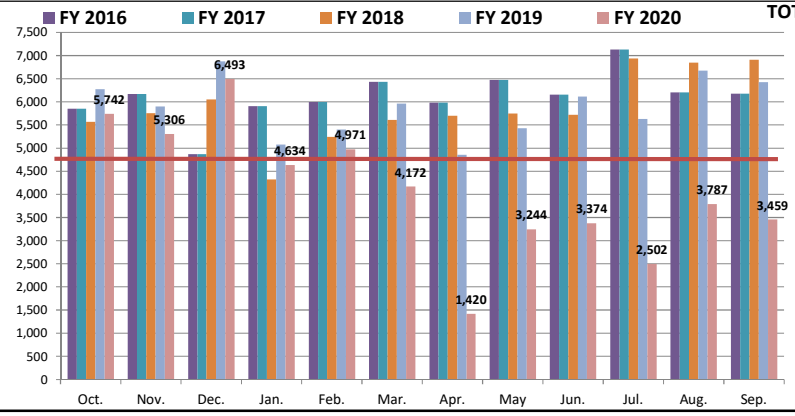
Ridership by Route



Route Summary



SERVICE EXTENSION - YTD Ridership



TOTAL RIDERS:
49,104

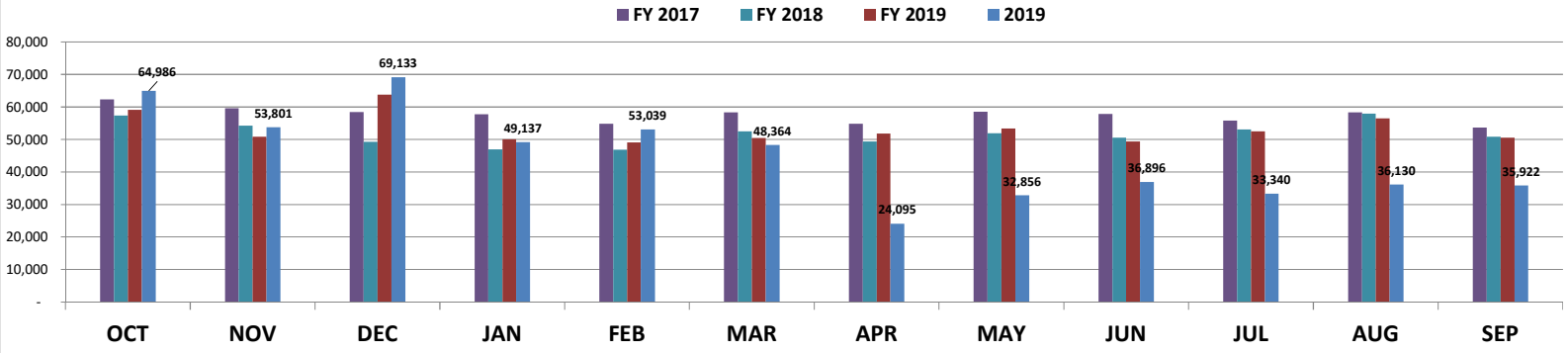
MONDAY-SATURDAY **6:00PM - 9:00PM**
&
SUNDAY **8:00PM - 6:00PM**
ROUTES



MONTHLY RIDERSHIP OF SERVICE EXPANSION

Fiscal Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	TOTAL
FY 2017	5,848	6,166	4,867	5,907	5,998	6,435	5,982	6,468	6,158	7,130	6,201	6,177	73,337
FY 2018	5,566	5,750	6,052	4,318	5,245	5,607	5,700	5,747	5,718	6,937	6,847	6,910	70,397
FY 2019	6,271	5,901	6,875	5,077	5,397	5,963	4,853	5,425	6,114	5,632	6,674	6,422	70,606
FY 2020	5,742	5,306	6,493	4,634	4,971	4,172	1,420	3,244	3,374	2,502	3,787	3,459	49,104
MONTHLY GOAL	3,750	3,750	3,750	3,750	3,750	3,750	3,750	3,750	3,750	3,750	3,750	3,750	45,000

FY 2017 - FY 2020 RIDERSHIP SUMMARY



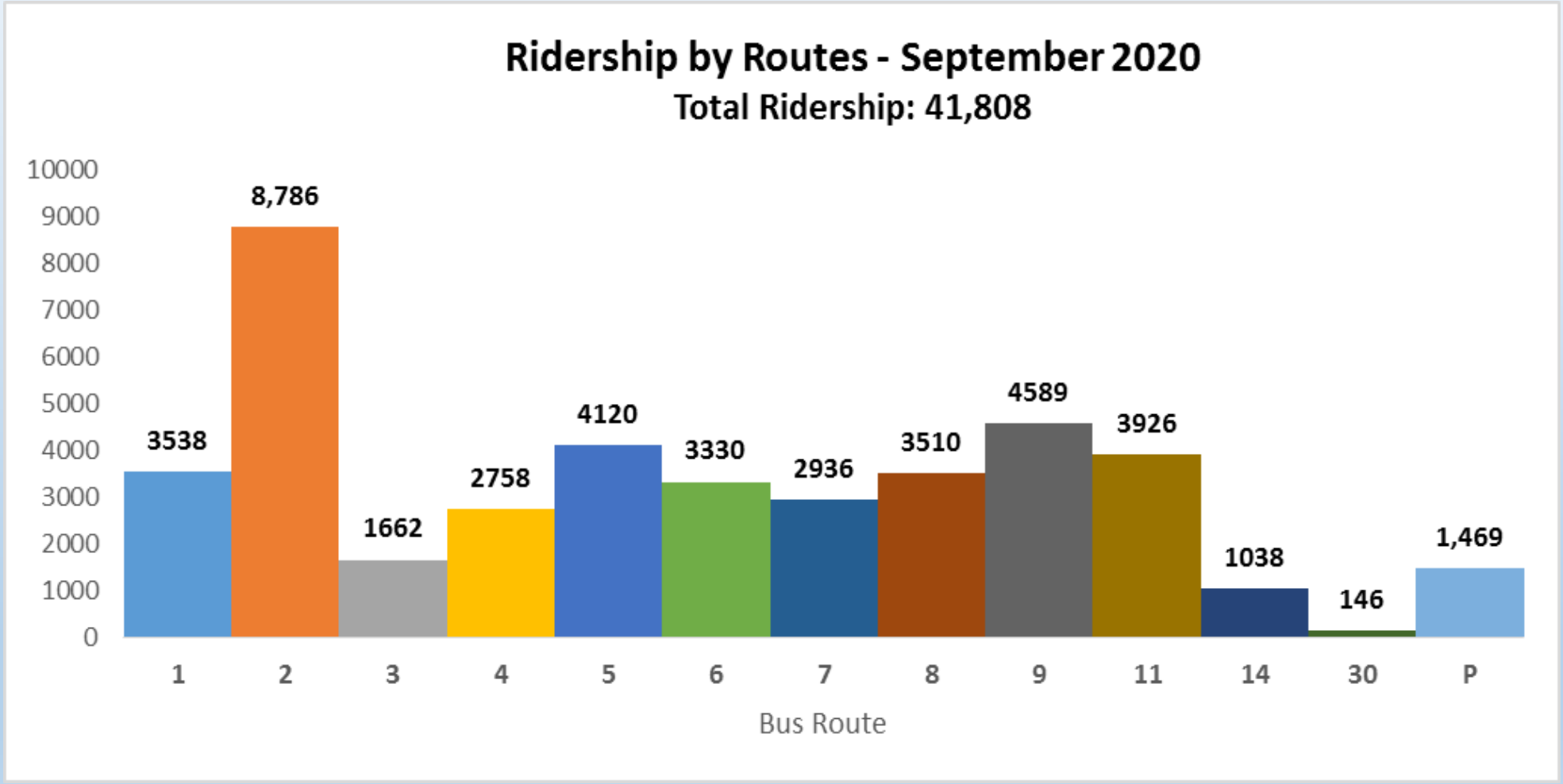
Fiscal Year	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL	%Change
FY 2017	62,302	59,579	58,435	57,775	54,853	58,309	54,799	58,516	57,869	55,857	58,318	53,713	690,326	-4%
FY 2018	57,362	54,208	49,299	46,919	46,832	52,501	49,400	51,919	50,509	53,107	57,952	50,802	620,809	-10%
FY 2019	59,124	50,893	63,768	50,089	49,104	50,408	51,768	53,334	49,413	52,514	56,433	50,512	637,360	3%
FY 2020	64,986	53,801	69,133	49,137	53,039	48,364	24,095	32,856	36,896	33,340	36,130	35,922	537,699	-16%

Brownsville Metro & Island Metro Transit Reports

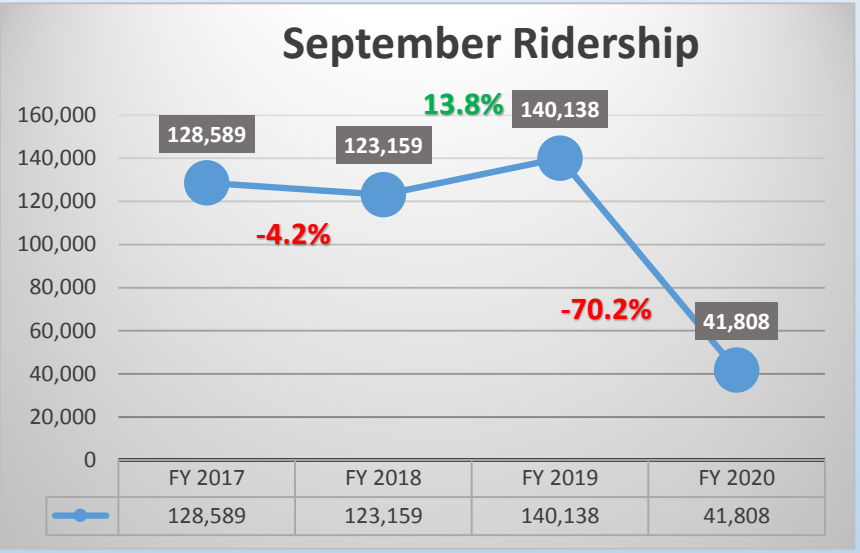
By: Norma Zamora

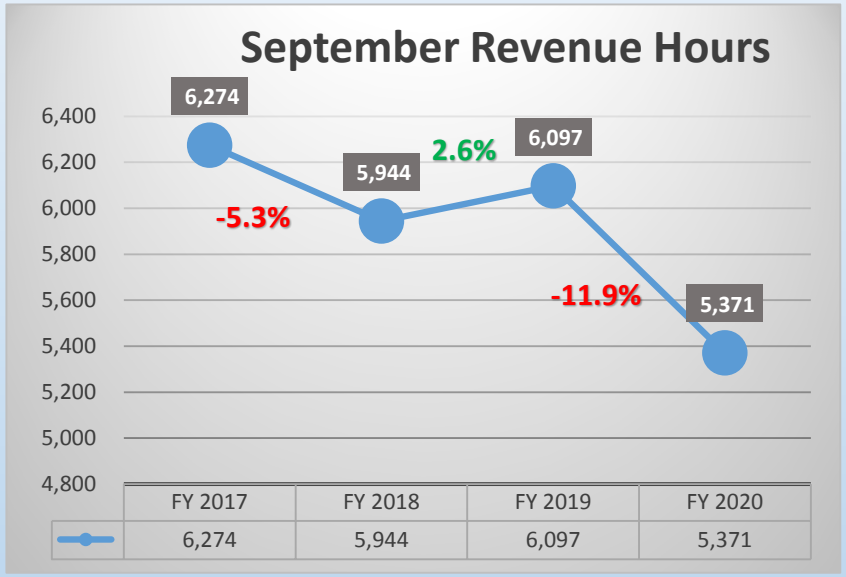
Multimodal Transportation Department
Transit Director
City of Brownsville

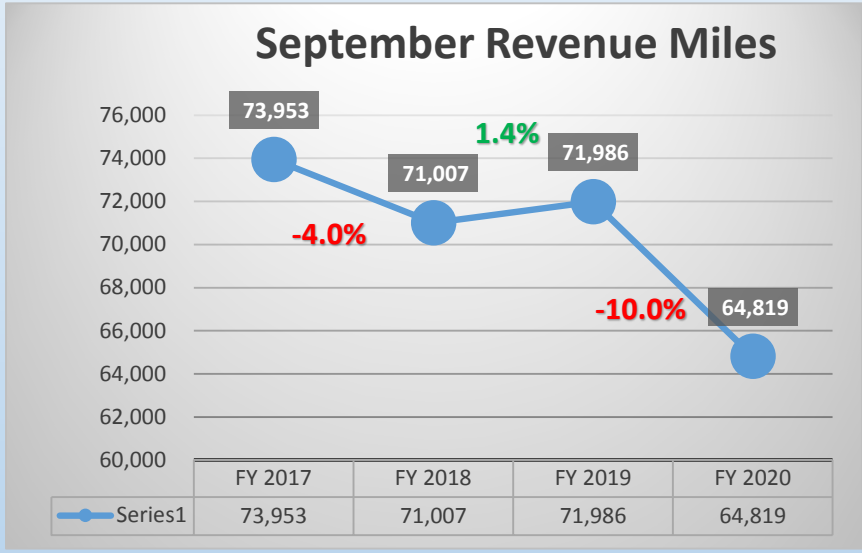
Brownsville Metro



Brownsville Metro







On-going Connecting Communities Project

Total Estimated Project Cost- **$14,830,141**

- **Project 1-** (**A**)Improve the Site Safety and Function (ISS&F)
  (**B**) New Passenger Facility to Site (NPFS)

- **Project 2-** Improve Bus Stop Safety and Comfort

- **Project 3-** Purchase of Replacement Revenue Vehicles **(COMPLETED)**

Project 1 – (A) Improve the Site Safety and Function (ISS&F)

Description- Improves safety and the daily operational functions on Brownsville Metro's Maintenance and Operations Facility

(NO UPDATES)

1. Pre. Engineering - **40%**
2. Environmental - **100%**
3. ROW & Utilities - **100%**
4. Design - **50%**
5. Funding - TIGER: **$3,140,141**
6. Total Estimated Project Cost- **$6,079,007**

Project Needs: **A&E, Design & Final Construction Docs.**

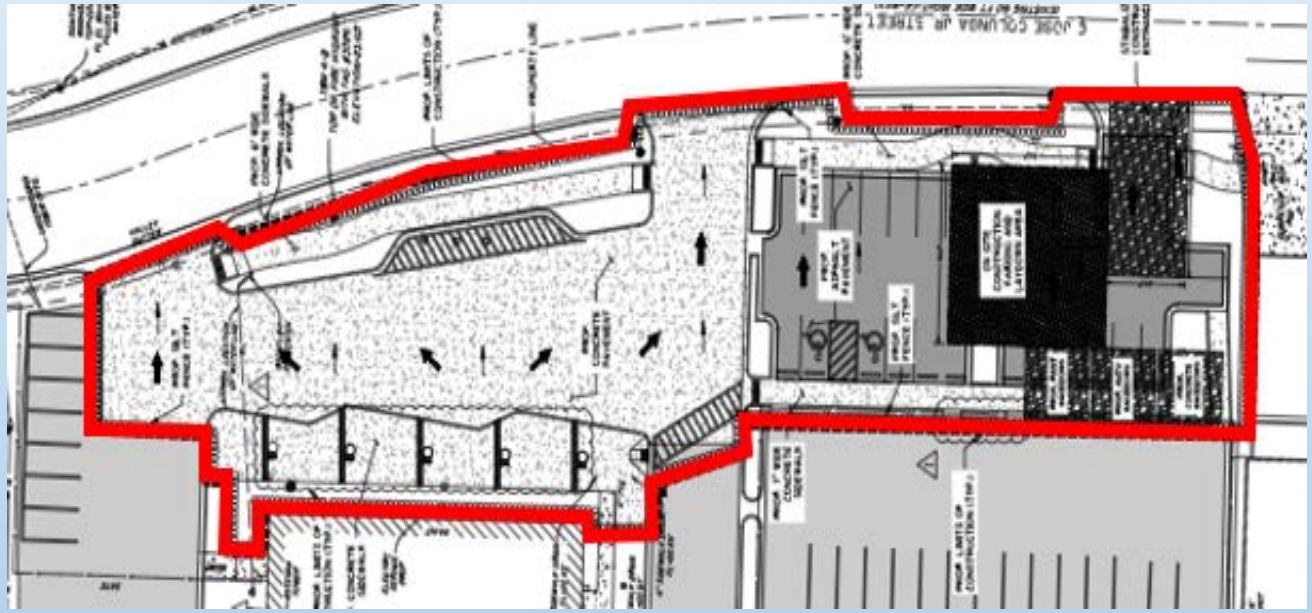
Letting Date: **November 2020**

Project 1 – (B) New Passenger Facility to Site (NPFS)

CSJ #: 0921-06-304

Description- New Passenger Facility-Eastside Transfer Station to include a park and ride

1. Pre. Engineering - **100%**
2. Environmental - **100%**
3. ROW & Utilities - **100%**
4. Design - **100%**
5. Funding - Cat. 9 (TAP): **$407,486**;
6. Total Estimated Project Cost - **$1,033,000**



Project Needs: **Solicitation for Bids**

Letting Date: **December 2020**

Project 2 – Improve Bus Stop Safety and Comfort

Description- Improvements to approximately 54 existing bus stops that consist of adding ADA accessible sidewalks, benches, shelters, bus pads and bike amenities.

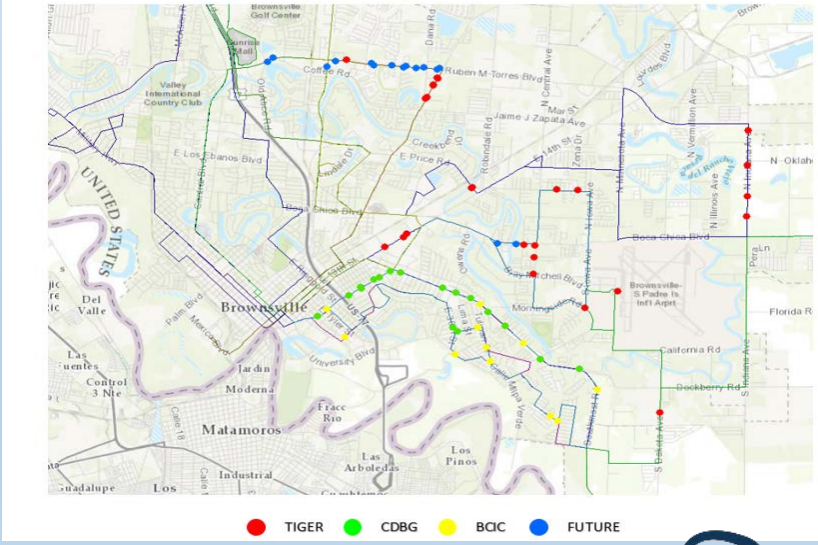
1. Pre. Engineering - **100%**
2. Environmental - **100%**
3. ROW & Utilities – **N/A**
4. Design - **100%**
5. Construction **– 20% ***
6. Funding - TIGER: **$539,859/****
7. Total Estimated Project Cost - **$2,000,000**

<u>Project Update</u>: Brownsville Metro continues to work with City of Brownsville staff on the procurement for the installation of 8 new bus shelters and the improvements to 5 existing bus stops.

*Pending Completion of **43 Bus stops**



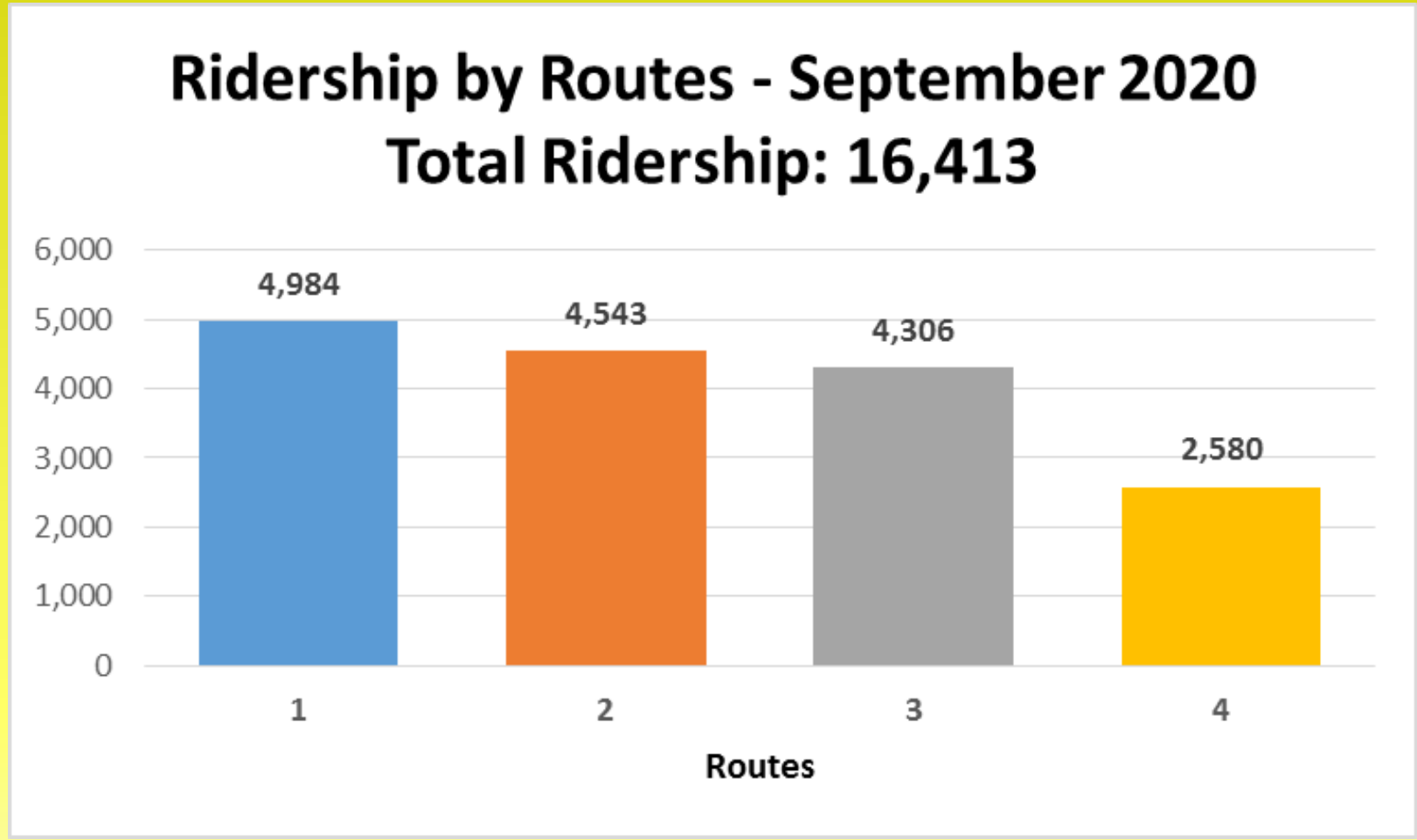
TIGER Bus Stop Improvement locations



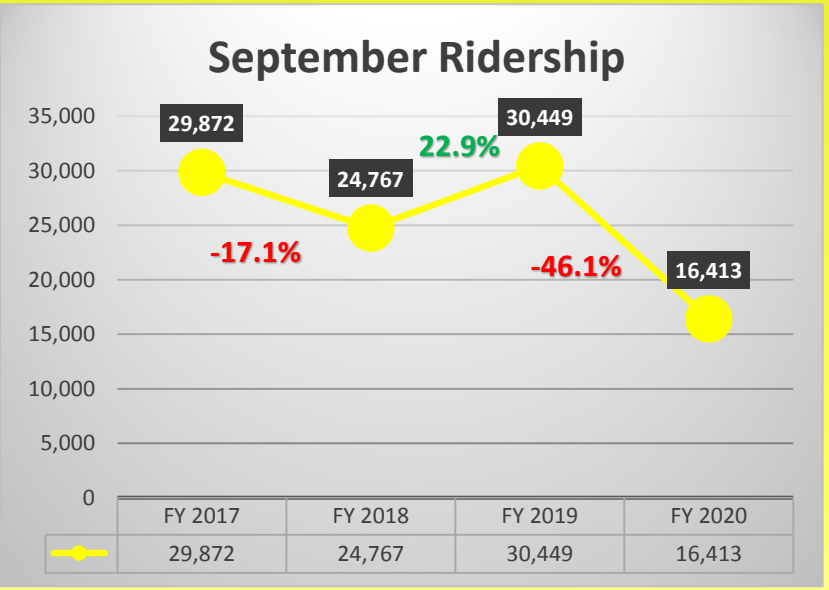
* 11 Bus Stops completed in 2017

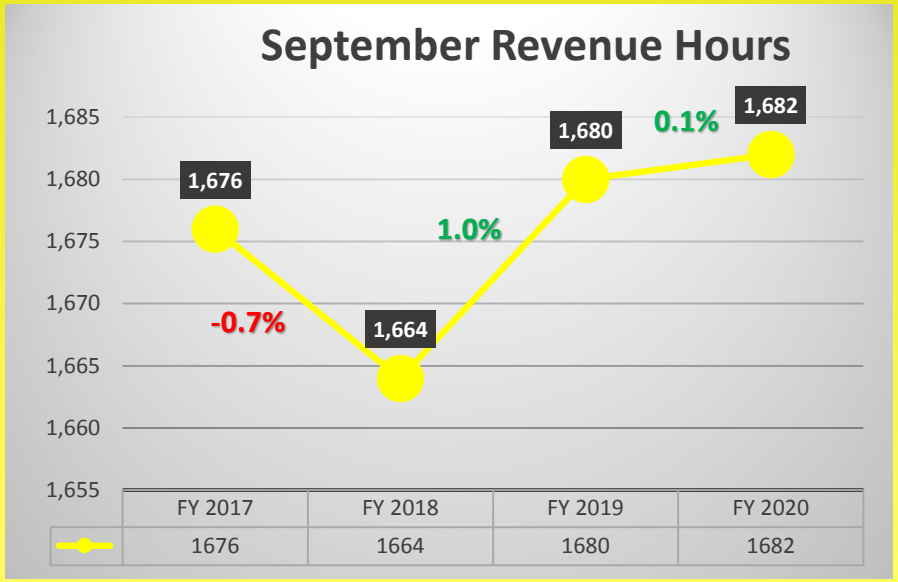
** (BCIC, CDBG, COB, other partners)

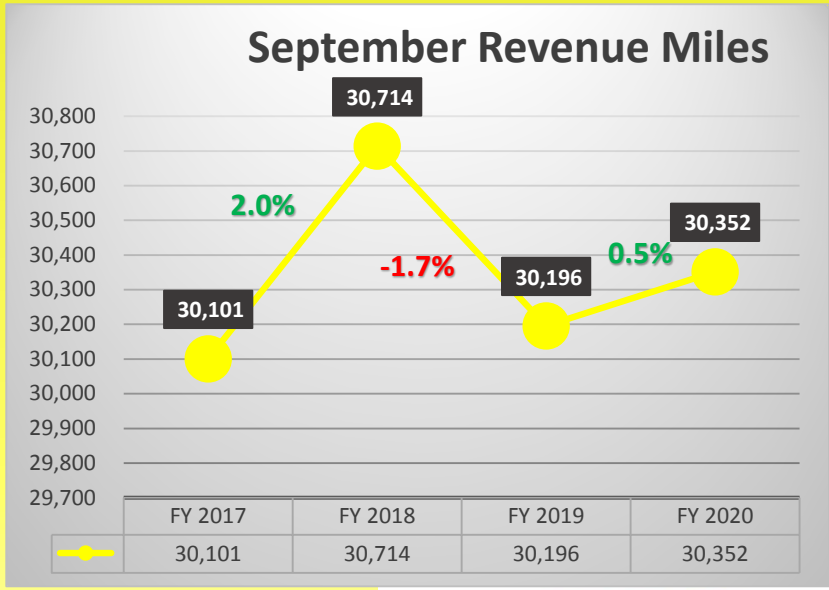
Island Metro



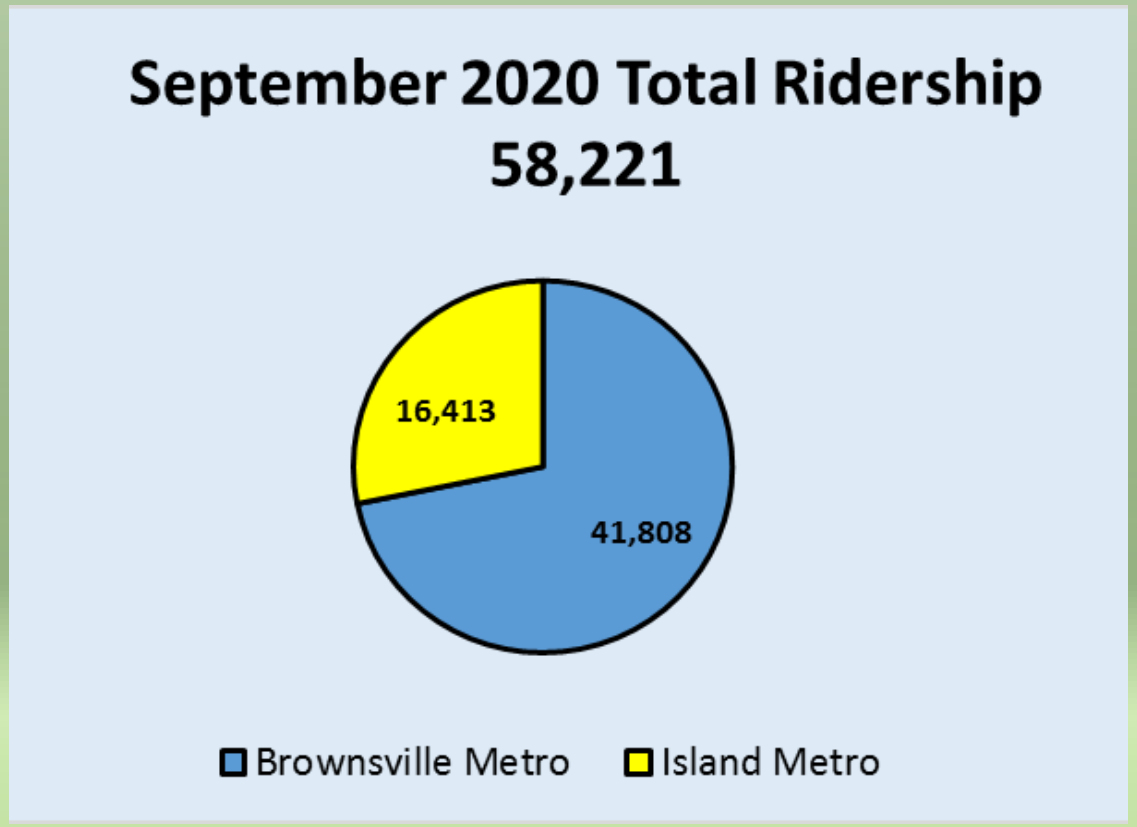
Island Metro

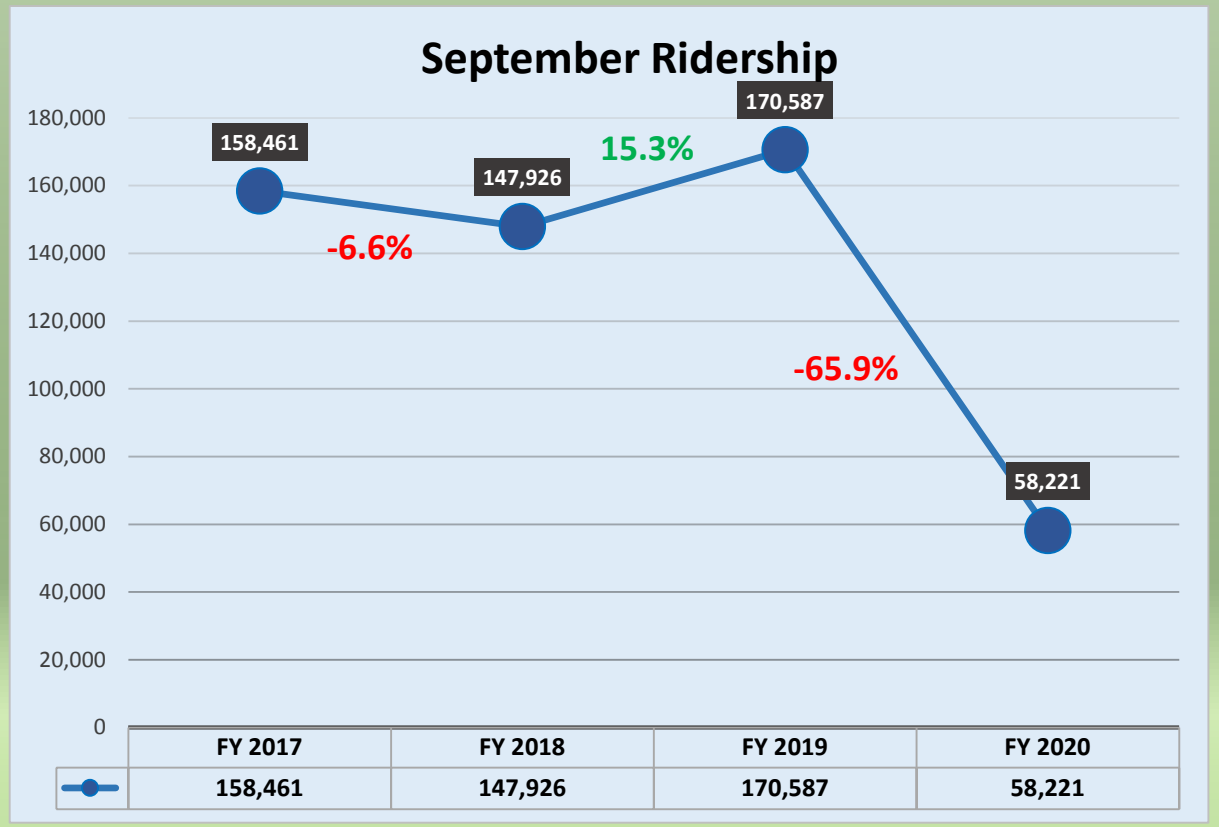






Combined Ridership

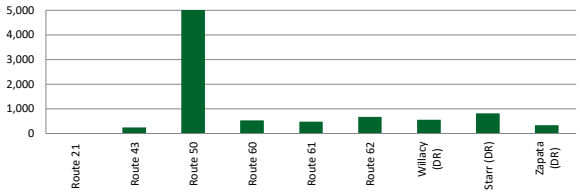




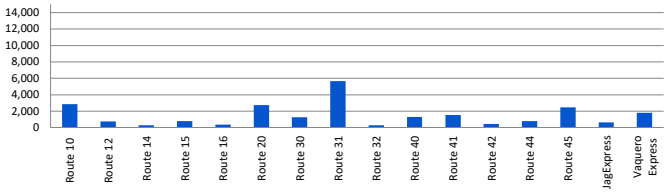
Thank You

LOWER RIO GRANDE VALLEY DEVELOPMENT COUNCIL
Valley Metro Service Summary
FY 2021 October

RURAL
Ridership by Route

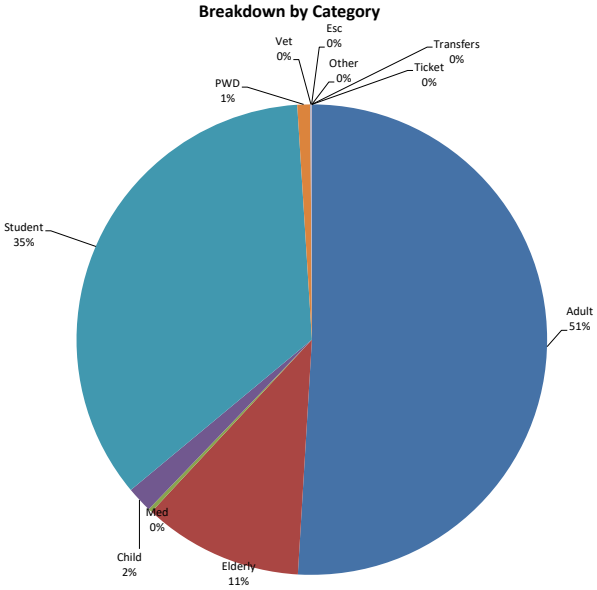


URBAN
Ridership by Route



	Route	Total Passenger Trips	Route Activity	Area(s) Served
RURAL	Route 21	0	0%	Sullivan City, West Hidalgo County
	Route 43	238	1%	South Cameron County
	Route 50	5,272	14%	Brownsville, Port Isabel
	Route 60	534	1%	Roma, Rio Grande City
	Route 61	470	1%	Rio Grande City
	Route 62	669	2%	Rio Grande City
	Willacy (DR)	551	1%	Willacy County
	Starr (DR)	813	2%	Starr County
	Zapata (DR)	329	1%	Zapata County
	Metro Express	3,741	10%	Rio Grande Valley
URBAN	Route 10	2,845	8%	Edinburg
	Route 12	747	2%	Edcouch, Elsa, Edinburg
	Route 14	266	1%	Edinburg
	Route 15	791	2%	Edinburg
	Route 16	340	1%	Edinburg
	Route 20	2,727	7%	Mission
	Route 30	1,252	3%	Pharr, San Juan
	Route 31	5,654	15%	Hidalgo County
	Route 32	264	1%	Donna
	Route 40	1,285	3%	Harlingen
	Route 41	1,528	4%	Harlingen
	Route 42	443	1%	San Benito
	Route 44	787	2%	Primera, La Feria, Santa Rosa
	Route 45	2,454	7%	Cameron County
	JagExpress	649	3%	Weslaco, Pharr, McAllen
	Vaquero Express	1,793	5%	Edinburg
	Hidalgo	34	0%	City of Hidalgo
	TOTAL	36,476	100%	

Ridership
Breakdown by Category

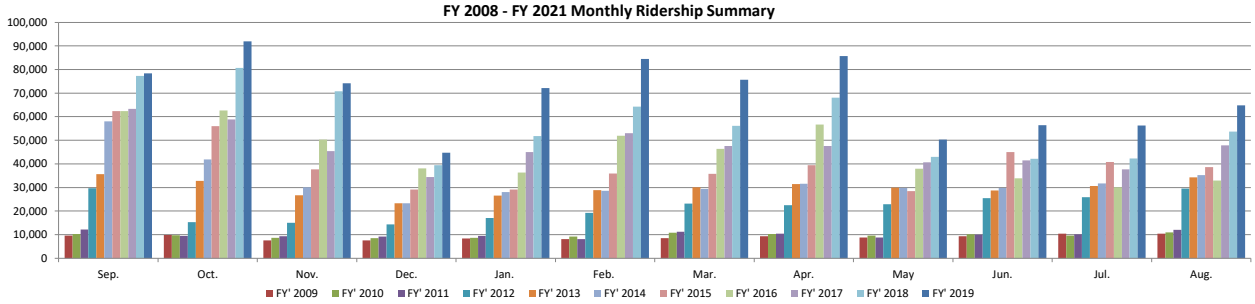


YEAR TO DATE RIDERSHIP REPORT

FY 2020 Sept-Oct	FY 2021 Sept-Oct	DIFFERENCE	% DIFFERENCE
190,237	36,476	-153,761	-81%

* Rural service - service in rural low -population areas outside of urbanized areas
* Urban service- service between or within urbanized areas

FY 2008 - FY 2021 Monthly Ridership Summary



Fiscal Year	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Total	Difference	%Change
FY' 2008	9,978	4,927	4,378	4,077	9,057	9,065	8,832	9,195	9,624	9,031	8,706	9,568	96,438	45,095	88%
FY' 2009	9,538	9,913	7,540	7,562	8,323	8,113	8,567	9,344	8,720	9,363	10,483	10,428	107,894	11,456	12%
FY' 2010	10,274	9,702	8,580	8,471	8,670	9,204	10,836	10,274	9,566	10,107	9,537	10,931	116,152	8,258	8%
FY' 2011	12,184	9,480	9,336	9,254	9,445	8,016	11,255	10,460	8,801	10,046	10,176	12,111	120,564	4,412	4%
FY' 2012	29,644	15,256	14,982	14,267	17,057	19,196	23,184	22,450	22,827	25,436	25,807	29,518	259,624	139,060	115%
FY' 2013	35,707	32,758	26,634	23,293	26,542	28,858	30,087	31,465	29,911	28,744	30,596	34,255	358,850	99,226	38%
FY' 2014	58,118	41,893	30,069	23,338	28,011	28,593	29,386	31,638	29,761	29,806	31,733	35,241	397,587	38,737	11%
FY' 2015	62,315	55,976	37,648	29,214	29,063	35,854	35,785	39,503	28,431	45,056	40,891	38,683	478,419	80,832	20%
FY' 2016	62,317	62,627	50,274	38,130	36,305	51,887	46,286	56,675	37,990	33,822	30,148	32,939	539,400	60,981	13%
FY' 2017	63,305	58,773	45,397	34,433	45,012	53,051	47,542	47,628	40,601	41,409	37,719	47,917	562,787	23,388	4%
FY' 2018	77,255	80,744	70,823	39,507	51,877	64,209	56,076	68,058	42,956	42,169	42,264	53,725	689,663	126,876	23%
FY' 2019	78,440	91,930	74,137	44,709	72,199	84,562	75,604	85,670	50,318	56,330	56,234	64,773	834,906	145,243	21%
FY' 2020	91,929	98,308	83,799	56,545	78,630	89,404	46,276	11,431	15,009	17,932	14,182	16,121	619,566	-215,340	-26%
FY' 2021	17,146	16,894	0	0	0	0	0	0	0	0	0	0	34,040	-800,866	-96%
Monthly Change from Previous FY	-61,294	-75,036	-74,137	-44,709	-72,199	-84,562	-75,604	-85,670	-50,318	-56,330	-56,234	-64,773	-800,866	18,367	2%
% Change	-78%	-82%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-100%	-135%	-142%	79%	51%

FY 2018 URBANIZED PERFORMANCE MEASURES*

COST EFFECTIVENESS
Cost per revenue mile = $2.40 State Avg. = $4.85
Cost per revenue hour = $46.22 State Avg. = $73.39
Cost per passenger = $4.16 State Avg. = $5.21

SERVICE EFFICIENCY
Passengers per revenue mile = 0.58 State Avg. =.93
Passengers per revenue hour = 11.12 State Avg.=14.10

FY 2018 NONURBANIZED PERFORMANCE MEASURES*

COST EFFECTIVENESS
Cost per revenue mile = $3.03 State Avg. = $2.99
Cost per revenue hour = $71.08 State Avg. = $59.91
Cost per passenger = $14.83 State Avg. = $20.21

SERVICE EFFICIENCY
Passengers per revenue mile = 0.20 State Avg. = .15
Passengers per revenue hour = 5.44 State Avg. = 2.96

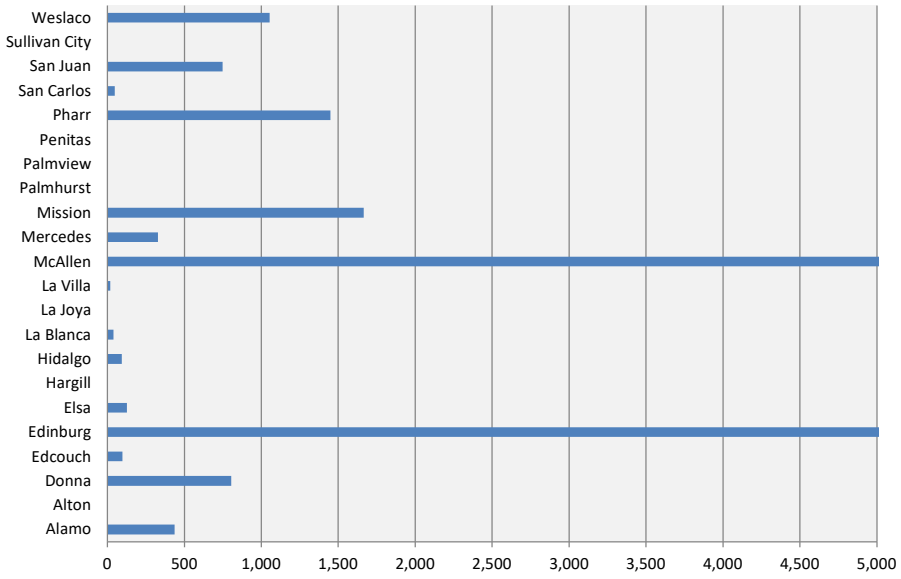
*2018 Texas Transit Statistics Preliminary Report

Distribution of Ridership

Hidalgo County

Alamo	435
Alton	0
Donna	804
Edcouch	98
Edinburg	5,281
Elsa	127
Hargill	0
Hidalgo	93
La Blanca	39
La Joya	0
La Villa	18
McAllen	5,754
Mercedes	327
Mission	1,666
Palmhurst	0
Palmview	0
Penitas	0
Pharr	1,449
San Carlos	48
San Juan	748
Sullivan City	0
Weslaco	1,054
Total	**17,941**

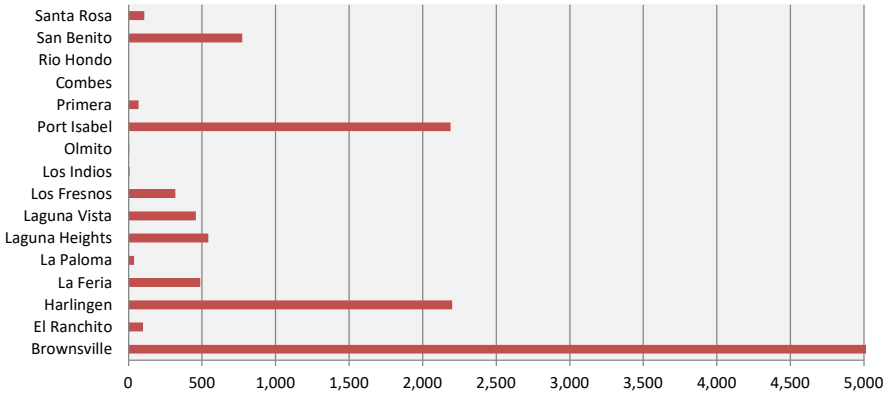
Hidalgo County by Cities



Cameron County

Brownsville	5,504
El Ranchito	98
Harlingen	2,200
La Feria	487
La Paloma	37
Laguna Heights	542
Laguna Vista	458
Los Fresnos	317
Los Indios	6
Olmito	5
Port Isabel	2,189
Primera	67
Combes	0
Rio Hondo	0
San Benito	773
Santa Rosa	109
Total	**12,792**

Cameron County by Cities



Willacy County

Total	**551**

Starr County

Total	**2,486**

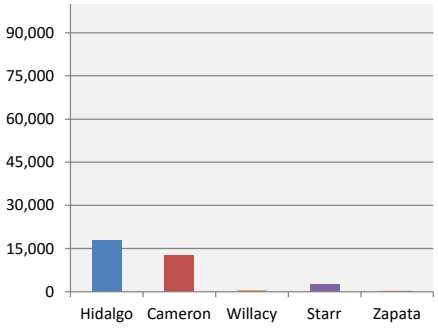
Zapata County

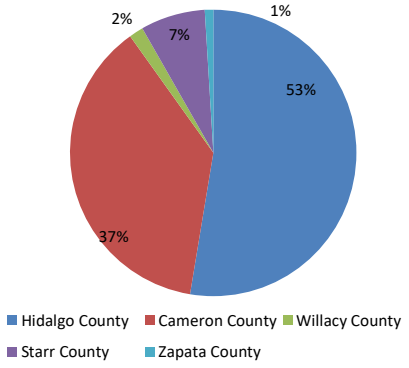
Total	**329**

SYSTEM TOTAL

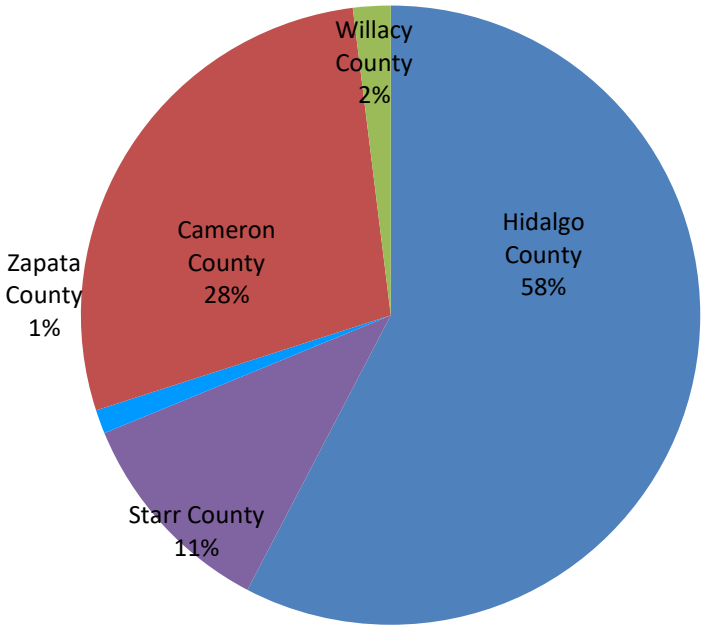
34,099

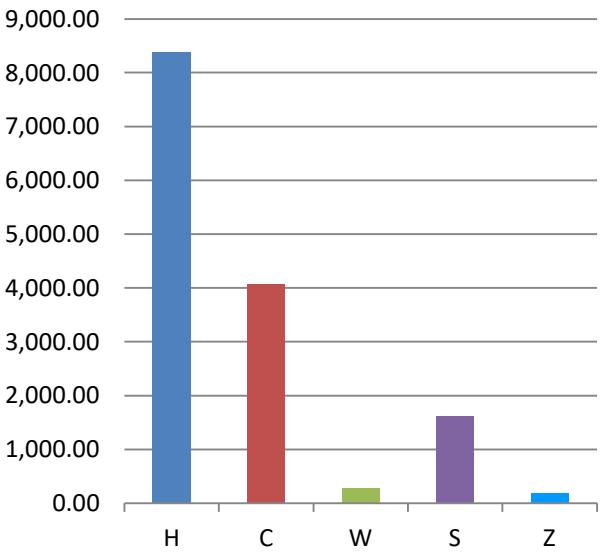
Ridership by County





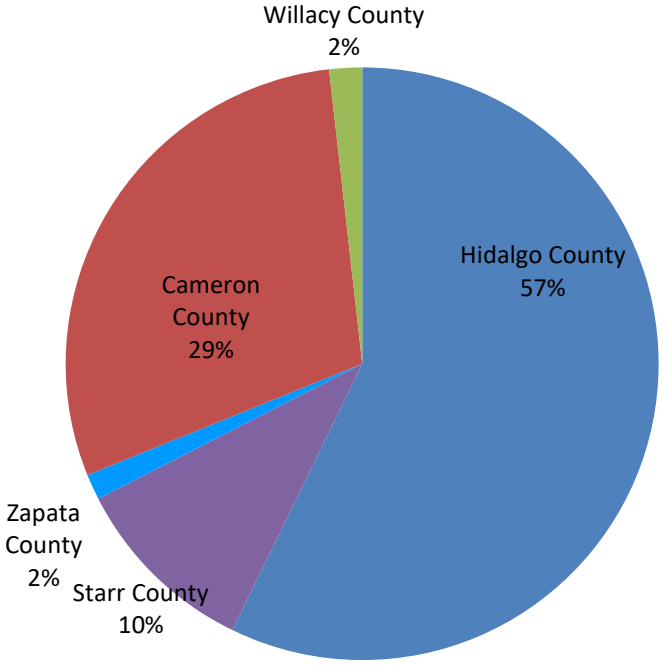
Distribution of Revenue Hours

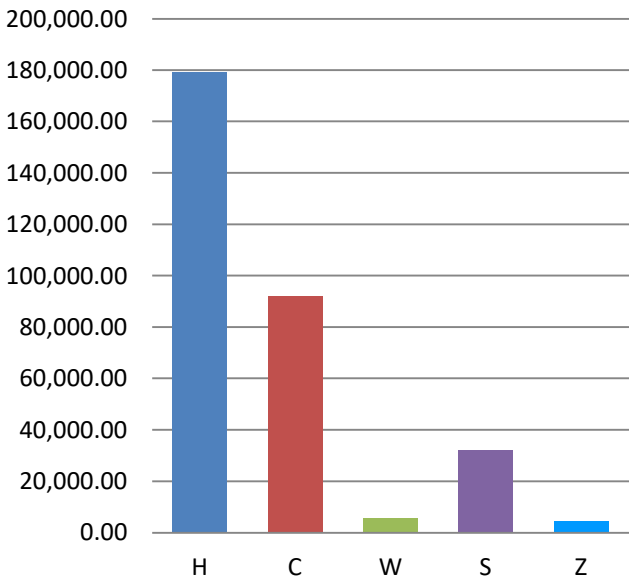




Revenue Hours Provided	
Hidalgo County	8,371.00
Starr County	1,617.00
Zapata County	179.00
Cameron County	4,070.00
Willacy County	283.00
Total Revenue Hours	**14,520.00**

Distribution of Revenue Miles

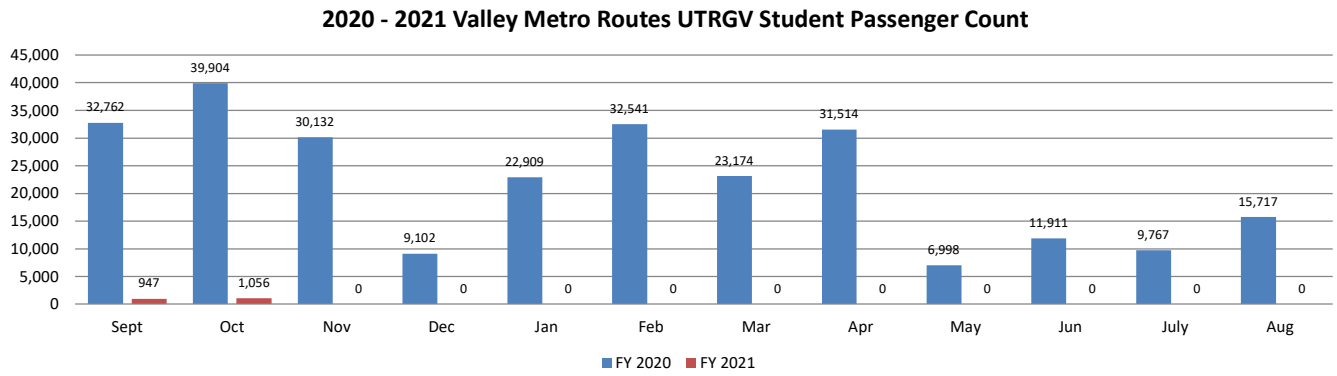




Revenue Miles Provided	
Hidalgo County	179,110
Starr County	32,078
Zapata County	4,386
Cameron County	91,843
Willacy County	5,590
Total Revenue Miles	**313,007**

FY 2021 University of Texas Rio Grande Valley
Valley Metro Routes
Monthly Cumulative Passenger Counts

Routes	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Total
10	0	0											0
12	27	51											78
14	66	62											128
15	0	0											0
16	0	0											0
20	0	0											0
21	0	0											0
30	0	0											0
31	0	0											0
32	0	0											0
40	0	0											0
41	0	0											0
42	0	0											0
44	0	0											0
45	1	3											4
50	0	0											0
Vaquero Express	853	940											1,793
Total	947	1,056	0	0	0	0	0	0	0	0	0	0	2,003
FY 2018	32,762	39,904	30,132	9,102	22,909	32,541	23,174	31,514	6,998	11,911	9,767	15,717	266,431
Change Over Previous FY	-31,815	-38,848	-30,132	-9,102	-22,909	-32,541	-23,174	-31,514	-6,998	-11,911	-9,767	-15,717	



South Texas College - FY 2021
Valley Metro Routes
Monthly Cumulative Passenger Counts

Routes	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Total
10	0	0											0
12	8	1											9
14	0	0											0
15	0	0											0
16	0	0											0
20	0	0											0
30	0	0											0
31	43	52											95
32	0	0											0
40	0	0											0
41	0	0											0
42	0	0											0
44	3	3											6
45	0	0											0
60	17	21											38
61	9	0											9
62	6	0											6
DR-RGC	0	0											0
Purpleline	22	16											38
Greenline	87	122											209
Total	**195**	**215**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**410**
Non Valley Metro Routes													
Yellowline	97	100											197
Park & Ride	0	0											0
Total	**97**	**100**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**197**
Grand Total	**292**	**315**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**607**
Change Over Previous Month			-315	0	0	0	0	0	0	0	0	0	

South Texas College - Mid Valley JagExpress
STC Student Passenger Counts Comparison
FY 2021

Direct Service

Routes	STC	UTRGV	General Public	Total
Route 12 Ecouch/Elsa-Edinburg	9	78	660	747
Route 31 Business 83	95	0	5,559	5,654
Purple Line	38		17	55
Yellow Line	197		0	197
Green Line	209		722	931
Park & Ride	0		0	0
Route 60 Greenline Roma	38		496	534
Route 61 RGC West	9		461	470
Route 62 RGC East	6		663	669
DR-RGC	0		813	813
Vaquero Express		1,793	0	1,793
Total	**601**	**1,871**	**9,391**	**11,863**

Connecting Service

Routes	Connection	STC	UTRGV	General Public	Total
Route 10 Edinburg - McAllen	12, 31	0	0	2,845	2,845
Route 14 UTRGV VABL	12	0	128	138	266
Route 15 Edinburg	12	0	0	791	791
Route 20 Mission - McAllen	31	0	0	2,727	2,727
Route 30 Pharr San Juan - Edinburg	31	0	0	1,252	1,252
Route 32 Donna International Bridge	31	0	0	264	264
Route 40 Harlingen Medical	31	0	0	1,285	1,285
Route 41 Harlingen Retail	31	0	0	1,528	1,528
Route 42 San Benito Harlingen	31	0	0	443	443
Route 44 La Feria/Santa Rosa/Primera	31	6	0	781	787
Route 45 Cameron Career Connection	31	0	4	2,450	2,454
Total		**6**	**132**	**14,504**	**14,642**

Total Service

	STC	UTRGV	General Public	Total
Grand Total	**607**	**2,003**	**23,895**	**26,505**

FY 2021 TSTC
Valley Metro Routes
Monthly Cumulative Passenger Counts

Routes	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Total
10	0	0											**0**
12	0	0											**0**
14	0	0											**0**
31	0	0											**0**
40	0	0											**0**
41	0	0											**0**
42	0	0											**0**
43	0	0											**0**
44	6	4											**10**
45	9	16											**25**
50	0	0											**0**
Willacy	0	0											**0**
Total	**15**	**20**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**35**
Change Over Previous Month		**5**	**-20**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**-15**

