section 7: recommendations

The Waco MPO has identified 6 implementation strategies which correspond to one of the 6 guiding principles of the plan identified in Section 2. Each of these strategies is constrained against the financial projections identified in Section 6. Each strategy is considered equally important and therefore priority neutral. Project recommendations identified within this plan are considered regionally significant and are intended to address national priorities identified by the US Congress within the federal FAST Act which is described in Section 1.3.2, FAST Act Overview.

project identification and evaluation

Projects under consideration for the MTP were identified via one of the following processes: 1). Identification of need by one or more MPO member governments, 2.) Request by a stakeholder interest within the Waco Region, 3.) Identification of need by MPO staff, 4.) Identification of need as part of a formal corridor or modal need study, or 5.) Request by a McLennan County citizen during the initial public outreach efforts (see Section 8 for a description of these efforts).

Each project identified for consideration were then scored and ranked through project evaluation criteria established by the MPO Technical Committee. The criteria asks 22 questions about how well each project addresses a particular transportation objective. Projects are then scored on a scale of 100 to -100 for how well or how poorly they address each guiding principle of the MTP. Projects can receive a total score ranging from 600 to -600 points.

For specific details regarding the project evaluation criteria and scoring system, refer to Appendix B.

project selection

Once projects were scored, they were then recommended for inclusion within one of the 6 strategies based on that project's anticipated efficacy in making progress towards that strategy's guiding principle.

With that said, other considerations that were used to identify project priority recommendations included the following:

1. Projects with higher principle and total scores were generally given a higher priority.
2. Projects with significant design, engineering or right of way phases underway or completed would be identified as a short term priority unless very significant changes in conditions have taken place since 2015 such that the project no longer accomplishes the original purpose and need. Low scoring projects in this situation would be evaluated for continued viability.
3. Projects that have not had a significant public vetting process and have potentially controversial scope of work may require additional vetting before being recommended as a priority within the MTP (see Map 7.7).
4. Since funding is heavily siloed, projects must have sufficient anticipated funding within the appropriate funding category in order to be included as a recommended priority.
5. Projects with a total score less than 50 are not recommended as an MTP priority, even if sufficient resources are forecasted to be available except for the following circumstances:
    a. Projects that are currently under development and which MPO staff has concluded remain viable and accomplish the original purpose and need.
    b. Projects for which the proposed scope of work is forecasted to significantly reduce an observed high number of fatal and/or life threatening injury crashes.
6. Projects that are scheduled for construction during fiscal year 2020 are not scored and would be recommended for inclusion as a short term priority within the previously identified strategy in the 2040 MTP.

10-year plan of projects

This section identifies the rank order project priorities for Connections 2045: The Waco Metropolitan Transportation Plan.

Projects identified as a 'Short Term Priority' constitute the Waco MPO's '10 year plan' as required under SB 252. Note: all costs within this section are reported in millions unless identified otherwise.

strategy 1: improve state of good repair

guiding principle 1: satisfactorily maintain existing transportation facilities

Preserving existing infrastructure at a satisfactory level is identified as an important goal of this plan. With underinvestment in transportation infrastructure a consistent theme, proper maintenance of existing infrastructure continues to be extremely important as the cost of rebuilding or replacing infrastructure is considerably more expensive.

Strategy 1 scores projects between 100 and -100 points based on how well or how poorly they answer the following questions:

1. Does the project target facilities with poor pavements?
2. Does the scope of work address poor pavement conditions?
3. Does the project target facilities with poor bridge conditions?
4. Does the scope of work address poor bridges?
5. Does the project improve the fleet condition for public transportation vehicles?
6. Does the project improve the condition of public transportation facilities?
7. Does the project address traffic signal condition and communications
8. Does the project improve the condition of existing sidewalks?

Each project is also scored under each of the other 5 strategies. Projects that not only improve facility condition, but score well under other strategies are generally prioritized higher than those that only address facility condition.

The MPO explored the question of whether to shift funds traditionally dedicated to mobility projects (system expansion) to preservation and rehabilitation projects. This plan does not go so

far as to make that recommendation. **The plan does not, however, recommend any diversions of resources from preservation and rehabilitation categories in order to further expand the transportation system.**

Most work identified within Strategy 1 are identified as part of grouped preventative maintenance categories. Projects funded with either state or federal funds are grouped into categories consistent with TxDOT funding categories. Local preventative maintenance or rehabilitation projects are grouped into two categories based upon either short-term on long-term work. As routine preventative maintenance is a necessary task, the work identified in Tables 7.1 and 7.2 are not scored.

table 7.1 – highway preventative maintenance and rehabilitation categorical projects

Category	System	Project ID	Short-Term Cost	Long-Term Cost	Total Cost
Maintenance & Rehab	State	S-PMR	$248.6	$333.3	$581.9
Bridge Replacement & Rehab	State	S-BRI	$31.7	$62.6	$94.3
Maintenance & Rehab	County / Municipal	L-PMR	$125.0	$220.0	$345.0
Total All Maintenance & Rehab	All Roadways	n/a	$405.3	$615.9	$1,021.2

Preventative maintenance is also important for public transportation vehicles as route schedules are more reliable when vehicles are properly maintained. Similar to physical infrastructure, the long term operational cost of transit vehicles is less with proper maintenance with fewer major and costly repairs. Similar to highway maintenance, transit vehicle maintenance for Waco Transit is grouped into a single category of work instead of individual projects.

table 7.2 – public transportation preventative maintenance categorical project

Category	System	Project ID	Short-Term Cost	Long-Term Cost	Total Cost
Preventative Maintenance	Waco Transit	CT-1	$18.2	$41.7	$59.9

In addition to normal preventative maintenance, several more significant reconstruction efforts were identified as standalone projects. While most roadway widening involves some level of reconstruction of existing facilities, the primary goal of the following priorities are to address structural roadway or bridge deficiencies and not necessarily adding capacity.

Short term and long term priority projects described below are shown on Map 7.1. Total costs for Strategy 1 are provided in Table 7.3.

short term priorities (2020 to 2030)

Priority 1

Project ID: S-011

Facility: FM 2113 (Spring Valley Rd)

Extent: FM 1695 (Hewitt Dr) to FM 2063 (Sun Valley Rd)

Current: 2 lane FM road without shoulders

Scope of Work:
1) Widen to add shoulders and center turn lane
2) Construct curb and gutter
3) Construct sidewalks and pedestrian crossings in vicinity of Spring Valley Elementary School

Purpose and Need:
1) Address increase in left turning movements along corridor
2) Address inadequate cross storm drainage
3) Provide safe pedestrian facilities in vicinity of Spring Valley Elementary School

Project Scoring: Project scoring was not applied to this project due to being carried over from 2040 MTP.

Fiscal Constraint: Project funding commitment made in 2019 and is carried forward into the new MTP as project may be let for construction prior to adoption of new plan. Forecasted fiscal constraint does not apply to this project.

Work Phase	Cost
Engineering	$1.6*
Right of Way	$2.5*
Construction	$20.0
Total	$24.1

*Phase complete or underway

Priority 2

Project ID: L-044

Facility:	Loop 2 (17th & 18th Streets)
Extent:	Homan Ave to US Bus 77 (LaSalle Ave)
Current:	6 & 8 lane one-way streets
Scope of Work:	1) Reconstruct 17th Street 2) Remove 1 lane in each direction 3) Narrow existing lanes and restripe to include bicycle lanes in each direction 4) Construct continuous sidewalks on both sides of each street
Purpose and Need:	1) Right size facility to reduce pavement maintenance needs, encourage reduced travel speeds, while ensuring adequate capacity for future traffic volumes 2) Provide safe bicycle and pedestrian facilities along corridor
Project Scoring:	Good Repair: 100 Safety: 60 Efficiency: 100 Livability: 88 Freight / Econ Dev: 55 Equity: 60 Total Score: 463
Fiscal Constraint:	Mobility: $3.0 Maintenance: $2.0 Safety: $2.0 Local: $1.5 Bike / Ped: $1.7

Work Phase	Cost
Engineering	$1.2
Right of Way	$0.0
Construction	$9.0
Total	$10.2

Priority 3

Project ID: L-013

Facility:	Mars Dr
Extent:	FM 1695 (Hewitt Dr) to Texas Central Pkwy
Current:	2 lane county road without shoulders
Scope of Work:	1) Reconstruct Roadway 2) Widen to 4 lanes divided 3) Construct multi-purpose bicycle / pedestrian path parallel to roadway from FM 1695 to Midway High School 4) Elevate culvert over drainage channel to avoid flooding potential
Purpose and Need:	1) Reconstruct failing pavements 2) Address increased traffic volumes resulting from Midway High School and growth of industries within Texas Central Industrial Park 3) Provide safe bicycle and pedestrian facilities along corridor 4) Address flood vulnerability of drainage crossing
Project Scoring:	Good Repair: 50 Safety: 8 Efficiency: 0 Livability: 78 Freight / Econ Dev: 43 Equity: 0 Total Score: 178
Fiscal Constraint:	Local: $9.3

Work Phase	Cost
Engineering	$1.0
Right of Way	$0.0
Construction	$8.3
Total	$9.3

long term priorities (2031 to 2045)

Priority 4

Project ID: S-032F

Facility:	State Highway 6
Extent:	Bridges over Lake Waco
Current:	4 lane freeway with no frontage roads
Scope of Work:	Reconstruct and widen Lake Waco Bridges and approaches to accommodate 6 lanes with shoulders
Purpose and Need:	1) Address anticipated future structural deficiency of bridges 2) Address existing functional obsolescence with lack of shoulders on bridge
Project Scoring:	Good Repair: 48 Safety: -3 Efficiency: -15 Livability: -20 Freight / Econ Dev: 65 Equity: 20 Total Score: 95
Fiscal Constraint:	Mobility: $31.8 Maintenance: $44.4

Work Phase	Cost
Engineering	$9.0
Right of Way	$0.0
Construction	$67.1
Total	$76.1

Priority 5
Project ID: S-071

Facility: State Highway 6

Extent: US 84 (West Waco Dr) to Bosque Blvd

Current: 4 lane freeway with continuous frontage roads

Scope of Work:
1) Reconstruct main lane bridges over US 84 and Bosque Blvd
2) Reconstruct Sanger Ave Overpass and add bike lanes & pedestrian overpass

Purpose and Need:
1) Address existing functional obsolescence and lack of shoulders on US 84 bridge
2) Address substandard vertical clearance for freight network bridges at Sanger Ave Overpass
3) Address lack of safe bicycle & pedestrian crossing of SH 6

Project Scoring:

Good Repair:	100
Safety:	0
Efficiency:	-25
Livability:	29
Freight / Econ Dev:	90
Equity:	60
Total Score:	254

Fiscal Constraint: Mobility: $28.3

Work Phase	Cost
Engineering	$3.0
Right of Way	$0.0
Construction	$25.3
Total	$28.3

Priority 6
Project ID: L-018

Facility: Old McGregor Rd

Extent: FM 1695 (Hewitt Dr) to Ritchie Rd

Current: 2 lane county road without shoulders

Scope of Work:
1) Reconstruct roadway
2) Widen to add bike lanes and center turn lane
3) Construct curb and gutter
4) Construct continuous sidewalks on both sides of roadway

Purpose and Need:
1) Reconstruct failing pavements
2) Address future traffic volumes and turning movements
3) Provide safe bicycle and pedestrian facilities along corridor

Project Scoring:

Good Repair:	38
Safety:	0
Efficiency:	0
Livability:	17
Freight / Econ Dev:	50
Equity:	0
Total Score:	105

Fiscal Constraint: Local: $9.7

Work Phase	Cost
Engineering	$1.0
Right of Way	$1.2
Construction	$7.5
Total	$9.7

Priority 7
Project ID: T-019

Facility: Waco Transit Downtown Intermodal Center

Scope of Work: Rehabilitate and update facility

Purpose and Need:
1) Rehab, repair and replace aging components of what will be a 30 year old facility by 2030.
2) Update design to provide improved customer service and better address security needs.

Project Scoring:

Good Repair:	15
Safety:	15
Efficiency:	25
Livability:	42
Freight / Econ Dev:	0
Equity:	40
Total Score:	137

Fiscal Constraint:

FTA Section 5307:	$0.1
Local:	$0.1

Work Phase	Cost
Construction	$0.2
Total	$0.2

table 7.3 – total costs for strategy 1

Mode	Short-Term Cost	Long-Term Cost	Total Cost
Highways	$445.7	$723.5	$1,169.2
Public Transportation	$18.2	$41.9	$60.1
Bicycle / Pedestrian	$3.2	$6.5	$9.7
Total All Modes	$467.1	$771.9	$1,239.0

strategy 2: improve safety and security

guiding principle 2: improve the safety and security of the transportation system

One fatality or serious injury is unacceptable. Between 2016 and 2018, 108 persons died and 569 persons sustained life threatening injuries as a direct result of motor vehicle crashes within the Waco Metropolitan Area. Although it is estimated that 80 to 90% of all crashes are the result of driver error, there are a number of design features which, if implemented, can either reduce the total number of crashes or their severity.

Strategy 2 scores projects between 100 and -100 points based on how well or how poorly they answer the following questions:

9. Would the scope of work reduce total crashes and/or improve crash severity?
10. Are there a significant number of bicycle or pedestrian crashes within the project limits?

Each project is also scored under each of the other 5 strategies. Projects that not only reduce crashes and their severity, but score well under other strategies are generally prioritized higher than those that only address crashes.

The Waco Metropolitan Area Thoroughfare Plan, adopted by the MPO Policy Board in 2012, identifies appropriate design treatments for thoroughfares with the intent to reduce crashes and their severity. **The final designs of highway projects identified as a part of this plan and consequently included within the Transportation Improvement Program are intended to be consistent with those identified by the Thoroughfare Plan. Furthermore, when highways are resurfaced or reconstructed, the intent is that they be reconstructed or restriped in a manner consistent with these same design guidelines.**

TxDOT identifies safety projects on the state highway system intended to reduce crashes and their severity. These projects include work to remove hazardous objects from the right of way, adding shoulders where none are present, adding left or right turn bays, etc. Category 8 funds are targeted to these safety projects, which are not listed individually within the plan, and instead are grouped together into a single category, as shown in Table 7.4. This is similar to how preventative maintenance and rehabilitation projects are treated.

table 7.4 – highway safety categorical project

Category	System	Project ID	Short-Term Cost	Long-Term Cost	Total Cost
Safety	State	S-STY	$10.0	$15.0	$25.0

In addition to this categorical work, the MPO has identified several significant projects that are targeted to specific concerns. These concerns are identified within the purpose and need statement for each project. Short term priority and long term priority projects described below are shown on Map 7.2. Total costs for Strategy 2 are provided in Table 7.5.

short term priorities (2020 to 2030)

Priority 1
Project ID: S-061

Facility:	SH 31	
Extent:	Intersection at FM 939 (T K Pkwy)	
Current:	At grade intersection	
Scope of Work:	Construct main lane overpass for SH 31	
Purpose and Need:	Reduce fatal and life threatening injury crashes	
Project Scoring:	Good Repair:	0
	Safety:	20
	Efficiency:	-25
	Livability:	-15
	Freight / Econ Dev:	95
	Equity:	-20
	Total Score:	55
Fiscal Constraint:	Mobility:	$5.0
	Safety:	$5.0

Work Phase	Cost
Engineering	$1.0
Right of Way	$0.0
Construction	$9.0
Total	$10.0

Priority 2
Project ID: S-066

Facility:	SH 31	
Extent:	Intersection at FM 2311 (Heritage Pkwy)	
Current:	At grade intersection	
Scope of Work:	Construct main lane overpass for SH 31	
Purpose and Need:	Reduce fatal and life threatening injury crashes	
Project Scoring:	Good Repair:	0
	Safety:	20
	Efficiency:	-25
	Livability:	-15
	Freight / Econ Dev:	85
	Equity:	-20
	Total Score:	45
Fiscal Constraint:	Mobility:	$5.0
	Safety:	$5.0

Work Phase	Cost
Engineering	$1.0
Right of Way	$0.0
Construction	$9.0
Total	$10.0

Priority 3

Project ID: S-072

Facility: North Loop 340

Extent: IH-35 to Union Pacific RR Overpass

Current: Unsignalized intersections with no pedestrian facilities

Scope of Work:
1) Install traffic signals at Bank Dr and Research Blvd
2) Install pedestrian crosswalks and refuge islands at both intersections
3) Construct continuous sidewalk along south side of road

Purpose and Need:
1) Reduce total crashes due to vehicles turning left or going straight at both intersections
2) Address lack of safe pedestrian crossing of Loop 340

Project Scoring:

Good Repair:	0
Safety:	13
Efficiency:	-25
Livability:	38
Freight / Econ Dev:	65
Equity:	60
Total Score:	151

Fiscal Constraint: Safety: $1.2

Work Phase	Cost
Engineering	$0.2
Right of Way	$0.0
Construction	$1.0
Total	$1.2

Priority 4

Project ID: S-048E

Facility: US 84 (Woodway Dr)

Extent: SH 6 / W Loop 340 to FM 1695 (Hewitt Dr)

Current: 4 lane freeway with continuous frontage roads

Scope of Work:
1) Change on & off ramps from diamond configuration to 'X' configuration
2) Construct main lane auxiliary ramps in between on & off ramps

Purpose and Need: Shifting storage of traffic backing up from intersections from main lanes to frontage roads which have slower speeds and should reduce possibility of rear-end crashes.

Project Scoring:

Good Repair:	10
Safety:	0*
Efficiency:	-25
Livability:	13
Freight / Econ Dev:	75
Equity:	-20
Total Score:	53

*Insufficient research has been conducted regarding quantifying the impact of changing ramp configurations on reducing crashes. Anecdotal evidence from similar projects within larger metro areas does suggest some reduction in both total crashes and severity for congested corridors.

Fiscal Constraint:

Mobility:	$3.6
Maintenance:	$1.0
Safety:	$2.6

Work Phase	Cost
Engineering	$0.9
Right of Way	$0.0
Construction	$6.3
Total	$7.2

long term priorities (2031 to 2045)

Priority 5

Project ID: P-001

Facility: IH-35

Extent: Vicinity of Bellmead Wal-Mart

Current: No Existing Facility

Scope of Work:
1) Construct pedestrian overpass over IH-35 main lanes and frontage roads
2) Construct bus stop on Wal-Mart side of overpass or provide pedestrian connection to Bus Rapid Transit station at North Loop 340

Purpose and Need:
1) Reduce high number of fatalities resulting from pedestrian crossing of IH-35 main lanes
2) Address lack of pedestrian crossings of IH-35 between Loop 340 and Behrens Circle
3) Provide better transit connection to Bellmead Wal-Mart shopping district

Project Scoring:

Good Repair:	0
Safety:	23
Efficiency:	-25
Livability:	77
Freight / Econ Dev:	65
Equity:	60
Total Score:	200

Fiscal Constraint:

Mobility:	$2.9
Safety:	$2.8

Work Phase	Cost
Engineering	$0.5
Right of Way	$0.0
Construction	$5.2
Total	$5.7

table 7.5 – total costs for strategy 2

Mode	Short-Term Cost	Long-Term Cost	Total Cost
Highways	$37.9	$15.0	$52.9
Public Transportation	$0.0	$0.2	$0.2
Bicycle / Pedestrian	$0.5	$5.5	$6.0
Total All Modes	$38.4	$20.7	$59.1

strategy 3: improve system efficiency

guiding principle 3: maximize the use of existing transportation facilities before system expansion

Highway expansion has been the traditional method of choice to address projected increases in mobility demand. A primary reason for this has been population and employment moving to areas with inadequate highway infrastructure to accommodate this increased demand. This population and employment shift has had the effect of creating a number of highway facilities with significant excess capacity, capacity that must be maintained regardless of its usage. **With transportation funding remaining at a significant level of underinvestment, maintaining underutilized highways and bridges have become a luxury that is difficult for the region to afford.**

Strategy 3 scores projects between 100 and -100 points based on how well or how poorly they answer the following questions:

11. Does the current highway have more capacity than is or will be needed?
12. For underutilized corridors, does the project reduce the amount of pavement or bridge structures that will need to be maintained while still providing adequate future level of service?
13. Does the project leverage federal and state funds with other funding?

Each project is also scored under each of the other 5 strategies. Projects that not only accommodate existing and future traffic volumes with less pavement or structures, but score well under other strategies are generally prioritized higher than those that only address efficiency.

Short term priority and long term priority projects described below are shown on Map 7.3. Total project costs for Strategy 3 are shown in Table 7.6

short term priorities (2020 to 2030)

Priority 1

Project ID: L-036

Facility: Washington Ave

Extent: S 5th St to S 18th St

Current: 4 lane one-way street with parallel parking

Scope of Work: Convert to 2 lane street with 2-way operations, parallel parking and bicycle lanes

Purpose and Need: 1) Reduce speeds and improve corridor for bicycle and pedestrian modes
2) Provide two-way access for properties along corridor

Project Scoring: Project scoring was not applied to this project due to being carried over from 2040 MTP.

Fiscal Constraint: Local $3.5

Work Phase	Cost
Engineering	$0.4
Right of Way	$0.0
Construction	$3.1
Total	$3.5

Priority 2

Project ID: S-057

Facility: US 84 (East Waco Dr)

Extent: Intersection at US Business 77 (Potts Interchange)

Current: 3-level freeway to freeway interchange with continuous frontage roads

Scope of Work:
1) Convert to at-grade roundabout
2) Construct bicycle and pedestrian path through intersection

Purpose and Need:
1) Remove bridges that are either structurally deficient or functionally obsolete or both and are not needed for current or future traffic.
2) Current and future traffic volumes do not require freeway capacities and a boulevard design with roundabout is forecasted to adequately accommodate future volumes.
3) Elimination of frontage roads provides right of way to accommodate station for Bus Rapid Transit project (Project ID: T-016)
4) Boulevard design provides direct property access and reduced speeds supporting redevelopment of adjacent properties to bring investment and economic opportunities to area of concentrated poverty.

Project Scoring:

Good Repair:	85
Safety:	5
Efficiency:	100
Livability:	72
Freight / Econ Dev:	30
Equity:	40
Total Score:	332

Fiscal Constraint: Mobility: $17.0
Maintenance: $13.0

Work Phase	Cost
Engineering	$3.0
Right of Way	$0.0
Construction	$27.0
Total	$30.0

long term priorities (2031 to 2045)

Priority 3
Project ID: S-026B

Facility: Loop 574 / Loop 484 (Marlin Hwy)

Extent: US Business 77 (LaSalle Ave) to UP RR Overpass

Current: Loop 574 – No Existing Facility
Loop 484 – 4 lane freeway with continuous frontage roads

Scope of Work:
1) Extend Loop 574 as a 4 lane boulevard from current terminus at US Business 77 to connect to Loop 484
2) Construct roundabout at proposed Loop 574 / Loop 484 interchange
3) Convert 3-level interchange at Loop 484 / US Business 77 to an at-grade roundabout
4) Convert Loop 484 between US Business 77 and proposed Loop 574 interchange to a 4 lane boulevard with bicycle / pedestrian path

Purpose and Need:
1) Remove bridges that are either structurally deficient or functionally obsolete or both and are not needed for current or future traffic.
2) Current and future traffic volumes do not require freeway capacities and a boulevard design with roundabout is forecasted to adequately accommodate future volumes.
3) Loop 574 provides a more direct connection into Downtown Waco from SH 6 and points to the southeast

Project Scoring:

Good Repair:	45
Safety:	0
Efficiency:	100
Livability:	38
Freight / Econ Dev:	48
Equity:	40
Total Score:	271

Fiscal Constraint: Mobility: $10.0
Maintenance: $4.1
Private: $0.5

Work Phase	Cost
Engineering	$1.6
Right of Way	$0.9
Construction	$12.1
Total	$14.6

Priority 4
Project ID: S-069

Facility: US Business 77 (South Loop Dr)

Extent: IH-35 to Loop 484 (Marlin Hwy)

Current: 4 lane expressway with discontinuous frontage roads

Scope of Work:
1) Convert to 4 lane boulevard with bicycle / pedestrian path
2) Convert interchange at Orchard Ln to roundabout
3) Reconstruct bridge over UP Railroad to meet 23' rail vertical clearance requirements

Purpose and Need:
1) Remove bridge at Orchard Ln that is functionally obsolete and is not needed for current or future traffic.
2) Current and future traffic volumes do not require freeway capacities and a boulevard design with roundabout is forecasted to adequately accommodate future volumes.
3) Correct substandard vertical clearance of bridge over UP Railroad

Project Scoring:

Good Repair:	80
Safety:	0
Efficiency:	85
Livability:	44
Freight / Econ Dev:	55
Equity:	40
Total Score:	304

Fiscal Constraint: Mobility: $14.0
Maintenance: $4.2

Work Phase	Cost
Engineering	$2.1
Right of Way	$0.0
Construction	$16.1
Total	$18.2

Priority 5
Project ID: S-051

Facility: US Business 77 (Dallas Hwy)

Extent: Behrens Circle to Spring Lake Rd

Current: 4 lane hybrid boulevard with discontinuous frontage roads

Scope of Work:
1) Remove frontage roads and convert to standard boulevard design with bicycle and pedestrian path
2) Construct roundabouts at intersections with FM 2417 (Crest Dr) and Craven Ave

Purpose and Need:
1) Frontage roads are discontinuous, do not meet current design standards are not necessary to accommodate future traffic volumes.
2) Intersections at FM 2417 and Craven require better traffic control to reduce probability of future crash problems.

Project Scoring:

Good Repair:	10
Safety:	5*
Efficiency:	60
Livability:	44
Freight / Econ Dev:	10
Equity:	60
Total Score:	189

*Few crashes were observed at the FM 2417 or Craven Ave intersections during the period of MPO review. Each intersection, however, was reviewed by professional traffic operations engineers as part of Business 77 corridor study. Their review concluded that the lack of crashes was due only to very low traffic volumes and that the geometrics of the intersections could contribute to unacceptable numbers of severe crashes with increased traffic volumes.

Fiscal Constraint:

Mobility:	$16.3
Maintenance:	$15.0

Work Phase	Cost
Engineering	$3.7
Right of Way	$0.0
Construction	$27.6
Total	$31.3

table 7.6 – total costs for strategy 3

Mode	Short-Term Cost	Long-Term Cost	Total Cost
Highways	$31.5	$59.6	$91.1
Public Transportation	$0.7	$0.5	$1.2
Bicycle / Pedestrian	$1.3	$4.0	$5.3
Total All Modes	$33.5	$64.1	$97.6

strategy 4: improve regional livability

guiding principle 4: preserve regional air quality and environmental standards

Transportation has an enormous impact on people and their quality of life. Planners often employ the term 'livability' to quantify the impact that a transportation network has on a community. A livable transportation network provides viable mode choices beyond the automobile without excluding it. We can improve our regional livability by providing transportation infrastructure which facilitates safe travel for pedestrians, cyclists, and transit users. The MPO has identified numerous bicycle and pedestrian facility projects to strengthen the livability of our community and encourage shorter trips to be made by non-motorized modes. The entire universe of need for these modes are identified within the Waco Metropolitan Area Active Transportation Plan (ATP) adopted in July 2019. The highest priorities from that plan for which funding is forecasted to be available are identified in this strategy of MTP recommendations.

Strategy 4 scores projects between 100 and -100 points based on how well or how poorly they answer the following questions:

14. Does the project support trips by transit or non-motorized modes as these modes have inherently less emissions?
15. Is the project needed to support greenfield development now or in the future?
    a. Analysis of 2015 population + employment density
    b. Analysis of 2045 population + employment density
16. Could the project have a negative impact to sensitive natural habitats, important historical or cultural sites, or the human environment that would be difficult or expensive to mitigate?
17. Might the project provide positive impacts to the human environment or help mitigate or offset previous negative environmental impacts?

Each project is also scored under each of the other 5 strategies. Projects that not only address livability, regional air quality and environmental concerns, but score well under other strategies are generally prioritized higher than those that only address livability.

Many of the recommendations of Strategy 4 are focused on expanding options for non-motorized modes. While there are several stand-alone projects for bicycle and pedestrian infrastructure, many municipalities set aside additional resources for smaller bike / pedestrian projects. Table 7.7 estimates the resources regional municipalities set aside for such projects.

table 7.7 – bicycle and pedestrian categorical project

Mode	Project ID	Short-Term Cost	Long-Term Cost	Total Cost
Bicycle Priority Corridors	L-BP-1	$5.8	$8.8	$14.6
Pedestrian Priority Corridors	L-BP-2	$6.6	$9.8	$16.4
	Total	$12.4	$18.6	$31.0

Short term and long term priority projects described below are shown on Map 7.4. Total Strategy 4 costs are shown in Table 7.8.

Priority 1

Project ID: L-016

Facility: North 18th & North 19th Streets

Extent: Live Oak Ave to College Dr / Gregory Ln

Current: 4 lane arterial with center turn lane

Scope of Work:
1) Conduct Road Diet to create 2 lane arterial with center turn lane and bike lanes
2) Construct continuous sidewalks on both sides

Purpose and Need:
1) Current and future traffic volumes do not require 4 lanes of capacity and reduced number of lanes should reduce traffic speeds to a more appropriate level.
2) Provide safe bicycle and pedestrian facilities along corridor.
3) Reconstruct existing pavements which are in need of repair.

Project Scoring:

Good Repair:	80
Safety:	60
Efficiency:	0
Livability:	79
Freight / Econ Dev:	35
Equity:	60
Total Score:	314

Fiscal Constraint:

Safety:	$1.0
Local:	$4.7
Bike / Ped:	$1.0

Work Phase	Cost
Engineering	$0.8
Right of Way	$0.0
Construction	$5.9
Total	$6.7

Priority 2

Project ID: S-067

Facility: US Business 77 / US 77 (LaSalle Ave)

Extent: FM 434 (South University Parks Dr) to the Waco Traffic Circle

Current: 6 lane arterial with narrow center median and shoulders

Scope of Work:
1) Conduct Road Diet to create 4 lane arterial with standard width median and bike lanes
2) Construct continuous sidewalks on both sides

Purpose and Need:
1) Current and future traffic volumes do not require 6 lanes of capacity and reduced number of lanes should reduce traffic speeds to a more appropriate level.
2) Provide safe bicycle and pedestrian facilities along corridor.

Project Scoring:

Good Repair:	30
Safety:	23
Efficiency:	50
Livability:	73
Freight / Econ Dev:	45
Equity:	60
Total Score:	281

Fiscal Constraint:

Mobility:	$13.0
Maintenance:	$2.5
Safety:	$2.0

Work Phase	Cost
Engineering	$2.1
Right of Way	$0.0
Construction	$15.4
Total	$17.5

Priority 3

Project ID: S-035

Facility: Franklin Ave

Extent: South 17th Street to South 4th Street

Current: 4 lane one-way arterial with parallel parking

Scope of Work: Convert to 2 lane arterial with 2-way operations and parallel parking

Purpose and Need:
1) Reduce speeds and improve corridor for bicycle and pedestrian modes
2) Provide two-way access for properties along corridor

Project Scoring:

Good Repair:	45
Safety:	13
Efficiency:	35
Livability:	39
Freight / Econ Dev:	35
Equity:	40
Total Score:	207

Fiscal Constraint: Local: $3.3

Work Phase	Cost
Engineering	$0.3
Right of Way	$0.0
Construction	$3.0
Total	$3.3

Priority 4

Project ID: L-040

Facility:	South University Parks Dr
Extent:	IH-35 to US Business 77 (LaSalle Ave)
Current:	6 lane arterial with center median
Scope of Work:	1) Conduct Road Diet to create 4 lane arterial with bike lanes 2) Construct continuous sidewalks on both sides
Purpose and Need:	1) Current and future traffic volumes do not require 6 lanes of capacity and reduced number of lanes should reduce traffic speeds to a more appropriate level. 2) Provide safe bicycle and pedestrian facilities along corridor.

Project Scoring:		
	Good Repair:	25
	Safety:	28
	Efficiency:	25
	Livability:	63
	Freight / Econ Dev:	50
	Equity:	40
	Total Score:	231
Fiscal Constraint:	Local:	$3.3

Work Phase	Cost
Engineering	$0.3
Right of Way	$0.0
Construction	$3.0
Total	$3.3

Priority 5

Project ID: B-007

Facility:	MKT Trail
Extent:	US 84 (East Waco Dr) to FM 933 (Gholson Rd)
Current:	No existing facility
Scope of Work:	1) Construct bicycle / pedestrian path 2) Reconstruct traffic signal at US 84 & Dallas St
Purpose and Need:	1) Provide safe bicycle and pedestrian connection between Environmental Justice zone and Downtown Waco. 2) Upgrade substandard traffic signal at US 84 & Dallas St to accommodate pedestrian traffic.

Project Scoring:		
	Good Repair:	5
	Safety:	0
	Efficiency:	0
	Livability:	46
	Freight / Econ Dev:	0
	Equity:	40
	Total Score:	91
Fiscal Constraint:	Bike / Ped:	$3.6
	Tax Increment Zone:	$0.9

Work Phase	Cost
Engineering	$0.5
Right of Way	$0.0*
Construction	$4.0
Total	$4.5

*Phase complete or underway

Priority 6

Project ID: B-068A

Facility:	Dallas St
Extent:	Elm Ave to US 84 (East Waco Dr)
Current:	2 lane collector
Scope of Work:	1) Resurface roadway and restripe to include bike lanes 2) Construct continuous sidewalks on one side
Purpose and Need:	1) Provide safe bicycle and pedestrian connection between Environmental Justice zone and Downtown Waco. 2) Connect MKT Trail (Project B-007) to Elm Ave corridor.

Project Scoring:		
	Good Repair:	35
	Safety:	13
	Efficiency:	0
	Livability:	33
	Freight / Econ Dev:	40
	Equity:	40
	Total Score:	161
Fiscal Constraint:	Bike / Ped:	$0.2
	Tax Increment Zone:	$0.05

Work Phase	Cost
Engineering	$0.05
Right of Way	$0.0
Construction	$0.2
Total	$0.25

long term priorities (2031 to 2045)

Priority 7
Project ID: P-027A

Facility: South 26th St

Extent: Franklin Ave to Bagby Ave

Current: 2 lane collector

Scope of Work:
1) Construct continuous sidewalks on one side
2) Upgrade traffic signal at 26th / Dutton to better accommodate pedestrians
3) Upgrade RR crossing warnings / protections to quiet zone standards

Purpose and Need:
1) Provide safe pedestrian facility along corridor.
2) Address poor pedestrian crossing design at 26th / Dutton.
3) Provide safer pedestrian crossing at UP RR

Project Scoring:

Good Repair:	5
Safety:	13
Efficiency:	0
Livability:	41
Freight / Econ Dev:	23
Equity:	60
Total Score:	141

Fiscal Constraint:

Bike / Ped:	$0.7
Local:	$0.5

Work Phase	Cost
Engineering	$0.2
Right of Way	$0.0
Construction	$1.0
Total	$1.2

Priority 8
Project ID: L-024

Facility: Sanger Ave

Extent: Harvey Dr to Loop 396 (North Valley Mills Dr)

Current: 4 lane arterial with no center turn lane

Scope of Work:
1) Conduct Road Diet to create 2 lane arterial with center turn lane and bike lanes
2) Construct continuous sidewalks on both sides

Purpose and Need:
1) Current and future traffic volumes do not require 4 lanes of capacity and reduced number of lanes should reduce traffic speeds to a more appropriate level.
2) Provide safe bicycle and pedestrian facilities along corridor.
3) Center turn lane to provide safe storage for left turning traffic and should reduce rear-end collisions along corridor.

Project Scoring:

Good Repair:	30
Safety:	50
Efficiency:	0
Livability:	58
Freight / Econ Dev:	35
Equity:	60
Total Score:	233

Fiscal Constraint:

Safety:	$0.6
Local:	$1.9

Work Phase	Cost
Engineering	$0.2
Right of Way	$0.0
Construction	$2.3
Total	$2.5

Priority 9
Project ID: L-037

Facility: 4th & 5th Streets

Extent: Herring Ave to IH-35

Current: 4th Street: 3 lane one-way arterial with partial bike lane and parallel parking

5th Street: 2 lane one-way arterial with partial bike lane and parallel parking

Scope of Work: Convert to 2 lane arterial with 2-way operations, parallel parking and bicycle lanes

Purpose and Need:
1) Reduce speeds and improve corridor for bicycle and pedestrian modes
2) Provide two-way access for properties along corridor

Project Scoring:

Good Repair:	25
Safety:	0
Efficiency:	25
Livability:	37
Freight / Econ Dev:	85
Equity:	60
Total Score:	232

Fiscal Constraint:

Local:	$3.2

Work Phase	Cost
Engineering	$0.3
Right of Way	$0.0
Construction	$2.9
Total	$3.2

Priority 10
Project ID: B-073A

Facility:	Forrest St
Extent:	Elm Ave to Brooklyn St
Current:	2 lane collector
Scope of Work:	1) Resurface roadway and restripe for bike lanes 2) Construct sidewalk on one side 3) Upgrade RR crossing warnings / protections to quiet zone standards
Purpose and Need:	1) Provide safe bicycle and pedestrian facility along corridor. 2) Provide safer bicycle / pedestrian / vehicular crossing at UP RR

Project Scoring:		
	Good Repair:	23
	Safety:	13
	Efficiency:	0
	Livability:	33
	Freight / Econ Dev:	85
	Equity:	40
	Total Score:	193
Fiscal Constraint:	Bike / Ped:	$0.4
	Local:	$0.1

Work Phase	Cost
Engineering	$0.1
Right of Way	$0.0
Construction	$0.4
Total	$0.5

table 7.8 – total costs for strategy 4

Mode	Short-Term Cost	Long-Term Cost	Total Cost
Highway	$24.1	$4.7	$28.8
Public Transportation	$1.0	$0.0	$1.0
Bicycle / Pedestrian	$10.45	$2.7	$13.15
Passenger Rail	$0.0	$0.0	$0.0
Total All Modes	$35.55	$7.4	$42.95

strategy 5: address demand for future mobility

guiding principle 5: support regional freight movement and economic development efforts

As identified within the demographic analysis of Section 3, since 2000, suburban development has continued at a significantly greater pace than the redevelopment of the urban core. In addition, this trend is expected to continue during the MTP planning horizon albeit at a lesser rate than previously observed. The result has been and will continue to be significant mobility demand in corridors that were never designed to accommodate such demand. In addition, Waco's position midway between the Dallas / Fort Worth metroplex and the Austin / San Antonio regions continue to place significant demands on IH-35 and other through transportation facilities within the region.

Strategy 5 scores projects between 100 and -100 points based on how well or how poorly they answer the following questions:

18. Does the project address current or future unacceptable traffic conditions?
19. Does the project address deficiencies along the Texas State Freight Network?
20. Does the project address railroad grade crossing concerns?
    a. Auto / Train grade crossings
    b. Bicycle / Pedestrian / Train grade crossings

Each project is also scored under each of the other 5 strategies. Projects that not only address freight movement, traffic flow and economic development, but score well under other strategies are generally prioritized higher than those that only address freight flow or mobility.

Short term and long term priority projects described below are shown on Map 7.5. Total costs for Strategy 5 are shown in Table 7.9.

short term priorities (2020 to 2030)

Priority 1

Project ID: S-034A (aka Mall to Mall project)

Facility: SH 6 / West Loop 340

Extent: US 84 (West Waco Dr) to IH-35

Current: 4 lane expressway with discontinuous frontage roads

Scope of Work:
1) Construct continuous frontage roads and frontage road bridges over railroad crossings
2) Reconstruct main lane bridges over both railroad crossings to eliminate bridge piers within railroad right of way
3) Realign on and off ramps from diamond to 'X' configuration
4) Construct u-turn lanes for westbound US 84 at SH 6 / Loop 340 and southbound SH 6 / Loop 340 at FM 3476 (Bagby Ave)

Purpose and Need:
1) Shifting storage of traffic backing up from intersections from main lanes to frontage roads which have slower speeds and should reduce high number of rear-end crashes.
2) Additional capacity from continuous frontage roads should address short term unacceptable traffic conditions.

Project Scoring:

Good Repair:	50
Safety:	48
Efficiency:	-25
Livability:	15
Freight / Econ Dev:	100
Equity:	0
Total Score:	188

Fiscal Constraint: Mobility: $40.0

Work Phase	Cost
Engineering	$2.5*
Right of Way	$1.4*
Construction	$40.0
Total	$43.9

*Phase complete or underway

Priority 2

Project ID: S-001A

Facility: East Loop 340

Extent: SH 6 / Loop 484 (Marlin Hwy) to US 84 (Bellmead Dr)

Current: 2 lane principal arterial with shoulders

Scope of Work: Widen to 4 lanes divided

Purpose and Need:
1) Address unacceptable traffic conditions forecasted for 2045.
2) Provide additional capacity for designated IH-35 alternative route and primary Fort Worth to Bryan & Houston route.

Project Scoring:

Good Repair:	-5
Safety:	45
Efficiency:	-25
Livability:	-19
Freight / Econ Dev:	85
Equity:	20
Total Score:	101

Fiscal Constraint: Mobility: $23.5

Work Phase	Cost
Engineering	$2.5*
Right of Way	$0.0
Construction	$23.5
Total	$26.0

*Phase complete or underway

Priority 3

Project ID: S-039A-2

Facility: Spur 298 (Franklin Ave)

Extent: Lake Air Dr to New Rd

Current: 4 lane hybrid arterial with frontage roads

Scope of Work:
1) Remove frontage roads
2) Move main lanes to frontage roads and add 1 lane in each direction
3) Reconstruct New Rd interchange to operate as a Michigan left design
4) Construct u-turn lane at intersection with Commerce St

Purpose and Need: Address unacceptable traffic conditions forecasted for 2045 for both Spur 298 and New Rd.

Project Scoring:

Good Repair:	10
Safety:	0
Efficiency:	25
Livability:	56
Freight / Econ Dev:	65
Equity:	40
Total Score:	196

Fiscal Constraint: Mobility: $13.0
Safety: $1.0

Work Phase	Cost
Engineering	$1.5*
Right of Way	$0.0
Construction	$14.0
Total	$15.5

*Phase complete or underway

Priority 4

Project ID: S-031A

Facility: SH 6

Extent: Spur 412 (McLaughlin Rd) to FM 185

Current: 2 lane principal arterial with center turn lane

Scope of Work: Widen to 4 lanes with center turn lane and shoulders

Purpose and Need:
1) Address system gap and extend 4 lane section to logical termini.
2) Better address unacceptable traffic conditions forecasted for 2045

Project Scoring:

Good Repair:	10
Safety:	0*
Efficiency:	-25
Livability:	-11
Freight / Econ Dev:	50
Equity:	-20
Total Score:	4

*Note: This section of SH 6 has had a history of unacceptable numbers of total and severe crashes. Crashes during the review period of 2016 to 2018, however, were significantly less than the historical trend. Since no significant changes in traffic volume, speed or roadway design occurred during the review period, MPO staff concluded that this reduction was due to random statistical variability. MPO staff concluded that the proposed scope of work would be effective at reducing the crashes observed over a longer historical period despite not being reflected in the evaluation score.

Fiscal Constraint: Mobility: $8.0

Work Phase	Cost
Engineering	$1.0*
Right of Way	$0.0
Construction	$8.0
Total	$9.0

*Phase complete or underway

Priority 5

Project ID: S-019A

Facility: FM 434 (South University Parks Dr)

Extent: US Business 77 (LaSalle Ave) to Garden Dr

Current: 2 lane rural FM road with shoulders

Scope of Work:
1) Widen to 4 lanes with center median
2) Construct curb and gutter
3) Construct Bicycle and Pedestrian Path

Purpose and Need:
1) Address current unacceptable traffic conditions.
2) Address high number of total and severe crashes
3) Provide safe pedestrian facilities along corridor

Project Scoring:

Good Repair:	30
Safety:	58
Efficiency:	-25
Livability:	46
Freight / Econ Dev:	95
Equity:	40
Total Score:	244

Fiscal Constraint: Mobility: $10.0
Safety: $2.0

Work Phase	Cost
Engineering	$1.0
Right of Way	$0.0
Construction	$11.0
Total	$12.0

Priority 6

Project ID: S-028

Facility: SH 317 (South Lone Star Pkwy)

Extent: Bluebonnet Pkwy to FM 2671 (Mother Neff Pkwy)

Current: 2 lane rural arterial with shoulders

Scope of Work:
1) Widen to 4 lanes with center median
2) Construct overpass for proposed BNSF RR Spur

Purpose and Need:
1) Provide capacity to accommodate additional traffic into McGregor Industrial Park.
2) Provide RR grade separation to permit rail access into McGregor Industrial Park.

Project Scoring:

Good Repair:	38
Safety:	10
Efficiency:	-25
Livability:	-13
Freight / Econ Dev:	85
Equity:	20
Total Score:	115

Fiscal Constraint: Mobility: $23.0

Work Phase	Cost
Engineering	$2.5
Right of Way	$1.6
Construction	$18.9
Total	$23.0

Priority 7

Project ID: S-022J

Facility: Interstate Highway 35

Extent: Irving Lee St to 0.25 miles south of South New Rd

Current: Diamond configuration for on & off ramps

Scope of Work:
1) Realign on & off ramps for southbound frontage road to 'X' configuration.
2) Construct southbound auxiliary lane between Irving Lee on-ramp and Loop 340 off-ramp.
3) Reconstruct both northbound and southbound main lane overpasses to address vertical clearance requirements for New Rd.

Purpose and Need:
1) Address southbound congestion resulting from high traffic volumes entering and exiting between Irving Lee St and Loop 340.
2) Address substandard vertical clearance for New Rd under main lane overpasses.

Project Scoring:

Good Repair:	83
Safety:	8
Efficiency:	-25
Livability:	14
Freight / Econ Dev:	80
Equity:	60
Total Score:	219

Fiscal Constraint: Mobility: $35.0

Work Phase	Cost
Engineering	$3.0*
Right of Way	$0.0
Construction	$35.0
Total	$38.0

*Phase complete or underway

Priority 8

Project ID: S-022H

Facility: Interstate Highway 35

Extent: Intersection at Loop 396 (South Valley Mills Dr)

Current: Offset frontage road intersections with mix of traffic controls

Scope of Work:
1) Reconstruct interchange potentially as diverging diamond design
2) Construct northbound frontage road from Irving Lee St to Valley Mills Dr.

Purpose and Need:
1) More efficiently handle conflicting travel directions through interchange than with currently design.
2) Complete last phase of construction to finish continuous frontage roads through McLennan County.

Project Scoring:

Good Repair:	23
Safety:	-3
Efficiency:	-25
Livability:	26
Freight / Econ Dev:	90
Equity:	60
Total Score:	171

Fiscal Constraint: Mobility: $35.0

Work Phase	Cost
Engineering	$3.0*
Right of Way	$0.0
Construction	$35.0
Total	$38.0

*Phase complete or underway

long term priorities (2031 to 2045)

Priority 9

Project ID: S-022G

Facility: Interstate Highway 35

Extent: South 12th Street to SH 6 / West Loop 340

Current: 6 lane expressway with discontinuous frontage roads

Scope of Work:
1) Reconstruct all bridges and pavements not addressed in projects S-022H or S-022J (Priorities 2 & 3 in Short Term Priorities)
2) Widen main lanes to 8

Purpose and Need:
1) Address unacceptable traffic conditions forecasted for 2045.
2) Address high number of total and severe crashes
3) Reconstruct facility to current design standards for Interstates and State Freight Corridors.

Project Scoring:

Good Repair:	48
Safety:	48
Efficiency:	-25
Livability:	11
Freight / Econ Dev:	100
Equity:	60
Total Score:	241

Fiscal Constraint:

Mobility:	$185.7
Maintenance:	$12.5
Safety:	$1.8

Work Phase	Cost
Engineering	$20.0*
Right of Way	$30.0*
Construction	$200.0
Total	$250.0

*Phase complete or underway

Priority 10

Project ID: S-038A

Facility: Speegleville Rd

Extent: US 84 to Maple Shade

Current: 2 lane rural county road without shoulders

Scope of Work:
1) Widen to 4 lanes with center median
2) Construct curb and gutter
3) Replace existing 2 lane bridge over Middle Bosque River with 4 lane bridge
4) Construct bicycle and pedestrian path

Purpose and Need:
1) Address current unacceptable traffic conditions.
2) Address current deficient pavements and functionally obsolete bridge.
3) Provide safe bicycle and pedestrian facilities along corridor.

Project Scoring:

Good Repair:	63
Safety:	0
Efficiency:	0
Livability:	6
Freight / Econ Dev:	75
Equity:	0
Total Score:	144

Fiscal Constraint: Local: $17.5

Work Phase	Cost
Engineering	$2.0
Right of Way	$0.6
Construction	$14.9
Total	$17.5

Priority 11

Project ID: S-052-1

Facility: Lake Shore Dr (FM 3051)

Extent: Intersection at Steinbeck Bend Dr (FM 3051) and M L King Jr Dr

Current: At grade signalized intersection

Scope of Work: Construct grade separated overpass for Lake Shore Dr

Purpose and Need:
1) Address unacceptable traffic conditions forecasted for 2045.
2) Address high number of total and severe crashes.

Project Scoring:

Good Repair:	0
Safety:	23
Efficiency:	-25
Livability:	26
Freight / Econ Dev:	100
Equity:	0
Total Score:	124

Fiscal Constraint: Mobility: $10.0
Safety: $1.0

Work Phase	Cost
Engineering	$1.0
Right of Way	$0.0
Construction	$10.0
Total	$11.0

Priority 12

Project ID: L-027-2

Facility: Panther Way

Extent: FM 1695 (Hewitt Dr) to Panther Run

Current: 2 lane rural county road without shoulders

Scope of Work:
1) Widen to add center turn lane and bike lanes
2) Construct continuous sidewalks on both sides
3) Redesign intersection with FM 1695 to better accommodate bicycle and pedestrian crossings

Purpose and Need:
1) Center turn lane to provide safe storage for left turning traffic and should reduce rear-end collisions along corridor.
2) Provide safe bicycle and pedestrian facilities along corridor adjacent to Midway ISD Facilities.

Project Scoring:

Good Repair:	0
Safety:	23
Efficiency:	0
Livability:	29
Freight / Econ Dev:	85
Equity:	-20
Total Score:	117

Fiscal Constraint: Mobility: $1.0
Local: $5.2

Work Phase	Cost
Engineering	$0.5
Right of Way	$0.8
Construction	$4.9
Total	$6.2

Priority 13
Project ID: S-036B

Facility: East Loop 340

Extent: Intersection at SH 6 / Loop 484 (Marlin Hwy)

Current: At grade signalized intersection for Loop 340 at SH 6 / Loop 484 frontage roads

Scope of Work: Construct overpass for Loop 340 main lanes

Purpose and Need:
1) Address unacceptable traffic conditions forecasted for 2045.
2) Provide additional capacity for designated IH-35 alternative route.

Project Scoring:

Good Repair:	0
Safety:	28
Efficiency:	-25
Livability:	-26
Freight / Econ Dev:	100
Equity:	20
Total Score:	97

Fiscal Constraint: Mobility: $19.3

Work Phase	Cost
Engineering	$2.3
Right of Way	$0.0
Construction	$17.0
Total	$19.3

Priority 14
Project ID: S-012

Facility: FM 2490 (Wortham Bend Rd)

Extent: FM 1637 (China Spring Rd) to McGary Rd

Current: 2 lane rural FM road

Scope of Work: Widen to 4 lanes with center median

Purpose and Need: Address unacceptable traffic conditions forecasted for 2045.

Project Scoring:

Good Repair:	18
Safety:	0
Efficiency:	-25
Livability:	-3
Freight / Econ Dev:	75
Equity:	0
Total Score:	65

Fiscal Constraint: Mobility: $8.8

Work Phase	Cost
Engineering	$1.0
Right of Way	$1.0
Construction	$6.8
Total	$8.8

Priority 15
Project ID: L-029

Facility: McGregor Southeast Bypass

Extent: SH 317 (South Lone Star Pkwy) to US 84

Current: No Existing Facility

Scope of Work:
1) Construct 2 lane FM road
2) Construct overpass across BNSF RR
3) Install traffic signals at SH 317 and US 84

Purpose and Need:
1) Provide alternative connection for freight destined for McGregor Industrial Park from US 84 instead of through Downtown McGregor.
2) Connection permits oversize loads to bypass RR overpass with substandard vertical clearance on US 84.

Project Scoring:

Good Repair:	0
Safety:	0
Efficiency:	-25
Livability:	-25
Freight / Econ Dev:	73
Equity:	40
Total Score:	63

Fiscal Constraint: Mobility: $35.5

Work Phase	Cost
Engineering	$4.0
Right of Way	$1.5
Construction	$30.0
Total	$35.5

table 7.9 – total costs for strategy 5

Mode	Short-Term Cost	Long-Term Cost	Total Cost
Highways	$200.3	$344.8	$545.1
Bicycle / Pedestrian	$2.6	$3.5	$6.1
Total All Modes	$202.9	$348.3	$551.2

strategy 6: provide equal access and benefits

guiding principle 6: improve access to economic opportunities and essential services

Poverty has been identified as a pervasive issue for the Waco Region by numerous plans dating back to the 1950s. A consistent theme is that the areas with most extreme poverty and the lowest incomes are physically separated from the region's most significant centers of employment. The physical separation in miles is further exacerbated by barriers such as the Brazos River, the Loop 340 and IH-35 expressways as well as a transit system with infrequent service that has up to 2 hour one-way trip times.

The focus of this strategy is to overcome the physical barriers to employment or other opportunities out of poverty and thus provide those in poverty reasonable access to those opportunities. The primary recommendations of this strategy focus on significantly improving travel times to employment and essential services for those whom owning an automobile is a financial burden or cannot physically operate an automobile. Refer to Table 7.15 for a summary of how the MTP project recommendations (overall) address the transportation needs of EJ populations in McLennan County.

Strategy 6 scores projects between 100 and -100 points based on how well or how poorly they answer the following questions:

21. Does the project provide a direct benefit to a zone identified as an Environmental Justice protected zone?
22. Does the project provide better connectivity between high employment zones and an Environmental Justice protected zone?

Each project is also scored under each of the other 5 strategies. Projects that not only address access to economic opportunities and essential services, but score well under other strategies are generally prioritized higher than those that only address access.

Short term and long term priority projects described below are shown on Map 7.6. Total costs for Strategy 6 are shown in Table 7.12.

Fixed route operations categorical project
Fixed route services are projected to change significantly after 2030. Until that time, fixed-route services are expected to be similar to the current system. Future operations (including cost) for the fixed-route system after 2030 are incorporated into projects T-016 and T-017, which are Priorities 1 & 2 respectively. Project T-3 identifies the cost for continuing the existing fixed-route services through the year 2030, as shown in Table 7.10.

table 7.10 – public transportation urban fixed route short term operations categorical project

Project ID	FTA 5307	State	Local / Farebox	Total Cost
T-3	$14.1	$9.0	$5.1	$28.2

short term priorities (2020 to 2030)

Priority 1
Project ID: T-016

Service: Bus Rapid Transit

Extent: Texas Central Industrial Park to Bellmead

Scope of Work:
1) Operate express transit service with limited stops following locally preferred alternative alignment (Map 7.6)
2) Construct up to 13 bus stop facilities consistent with Thoroughfare Plan design guidelines for transit transfer points
3) Construct pedestrian sidewalks and crosswalks at appropriate locations to connect stops with significant destinations
4) Reconstruct roadways with poor pavement conditions
5) Retrofit traffic signals in corridor to accommodate transit priority and pedestrian crossings

Operations:
1) Peak period headways of 15 minutes Off-Peak headways of 20 minutes Weekend headways of 30 minutes
2) Service hours from 6 am to 10 pm
3) Estimated service initiation in year 2025

Purpose and Need:
1) Address need for more frequent transit service
2) Address need for more rapid transit access to and from limits of urbanized area
3) Address need for longer operation times

Project Scoring:

Good Repair:	100
Safety:	0
Efficiency:	50
Livability:	100
Freight / Econ Dev:	25
Equity:	100
Total Score:	375

Fiscal Constraint:

FTA Small Starts:	$20.0
FTA 5307:	$5.0
Local Capital:	$12.0
Local Operations:	$40.0

Phase of Work or Service	Short-Term Cost	Long-Term Cost	Total Cost
Capital – Bus Stops / Corridor Improvements	$20.0	$0.0	$20.0
Capital – Rolling Stock	$5.0	$7.0	$12.0
Capital – Pedestrian Infrastructure	$5.0	$0.0	$5.0
Operations	$10.0	$30.0	$40.0
Total	$40.0	$37.0	$77.0

Priority 2
Project ID: T-017

Service: Realignment of Waco Transit Fixed Routes

Extent: Waco Urbanized Area

Scope of Work:
1) Realign routes to 20 or 30 minute loops and connect with Bus Rapid Transit route at major stops. Estimated 12 routes.
2) Convert system from flag stops to dedicated bus stops. Bus stops to be constructed consistent with Thoroughfare Plan design guidelines based on estimated daily boardings.
3) Construct pedestrian sidewalks and crosswalks at appropriate locations to connect stops with significant destinations

Operations:
1) 20 to 30 minute service frequency
2) Service hours from 6 am to 10 pm
3) Begin transition on 2 high volume routes in 2025. Next 5 high volume routes by 2030. Remaining routes by 2035.

Purpose and Need:
1) Address need for more frequent transit service
2) Address need for more rapid transit access to and from limits of urbanized area
3) Address need for longer operation times

Project Scoring:

Good Repair:	100
Safety:	25
Efficiency:	25
Livability:	80
Freight / Econ Dev:	0
Equity:	100
Total Score:	330

Fiscal Constraint: Project to pursue capital funds from TIGER or similar grant program with anticipated 30% local match requirement. Operational costs anticipated from regional allocation of FTA 5307 and additional local funds. Note: This project includes all operational costs for the urbanized fixed route system beyond 2030 outside of the Bus Rapid Transit service.

Note: Project will require additional study to identify details such as route alignment, stop locations, transfer points and costs.

Phase of Work or Service	Short-Term Cost	Long-Term Cost	Total Cost
Route / Feasibility Studies	$1.0	$0.0	$1.0
Capital – Bus Stops	$5.0	$25.0	$30.0
Capital – Rolling Stock	$1.0	$7.0	$8.0
Capital – Pedestrian Infrastructure	$3.0	$7.0	$10.0
Operations	$3.5	$54.3	$57.8
Total	$13.5	$93.3	$106.8

long term priorities (2031 to 2045)

Priority 3
Project ID: T-018

Service: Commuter Bus Service

Extent: Downtown Waco to McGregor Industrial Park

Scope of Work:
1) Operate commuter bus service during peak hours between Downtown Intermodal Center to McGregor Industrial Park within stops at bus rapid transit stations
2) Construct 2 stops in McGregor consistent with Thoroughfare Plan design guidelines based on estimated daily boardings
3) Construct pedestrian sidewalks and crosswalks at appropriate locations to connect stops with significant destinations

Operations:
1) 6 daily round trips Monday through Friday
2) 3 round trips each during AM and PM peak

Purpose and Need:
1) Provide replacement intercity connection to McGregor in the event Amtrak service discontinued
2) Provide access to employment opportunities in McGregor Industrial Park

Project Scoring:

Good Repair:	30
Safety:	0
Efficiency:	10
Livability:	36
Freight / Econ Dev:	0
Equity:	40
Total Score:	116

Fiscal Constraint:

FTA 5307/5311:	$2.5
Local:	$1.5

Phase of Work or Service	Short-Term Cost	Long-Term Cost	Total Cost
Capital – Bus Stops	$0.0	$0.5	$0.5
Capital – Rolling Stock	$0.0	$1.0	$1.0
Capital – Pedestrian Infrastructure	$0.0	$0.5	$0.5
Operations	$0.0	$2.5	$2.5
Total	$0.0	$4.5	$4.5

In addition to these projects, there are three transit services provided to address mobility needs for those unable to use traditional fixed-route transit services or reside outside of the Waco Urbanized Area. The ADA service is a door-to-door demand response service operated within the Waco Urbanized Area for those unable to use the urban fixed-route service. Persons utilizing this service must qualify based upon their disability status. Waco Transit, the urban transit provider, operates this service.

rural public transportation and elderly / disabled services

For portions of the metropolitan area beyond the Waco Urbanized Area, public transportation is provided under the rural transportation program (FTA section 5311). In addition, transportation for elderly and disabled is provided countywide through the FTA section 5310 program. These services are curb-to-curb, and similar to the ADA service, are provided based upon

demand response. Both programs are operated by the McLennan County Rural Transit District which contracts with Waco Transit System Inc. to manage and provide the services. Within the Waco Urbanized Area, Waco Transit System Inc. operates the complimentary ADA Paratransit Service for those persons who have a disability that precludes them from being able to use the urban fixed route system. Table 7.11 provides the estimated cost for rural public transportation and elderly / disabled transit service.

table 7.11 – ADA paratransit, rural transportation and elderly / disabled services

Transit Service	Project ID	Short-Term Cost	Long-Term Cost	Total Cost
ADA Paratransit	T-2	$4.2	$10.4	$14.6
Rural Transportation	T-6	$1.4	$2.1	$3.5
Elderly & Disabled Transportation	T-5	$1.0	$1.5	$2.5
Total		$6.6	$14.0	$20.6

table 7.12 – total costs for strategy 6

Mode	Short-Term Cost	Long-Term Cost	Total Cost
Highways	$22.0	$2.0	$24.0
Public Transportation	$58.3	$139.3	$197.6
Pedestrian	$8.0	$7.5	$15.5
Total All Modes	$88.3	$148.8	$237.1

summary of recommendations

The MPO targeted these strategies and projects specifically to address the transportation needs of our community as well as the livability needs which transportation services and infrastructure can significantly impact, such as poverty and community health. Furthermore, the MPO made great effort to accommodate in these strategies both the federal goals of the FAST Act and the expressed interest and desires from citizens in public meetings. While our fiscal constraints represent our greatest limitations to implementing these strategies, the MPO believes the plan outlined in this document presents a reasonable strategy to make the most significant improvements to our transportation network despite those constraints. Tables 7.13 and 7.14 summarize the MTP recommendations.

table 7.13 – total costs of plan recommendations by strategy

Strategy	Short-Term Cost	Long-Term Cost	Total Cost	Percent of Plan
1 – State of Good Repair	$467.1	$771.9	$1,239.0	55.6%
2 - Safety	$38.4	$20.7	$59.1	2.6%
3 – Efficiency	$33.5	$64.1	$97.6	4.4%
4 - Livability	$35.55	$7.4	$42.95	1.9%
5 - Mobility	$202.9	$348.3	$551.2	24.8%
6 – Equity	$88.3	$148.8	$237.1	10.6%
Total Plan	$865.75	$1,361.2	$2,226.95	100.0%

table 7.14 – total costs of plan recommendations by transportation mode

Mode	Short-Term Cost	Long-Term Cost	Total Cost	Percent of Plan
Highway	$761.5	$1,149.6	$1,911.1	85.8%
Public Transportation	$78.2	$181.9	$260.1	11.7%
Bicycle / Pedestrian	$26.05	$29.7	$55.75	2.5%
Passenger Rail	$0.0	$0.0	$0.0	0.0%
Total Plan	$865.75	$1,361.2	$2,226.95	100.0%

environmental justice analysis for mix of projects

Section 3.3, Title VI Analysis, identifies a primary goal of ensuring that the transportation needs of all people are met and that no one population group must endure a disproportional share of the burdens in meeting those needs. The MPO identified three population groups which have previously been underrepresented: Black population, Hispanic population and Persons living in poverty. To address this goal, MPO staff evaluated each recommended priority in regards to how well it provides a benefit to one of our environmental justice (EJ) communities. Projects receiving a score of 40 points or more within the MTP project evaluation criteria for Strategy 6 were considered to provide at least some benefit to one or more of these communities in terms of better transportation access or providing more modal options beyond the automobile. Projects scoring less than 40 points have very limited or no direct benefit to any EJ communities within the Waco Region. For more information on the MPO project evaluation criteria, refer to Appendix B.

Table 7.15 summarizes how the mix of recommended projects addresses the transportation needs of EJ populations in McLennan County. Note that this analysis includes stand-alone priorities only. This is because it's not possible to quantify EJ-specific benefit for categorical projects and transit-operation projects, at least at the long-range planning level of analysis provided in this MTP. This is especially true for roadway maintenance and safety categorical projects, because specific scopes of work will not be identified until some point in the future.

table 7.15 – MTP investment providing benefit to environmental justice communities

Strategy	Short-Term Cost	Long-Term Cost	Total Cost	Percent of Plan*
1 – State of Good Repair	$10.2	$28.5	$38.7	24.5%
2 - Safety	$1.2	$5.7	$6.9	20.2%
3 – Efficiency	$33.5	$64.1	$97.6	100.0%
4 - Livability	$35.55	$7.4	$42.95	89.7%
5 - Mobility	$103.5	$285.5	$389.0	70.5%
6 – Equity	$39.0	$46.0	$85.0	100.0%
Total Plan	$222.95	$437.2	$660.15	67.8%

*Only includes stand-alone priorities and does not include costs for categorical projects. The grand total for stand-alone MTP projects is $973.65 million.