

Appendix A

PERFORMANCE MEASURES

Passenger Trips per Vehicle-Hour:

Passenger trips per vehicle-hour measures the productivity of a demand response (DR) system. Many consider productivity to be the most important single measure of DR performance as it assesses the system's effectiveness. As a performance measure, productivity captures the ability of the DR system to schedule and serve passenger trips with similar origins, destinations, and time parameters, using the least number of in-service vehicles and hours. This is the essence of shared-ride, public DR service.

Formula for Passenger Trips per Vehicle-Hour:
Productivity = total passenger trips / total vehicle-hours

Operating Costs:

Operating costs are a key efficiency measure, assessing the financial resources needed to produce a unit of service, regardless of whether that unit of service is a vehicle hour (1 hour of a vehicle being in service), a vehicle mile (1 mile the vehicle is in service), or a passenger trip. Determining which measure to use should be done at the discretion of the operating agency, considering productivity and scale of operation of the agency. The equations below illustrate different methods to calculate operating costs.

Formula for Operating Cost per Vehicle Hour:
Operating cost per vehicle-hour = total operating cost / total vehicle-hours

Formula for Operating Cost per Vehicle Mile:
Operating cost per vehicle-mile = total operating cost / total vehicle-hours

Formula for Operating Cost per Passenger Trip:
Operating cost per passenger trip = total operating cost / total passenger trips

Safety Incidents per 100,000 Vehicle-Miles:

Safety should be the primary concern for all transit systems, including DR. Rural DR systems should track and monitor their safety record and adjust as needed to ensure safe operations. As a performance measure, the safety incident rate is one that incorporates an assessment of both service operations as well as passenger service quality. The safety of the DR system may not be an attribute that passengers consider each day that they ride the DR system, but safety is a dimension of customer service quality.

Formula for Calculating Safety Incidents per 100,000 vehicle-miles:
Safety incidents per 100,000 vehicle-miles = [(NTD reportable safety incidents) / (total vehicle-miles)] x 100,000

On-Time Performance:

On-time performance is an important measure of service quality from a DR rider's perspective. On-time performance measures the reliability of the system: does the vehicle arrive for the pick-up when it was promised? While this measure may get more attention at urban DR systems that operate ADA paratransit, it is important for all DR systems. Rural systems should routinely monitor and assess their on-time performance. On-time performance may also be important at the drop-off end. In fact, timeliness at the destination end may be more important for riders with time-sensitive trips such as to work or medical appointments. DR systems should consider assessing on-time performance at the drop-off end for time-sensitive trips, those with a pre-determined "appointment" time. This would

Appendix A Continued

be a separate assessment since only those trips with an appointment time would be included for this assessment. However, even if a DR system schedules a riders' trip to ensure timeliness at the destination, the system needs to give the rider a pick-up time (or window time) so that the rider can be ready when the vehicle arrives.

Formula for Calculating On-time Performance: *On-time performance = (total on-time trips, including no-shows) / (total completed trips + no-shows + missed trips)*

Complaint Rate:

In addition to monitoring and responding to complaints, some DR systems measure and report their rate of complaints by comparing the number of complaints received to service provided, such as total service complaints per 1,000 passenger trips. The denominator may be total passenger trips completed or it may be total trips scheduled. Rather than passenger trips, some DR systems compare complaints to revenue-hours of service provided. The complaint rate can be monitored over time as an indicator of customer satisfaction. It is important that DR systems maintain a consistently defined measure so that trends and comparisons from month-to-month or year-to-year are meaningful over time. If the calculation method is modified, it should be clearly noted on any trend line comparison to ensure proper assessment. Some systems have established a standard related to complaints. For example, the DR system should have no more than X complaints per 1,000 passenger trips. Such a standard may be included in a contract for a contracted DR operator, with associated incentives and liquidated damages considered.

Formula for Calculating Complaints per 1,000 Passenger Trips: *Complaints per 1,000 passenger*

trips = (total valid complaints / total passenger trips) x 1,000

OR

Formula for Calculating Complaints per 1,000 Revenue Hours: *Complaints per 1,000 revenue-hours = (total valid complaints / total revenue-hours) x 1,000*

Average Passenger Trip Length:

The size of the DR system service area, distribution of riders' origins and destinations, and degree of shared riding will affect the average passenger trip length. This can be a useful measure for a DR system to monitor as it has an important effect on system productivity, with longer trip lengths having a negative effect on productivity. The average trip length can be measured on a sampling basis over time, and any changes need to be assessed to monitor the impact of trip length on service operations and especially on productivity.

Formula for Calculating Average Passenger Trip Length: *Average passenger trip length = total passenger miles / total number of passenger trips*

Average Travel Time:

Average travel time is computed as the sum of all passengers' travel times divided by the total number of passenger trips.

Formula for Calculating Average Travel Time: *Average travel time = total passengers' travel time / total number of passenger trips*

Appendix A Continued

Vehicles per 10,000 Persons:

Indicates the amount of resources available relative to population being served; calculated separately for general public transit (5307 and 5311) and human services transportation (5310) providers; an increase in this measure over time indicates that more transportation resources are being made available to serve McLennan County.

% of Key Destinations Served:

Percentage of employment centers medical facilities, or schools/universities within specified distances of transportation providers; a rough estimation of area and destinations served; an increase over time indicates that providers/services are distributed more effectively

% of Providers Coordinating:

Percentage of public transit and human services transportation providers who reported that they coordinate with other providers; results are collected from the transportation provider survey; an increase indicates that more providers are participating in coordination efforts.

Appendix B

PUBLIC COMMENT ON DRAFT STUDY

The 45-day public comment period for the adoption of this draft study began April 23 and ended June 7.

The Waco Metropolitan Planning Organization (MPO) maintains and enacts a Public Participation Program (PPP), which serves as a program guide for the public participation process of the MPO by providing policies and principles that guide communication and coordination with residents, neighborhood associations, private and public agencies, transportation providers, and a wide array of interested parties and members of the public. Many of the planning activities of Waco Transit overlap with the activities of the MPO. Similarly, all significant public transportation projects or services are incorporated within the documents produced by the MPO. As a result, the PPP is used to meet Federal Transit Administration public participation requirements for the City of Waco and Waco Transit.

The Primary purpose of the PPP is to ensure that all policy actions of the MPO Policy Board are made only after the public and key transportation stakeholders have been informed about the issue and been given a reasonable opportunity to comment. To this end, a presentation and three public meetings were held throughout the 45-day comment period for this study. Table B-1 represents a timeline of the steps involved during the adoption process for this study. The draft plan was also made available on the Waco MPO website (Figure B-1) April 23 – June 7 as part of the 45-day public comment period for the adoption of this study. Public comments, Technical Committee comments, and comments received via website or email that were received during this 45-day period

are noted in Table B-2 and Table B-3 along with responses from the Waco MPO.

In addition to general public involvement described earlier in this section, both the Stakeholder Advisory Committee and the public were invited to participate in a project prioritization survey. This survey gave participants a chance to rank the list of projects and coordination opportunities according to what level of impact these projects might have on improving transit in McLennan County. The Advisory Committee ranked individual projects and opportunities based on the FTA prioritization criteria (i.e. resources, time, and feasibility) and overall perceived effectiveness in addressing identified transportation gaps or improving transportation services. Participants of the online public survey ranked projects and opportunities according to overall the level of impact they had on improving transit in McLennan County. Scores from the online public input and from the Advisory Committee workbook were averaged together to generate the overall ranking of projects. This ranked list was presented to the MPO Policy board for review and approval on 06/21/2018. The project prioritization process is discussed in greater detail in Chapter 5.

Appendix B Continued

Figure B-1: Waco MPO Website Screenshot

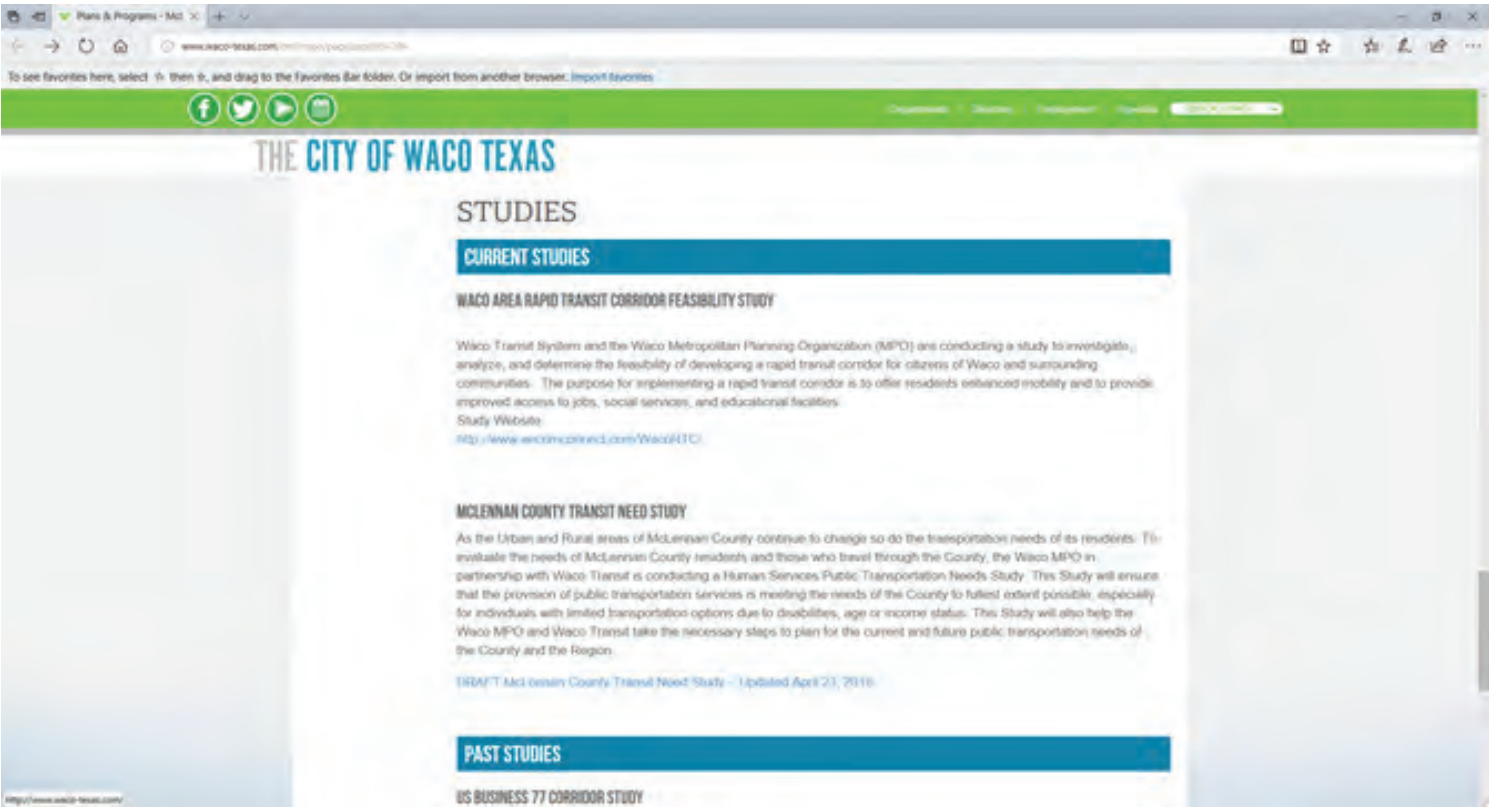


Table B-1: 45-Day Comment Period Meeting Dates and Location

Date	Location	Event Type
April 19, 2018	Waco MPO	Presentation of the DRAFT Plan to MPO Policy Board
April 23, 2018	NA	Begin date for the 45-day public comment period
April 30, 2018 6:00 pm	South Waco Community Center	Public Meeting
May 3, 2018 12:00 pm	Waco Transit Administrative Building	Public Meeting
May 3, 2018 6:00pm	Waco Transit Administrative Building	Public Meeting
June 7, 2018	NA	End date for the 45-day public comment period

Appendix B Continued

Table B-2: Comments and Responses from 45-Day Comment Period

Date	Comment	MPO Response
Public Comment		
April 30, 2018 (6:00 PM)	No public comments recorded	
May 3, 2018 (12:00 PM)	Bicycle Lanes on 4th/5th Street between IH-35 and Waco Drive need to be repainted.	MPO staff noted and will request street maintenance (paving) schedule for 4th and 5th Street from the City of Waco.
May 3, 2018 (12:00 PM)	She attended this public meeting because she saw the notice on the bus.	MPO staff noted and will pass along comment and thank you to Waco Transit System (WTS).
May 3, 2018 (12:00 PM)	Why was the public bench outside of Wal* Mart removed?	MPO staff responded the bench had been placed in TxDOT right-of-way and TxDOT requested removal.
May 3, 2018 (12:00 PM)	Is it feasible to transition the Waco Transit System from a flag stop system to a physical stop system?	MPO Director Evilia stated WTS has considered the associated costs of a physical stop system and believes it is cost prohibitive at this time.
May 3, 2018 (12:00 PM)	Although the Waco Transit System is a flag stop system, disabled passengers often use the same stops each day, so couldn't those stops be identified and then made accessible in the interim?	Transit Need Study Consultant (TNS), Tim Simon, stated this is a strategy WTS could consider and 2 project recommendations in the TNS and current survey address this issue directly.
May 3, 2018 (2:00 PM)	No public comments recorded	
Technical Committee Members Comments		
May 3, 2018 (2:00 PM)	Suggestion to track businesses receiving tax breaks in the Waco area using New Employment Forecasts provided through the Waco-McLennan County Economic Development Corporation (WMCEDC). Those forecasts may provide information for service coordination opportunities with large employees coming to Waco. Contact Kris Collins through the Greater Waco Chamber of Commerce.	MPO staff noted.

Appendix B Continued

Table B-3: Comments and Responses from 45-Day Comment Period

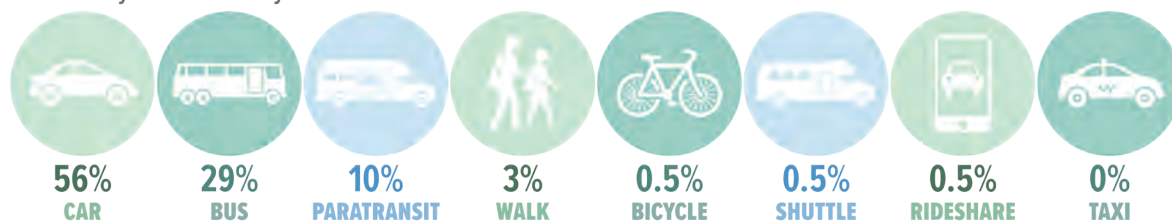
Date	Comment	MPO Response
Website and Email Comments		
May 7, 2018	<p>A better public communication network must be enacted in Waco-McLennan County. If citizens in certain areas have little or no access to the public agenda then alternative modes must be created. No one should be disenfranchised! A more inclusive approach must be enacted instead of a one size fit all! Leave your office and reach out to the public so their needs will be identified and addressed. A library will not assure the public will retrieve a copy of a survey. Someone, anyone, could have brought copies of the survey to our 2018 monthly meetings. Use all forms of communication networks! There is not enough of field work enacted! Also, everyone does not have technical skills or own a computer. I feel too much responsibility is placed on the neighborhood associations. We are volunteers not paid employees.</p>	<p>MPO staff has noted your comment and will include it as part of the McLennan County Transit Need Study.</p> <p>If you have a moment, please review the attached summary of the public user survey for this study which targeted transit users during the month of February, 2018. You will likely be encouraged by the participation. Over 200 responses were received via website, phone app, on-board transit interviews and transit terminal interviews conducted by consultant, and phone surveys conducted by Waco Transit. City of Waco Neighborhood Services employees helped Waco Transit and the Waco MPO to promote the survey in February. Thank you for helping to make that survey such a success.</p> <p>The survey left for you at the East Waco Library is a second survey to prioritize the consultant recommendations included in the draft study. This 2nd survey is targeted to identified stakeholders and Advisory Committee members and to interested members of the public. Because there was such a great turnout of transit passengers in February for the first survey, MPO/WTS staff did not attend Neighborhood Association meetings.</p> <p>Thank you for your continued interest in transit improvements.</p>

Appendix C

MCLENNAN COUNTY TRANSPORTATION SURVEY RESULTS INFOGRAPHIC

THIS SURVEY RECEIVED **223** TOTAL RESPONSES. 

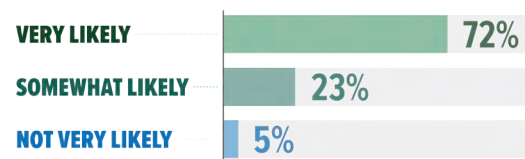
How do you normally travel?



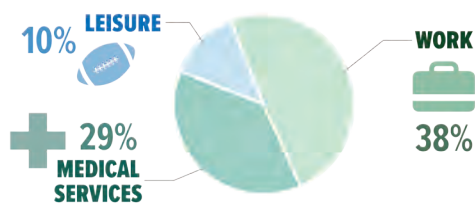
Are you aware of any rural or urban public transportation or ride assistance services in McLennan County?



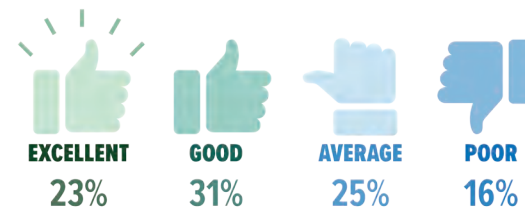
If you have used public transportation within the last year, how likely would you be to use it again?



What is the main reason you use public transportation?



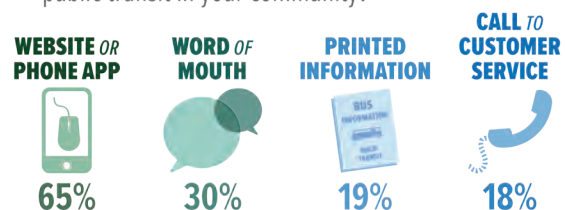
Overall, how would you rate the adequacy of public transportation in McLennan County?



What are the reasons you choose not to use public transportation?



What sources do you use to get information about public transit in your community?



Appendix D

MCLENNAN COUNTY TRANSPORTATION SURVEY RESULTS

1) Are you aware of of public transportation services available in McLennan County?					
	Yes	No			
HOTCOG	82%	18%			
McLennan	78%	22%			
2) Have you or someone in your household used public transportation or ride assistance in McLennan County?					
	Yes	No			
HOTCOG	10%	90%			
McLennan	49%	51%			
3) How would you rate the adequacy of public transportation in McLennan County?					
	Poor	Average	Good	Excellent	I don't know
2010	18%	29%	40%	14%	
2018	16%	25%	31%	23%	6%
4) Top Barriers to Transportation					
	1	2	3	4	5
HOTCOG	Prefer to drive (62%)	No services to places I need to go (20%)	It takes too long (18%)	Not enough information about services (12%)	Service not frequent enough (10%)
McLennan	Have my own vehicle (64%)	Don't know enough about services (25%)	Long wait times (25%)	Not convenient (21%)	Not available when I want to travel (18%)
5) How many minutes does it take you to reach your most frequent destinations?					
	< 5 minutes	5-10 minutes	10-20 minutes	> 20 minutes	
HOTCOG	15%	27%	38%	17%	
McLennan	5%	25%	38%	32%	

Appendix D Continued

6) How likely would you be to use public transportation...

More information	Not likely	Somewhat	Very		
HOTCOG	40%	33%	27%		
McLennan	41%	36%	23%		
Gas prices increase					
HOTCOG	37%	31%	33%		
McLennan	31%	44%	26%		

Stops closer to home

HOTCOG	37%	37%	27%		
McLennan	26%	33%	41%		

Stops closer to destinations

HOTCOG	35%	38%	27%		
McLennan	28%	28%	44%		

More frequency

HOTCOG	36%	37%	27%		
McLennan	28%	36%	36%		

Appendix E

PUBLIC INVOLVEMENT WORKSHOP


McLennan County Public Involvement Workshop:
Participant Response Sheets

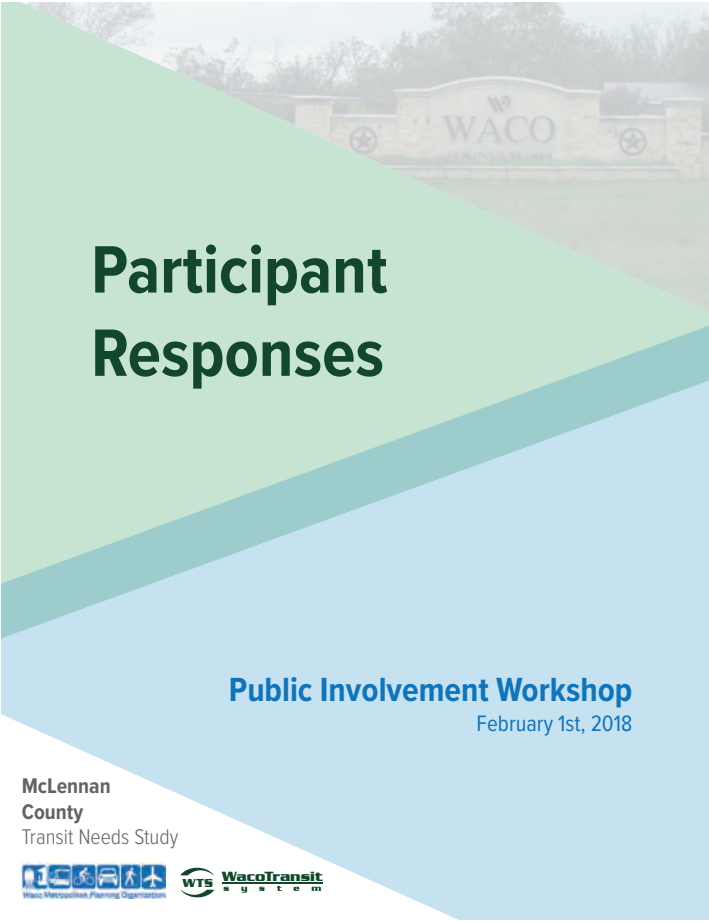
Participant Responses

Public Involvement Workshop

February 1st, 2018

McLennan County
Transit Needs Study





Exercise 1

Do you agree or disagree with the classification of these route segments? _____

What areas currently don't have service that could benefit from having service? _____

What areas currently have service that could use more frequent service, later service, or weekend service? _____

Do you have any additional comments? _____

Appendix E Continued

Exercise 2

What other agencies (e.g. nursing homes or churches) provide transportation services in the county?

Do any of the areas where there are concentrations in pickups/drop-offs have similar characteristics?

In general, how do you think transportation services could improve in McLennan County? _____

Are there any major employment centers or attractions outside of the urban area that could benefit from being served by transit?

Are the days and hours of operation for demand response services adequate to serve the needs of the communities? Are later or weekend services needed?

Do you have any additional comments? _____

Exercise 3

Please score the following transit coordination opportunities on a scale of 1 - 5 based on their importance to you, with 1 being least important and 5 being most important to the future of transit coordination in McLennan County.

Rural Community to Waco
Connectivity Project

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5

Improve Commuter Services

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5

Standard of Good Repair

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5

Alternative Fuels

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5

Bus Stop Improvements

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5

Increase Fixed
Route Services

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5

Gap Service

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5

Terminal Expansion

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5

Reimagine Fixed
Route Service

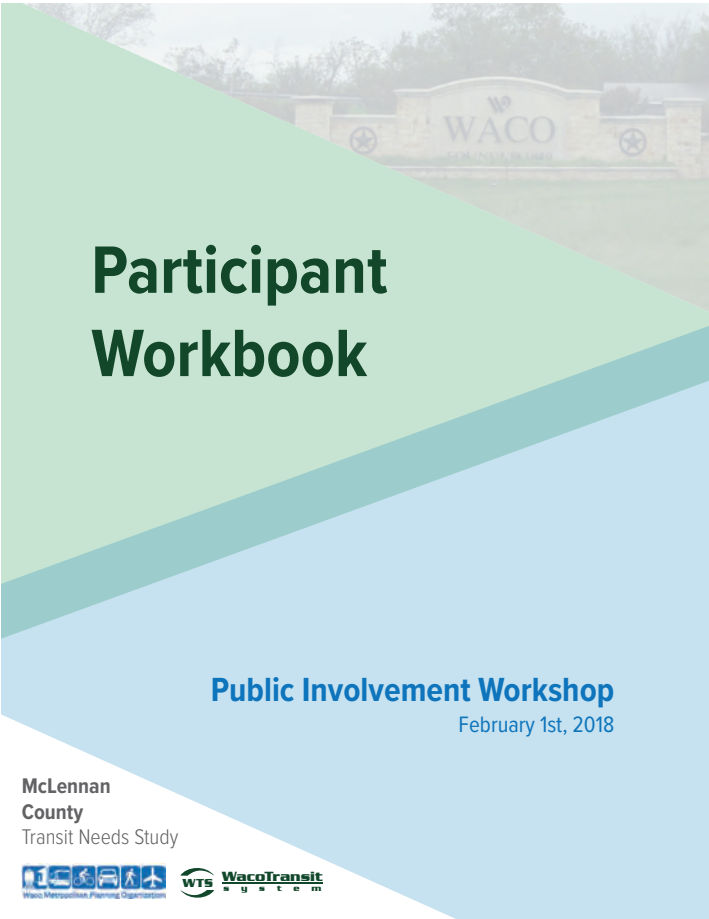
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5

Transit Asset Management
Plan Development

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5

Appendix E Continued

McLennan County Public Involvement Workshop:
Participant Workbook

The cover of the Participant Workbook features a background image of a Waco stone archway. The title 'Participant Workbook' is in large green text. Below it, 'Public Involvement Workshop' and 'February 1st, 2018' are in blue. At the bottom left, it says 'McLennan County Transit Needs Study' with logos for the Waco Metropolitan Planning Organization and Waco Transit System.

Introduction

The Waco Metropolitan Planning Organization (MPO) and Waco Transit would like to welcome you to the kick-off event for the McLennan County Transit Need Study public engagement effort. We appreciate you taking the time to attend this meeting and help inform the Study about how to make public transit better in and through McLennan County.

The moderator will go over a brief PowerPoint presentation to discuss what Transportation Coordination is and what the goals and objectives of this public workshop are.

Overview

As the Urban and Rural areas of McLennan County continue to change so do the transportation needs of its residents. To evaluate the needs of McLennan County residents and those who travel through the County, the Waco MPO in partnership with Waco Transit is conducting a Human Services Public Transportation Needs Study. This Study will ensure that the provision of public transportation services is meeting the needs of the County to fullest extent possible, especially for individuals with limited transportation options due to disabilities, age or income status. This Study will also help the Waco MPO and Waco Transit take the necessary steps to plan for the current and future public transportation needs of the County and the Region.

Purpose

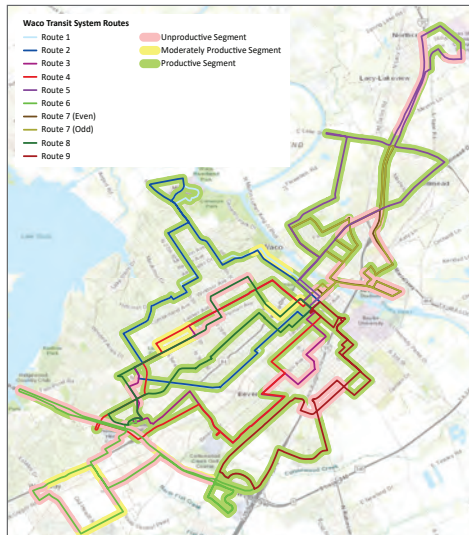
The purpose of today's meeting is to:

- Develop a shared understanding of what coordination is and what it means to McLennan County;
- Learn about the public transit needs of this community;
- Identify ways to improve public transit in and through McLennan County.

The moderator of today's meeting and the facilitators stationed at each table will take you through three exercises to develop valuable data and insight, which will be used to identify and prioritize coordination opportunities.

Appendix E Continued

Exercise 1

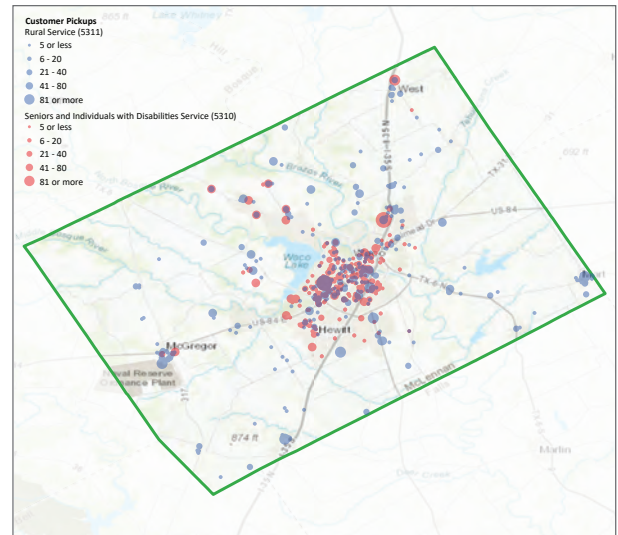


To develop an understanding of existing travel patterns and potential opportunities to improve connectivity for the Waco Transit fixed-route bus network, boarding and alighting data was analyzed at the stop, segment, and network level.

The map above displays ridership productivity at the segment level. Analysis at the segment level provides more real-world opportunities to reimagine service in a way that improves connectivity and system efficiency.

The facilitator will ask you a series of questions as you review the map that will help generate ideas about how we can maintain the strengths of the existing system while at the same time identify ways to improve the system.

Exercise 2



The map above shows customer pickup locations and number of pickups at those points throughout the duration of the data collection period. Pickup information was collected for 5311 Rural Service and 5310 Seniors and Individuals with Disabilities Service.

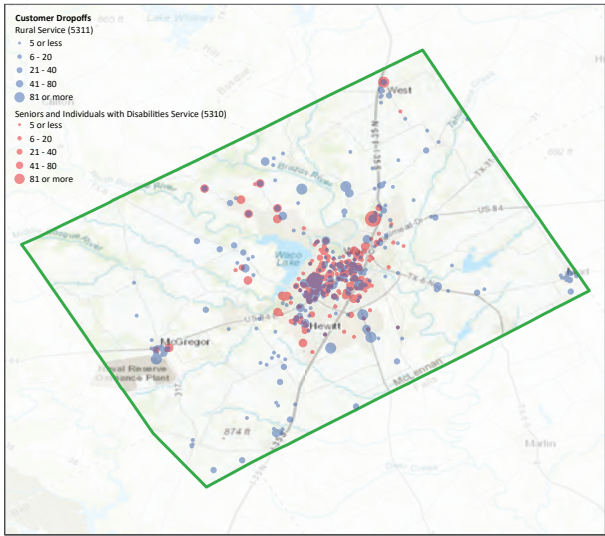
This data shows key pickup locations throughout the county for each service type. The maps illustrate patterns where improved efficiency and coordination may provide more accessible and efficient transportation options throughout McLennan County.

(Continue to next page for Part 2 of Exercise 2)

Appendix E Continued

McLennan County Public Involvement Workshop:
Participant Workbook Continued

Exercise 2



The map above shows customer drop off locations and number of drop offs at those points throughout the duration of the data collection period. Drop off information was collected for 5311 Rural Service and 5310 Seniors and Individuals with Disabilities Service.

This data shows key drop offs locations throughout the county for each service type. The maps illustrate patterns where improved efficiency and coordination may provide more accessible and efficient transportation options throughout McLennan County.

The facilitator will ask you a series of questions as you review the maps that will help generate ideas about how we can improve demand response service throughout McLennan County.

Exercise 3

Coordination Opportunity	Description
Rural Community to Waco Connectivity Project	Provides city access to a wide variety of citizens from Falls and McLennan Counties. This project provides accessibility options (e.g. hospitals, employment, etc.) that enhance quality of life opportunities.
Improve Commuter Services	Includes projects aiming to reduce commuter travel times as well as pose viable solutions for congestion mitigation.
Standard of Good Repair	This includes day to day operations maintenance, as well as the operation of complimentary ADA services. Presents the opportunity for reimbursement of 5310 funds for costs relating to complimentary ADA services provided.
Alternative Fuels	Addresses coordination with other public agencies to retrofit vehicle fleets to reduce emissions and decrease per vehicle costs.
Bus Stop Improvements	Addition of bus shelters/bus pullouts to meet or exceed ADA accessibility requirements, provision of route information, enhanced lighting and safety features, and kiosks (at high volume stops) for real time updates and pass purchasing.
Increase Fixed Route Services	Projects focused on understanding the feasibility of increasing service frequency, expanding service downtown, and extending hours of operation for specific routes.
Gap Service	Provides funding for curb to curb service for those (living in urbanized Waco) who do not qualify for ADA service but struggle to use public transportation.
Terminal Expansion	Calls for expansion and improvements of the WTS terminal building, spanning increased bathroom/lobby/customer service capacity, central cooling/heating, and safety/security.
Reimagine Fixed Route Service	Projects include implementation of a rapid transit system, higher transit frequency with increased hours of operation, and realignment of the current fixed route system.
Transit Asset Management Plan Development	Aims to identify existing critical assets and the resources necessary to preserve said assets in good operational and structural condition.

Appendix E Continued



THANK YOU!

Thank you for your participation. Please remember to turn in all of your completed activity sheets and feel free to keep your workbooks.

Please note that we will use the information gathered today and from the public survey that will be open through the end of February to inform the Study and develop DRAFT recommendations that will be presented to the MPO Policy Board (tentatively scheduled for late April 2018). After this presentation of the DRAFT Study there will be three (3) public meetings to present the DRAFT Study and recommendations and to solicit feedback and a 45-day public comment period before we finalize the Study.

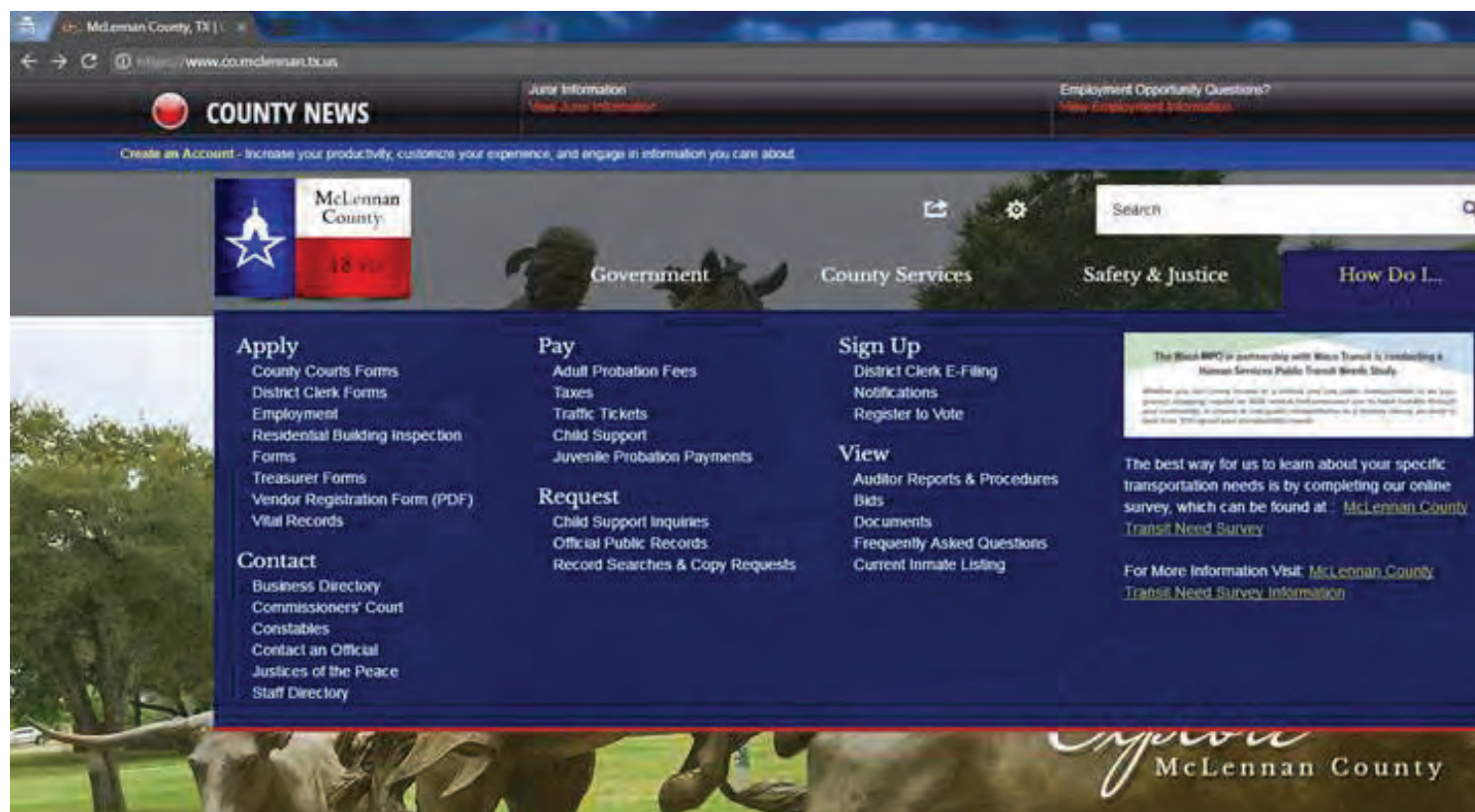
Please use the link below to access the online survey to provide more feedback:
<https://atgplanning.typeform.com/to/gikp31>



Appendix F

PUBLIC ENGAGEMENT WEBSITE POSTING

McLennan County Website Screen Shot:
Post Details for Public Transit Needs Study



Appendix F Continued

McLennan County Website Screen Shot: Post Details for Public Transit Needs Study

12/15/2017

Metropolitan Planning Organization - McLennan County

METROPOLITAN PLANNING ORGANIZATION

examples: pay bill, get permit, job application

Metropolitan Planning Organization

Metropolitan Planning Organization (/cms-mpo)	Plans & Programs (/cms-mpo/page.aspx?id=209)
Meetings (/cms-mpo/page.aspx?id=208)	Policy Board (/userfiles/cms-mpo/file/MPOPolicyBoard11-9-17.pdf)
Technical Committee Board (/userfiles/cms-mpo/file/MPOTechCo...)	Member Governments (/cms-mpo/page.aspx?id=212)
Active Transportation Plan (http://www.waco-texas.com/cms-mpo...)	

About

The Waco Metropolitan Planning Organization (MPO) coordinates transportation planning activities for all of McLennan County. Click here for a map showing the Metropolitan Area Boundary (http://www.waco-texas.com/userfiles/cms-mpo/file/urban_map.pdf).

The MPO was established by the federal government to ensure that transportation decisions within the MPO area are performed in a continuing, comprehensive and cooperative process. The MPO provides a forum for local input into the expenditure of federal highway and transit dollars.

The MPO is governed by a 20 member Policy Board who adopts all MPO plans and programs and determines regional transportation policy. For a current list of Policy Board members, click here (</userfiles/cms-mpo/file/PB-TC%20Members/2018/MPO%20Policy%20Board%2011-10-17.pdf>).

PUBLIC TRANSIT NEEDS STUDY



PLEASE TAKE OUR SURVEY

<http://www.waco-texas.com/cms-mpo/>

1/4

12/15/2017

Metropolitan Planning Organization - McLennan County

The best way to learn about your specific transportation needs is by completing our online survey using the link below:

<https://atgplanning.typeform.com/to/gikp31> (<https://atgplanning.typeform.com/to/gikp31>)

OVERVIEW OF THE MCLENNAN COUNTY TRANSIT NEED STUDY

As the Urban and Rural areas of McLennan County continue to change so do the transportation needs of the its residents. To evaluate the needs of McLennan County residents and those who travel through the County, the Waco MPO in partnership with Waco Transit is conducting a Human Services Public Transportation Needs Study. This Study will ensure that the provision of public transportation services is meeting the needs of the County to fullest extent possible, especially for individuals with limited transportation options due to disabilities, age or income status. This Study will also help the Waco MPO and Waco Transit take the necessary steps to plan for the current and future public transportation needs of the County and the Region.

INITIAL PUBLIC KICK-OFF EVENT:

Another way to get involved with the public engagement process of this Study is to attend and participate at our tabling event and public workshop at the Waco Transit Terminal on Thursday, February 1, 2018.

TABLING EVENT:

When: Thursday, February 1, 2018

Where: The Downtown Waco Transit Terminal located at 301 South 8th Street

What: We will have tables and maps set up at the Transit Terminal so that we can have a discussion about the Transit needs of the community. There will be refreshments and giveaways.

Why: Because we understand the vital role public transportation plays in the lives of those who depend on it.

PUBLIC WORKSHOP:

When: Thursday, February 1, 2018

Where: Conference room inside the Waco Transit Office Building located at 301 South 8th Street

What: This will be an open house public workshop where we have interactive discussions about transportation needs and how to best meet these needs.

Why: Because we understand the vital role public transportation plays in the lives of those who depend on it.

TAKE NOTICE THAT THE METROPOLITAN PLANNING ORGANIZATION (MPO),

WILL BE RECEIVING PUBLIC COMMENT ON AMENDMENTS TO THE WACO RAPID TRANSIT CORRIDOR STUDY DRAFT RECOMMENDATIONS REPORT

The Waco Metropolitan Planning Organization (MPO) is soliciting public input on regarding the Waco Rapid Transit Corridor Study Draft Recommendations Report.

The Waco Rapid Transit Study Draft Recommendations Report, to evaluate the potential for rapid transit in the City of Waco, can be viewed online at the below links and at the following locations between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday.

MPO Offices, Dr. Mae Jackson City of Waco Development Center, 401 Franklin Ave
Waco Transit Administration Center, 301 South 8th Street

Three public informational meetings were conducted to provide information regarding these documents and to accept comments from the public.

<http://www.waco-texas.com/cms-mpo/>

2/4

Appendix F Continued

McLennan County Website Screen Shot:
Post Details for Public Transit Needs Study

12/15/2017 Metropolitan Planning Organization - McLennan County

Comments regarding the Waco Rapid Transit Study Draft Recommendations Report will be accepted through 5 p.m., Friday, January 5, 2018. Comments should be directed to Christopher Evllia and may be submitted via the following methods:

Email: mpo@wacotx.gov
Fax: (254) 750-1605
Phone: (254) 750-5651

Mail: Waco Metropolitan Planning Organization
P.O. Box 2570
Waco, Texas 76702-2570

Waco Rapid Transit Corridor Study Draft Recommendations Report
Presentation Regarding Waco Rapid Transit Corridor Study Draft Recommendations Report
(/userfiles/cms-mpo/file/2017-BRT-TIP-MTP%20Amendments/2017-1026_Waco%20RTC_MPO%20Policy_v3.pdf)
(http://www.aecomconnect.com/WacoRTC/)Waco Rapid Transit Corridor Study
(http://www.aecomconnect.com/WacoRTC/)

Comment Forms	English (/userfiles/cms-mpo/file/2017-BRT-TIP-MTP%20Amendments/comment_form_MTP%2C%20TIP3%2C%20bus%20rapid%20transit.pdf)	Spanish (/userfiles/cms-mpo/file/2017-BRT-TIP-MTP%20Amendments/Spanish comment form MTP%20TIP3%20bus%20rapid%20transit.pdf)
---------------	---	---

METROPOLITAN AREA ACTIVE TRANSPORTATION PLAN (ATP) ([HTTP://WWW.WACO-TEXAS.COM/CMS-MPO/PAGE.ASPX?ID=440](http://www.waco-texas.com/cms-mpo/page.aspx?id=440))

The ATP will provide a framework for improving walking and biking conditions in the Waco Metropolitan Area through the year 2045. We are collecting public input on how to improve the pedestrian and bicycle experience, including expanding the network of bicycle lanes, multi-use paths and sidewalks.

Please see our Active Transportation Plan page (<http://www.waco-texas.com/cms-mpo/page.aspx?id=440>).

RAPID TRANSIT CORRIDOR

The Waco Metropolitan Planning Organization (MPO) in conjunction with Waco Transit System, Inc. conducting a workshop for all interested persons to review concepts and provide input regarding the development of a rapid transit corridor through the Waco Urbanized Area. This workshop was conducted as part of a public transit small starts study which will consider all reasonable service alternatives for possible implementation.

RTC project website: <http://www.aecomconnect.com/WacoRTC> (<http://www.aecomconnect.com/WacoRTC/>)

Email: mpo@wacotx.gov (mailto:mpo@wacotx.gov) or WacoRapidTransit@aecom.com (mailto:WacoRapidTransit@aecom.com)

Fax: (254) 750-1605
Phone: (254) 750-5651
Mail: Waco Metropolitan Planning Organization

<http://www.waco-texas.com/cms-mnpl>

3/4

12/15/2017
P.O. Box 2570
Waco, Texas 76702-2570

Hosted by Waco Transit System and Waco Metropolitan Planning Organization

The Policy Board

The Policy Board receives technical recommendations regarding specific projects and all plans and programs from the MPO Technical Committee. For a current list of Technical Committee members, [click here](#).
(/userfiles/cms-mpo/file/PB-TC%20Members/2018/MPO%20Technical%20Committee%2011-10-17.pdf)

See the meetings page (<http://www.waco-texas.com/cms-mpo/page.aspx?id=208>) for information regarding the next scheduled Policy Board and Technical Committee meetings.

"Moving Ahead for Progress in the 21st Century Act (MAP-21)" provides funding for project construction, transit programs, and planning activities. It also identifies the primary goals of the MPO and governs its activities. For more information on MAP-21, visit the Federal Highway Administration (<https://www.fhwa.dot.gov/map21/>).

Meetings >> (<http://www.waco-texas.com/cms-mpo/page.aspx?id=208>)

Home (/) | City of Waco, Texas | PO Box 2570 | 300 Austin Ave. | Waco, Texas 76702 | Employees Only (<http://intranet.waco-texas.com/>) | Phone Directory ([/directory.asp](#))
©2017 | Designed & Maintained by City of Waco Municipal Information ([/information.asp](#)) | All Rights Reserved | Privacy Policy and Disclaimer ([/privacy.asp](#))
Contact Us ([/cms/forms/contact.aspx](#))

<http://www.waco-texas.com/cms-mnpl>

418

Appendix G

PUBLIC INPUT POSTING

WACO Tribune Article: Public input sought on transit needs at meeting

Public input sought on transit needs at meeting Thursday | City Of Waco | wacotrib.com Page 1 of 2

http://www.wacotrib.com/news/city_of_waco/public-input-sought-on-transit-needs-at-meeting-thursday/article_48f4ba07-4621-50a9-8ee5-51f6b7c0ee63.html

Public input sought on transit needs at meeting Thursday

By J.B. SMITH jbsmith@wacotrib.com 15 hrs ago

Anyone who uses or has an interest in public transit is invited to make their voice heard Thursday.

Local transportation planners will hold a public meeting to gather input for a McLennan County Transit Need Study at 6 p.m. at the Waco Transit office building, 301 S. Eighth St.

Transit officials and consultants for the study will also be set up from 8 a.m. to 5 p.m. at the adjacent Waco Transit terminal to hear feedback from riders.

"We'll be set up through the course of the day," Waco Transit general manager Allen Hunter said. "We understand not everybody can come to the meetings. The main thing is the public participating. We want to know, is our transit system meeting your needs? If not, why not? ... If we can't get them to come to the meeting, we'll bring the meeting to them."

The Waco Metropolitan Planning Organization commissioned the regional transit study, which is a requirement to qualify for state and federal funding. MPO director Chris Evilia said he expects the study to be useful for future transit improvements.

http://www.wacotrib.com/news/city_of_waco/public-input-sought-on-transit-needs-at-meeting-thursday/article_48f4ba07-4621-50a9-8ee5-51f6b7c0ee63.html 1/31/2018

Public input sought on transit needs at meeting Thursday | City Of Waco | wacotrib.com Page 2 of 2

"We're trying to get some idea for where the demand for transit exists, and whether that's changed, and whether there are places that are underserved. How do we reallocate resources to address those gaps?"

Waco Transit serves the urbanized area of Waco with a hub-and-spoke system that results in hourlong loops. The MPO and city of Waco are pushing for a "bus rapid transit" system organized around a central express line to expedite crosstown trips. Evilia said the results of this transit needs study will be included in funding applications for that project.

Residents can also submit their opinions about transit online at <http://atgplanning.typeform.com/to/gikp31>.

JB Smith

Appendix G Continued

WACO Tribune Article: Public input sought on transit needs at meeting

2/5/2018

Waco: City seeks public input on major transportation projects

Waco: City seeks public input on major transportation projects



By Chelsea Edwards | Posted: Thu 9:54 PM, Feb 01, 2018 | Updated: Fri 10:50 AM, Feb 02, 2018

WACO, Texas (KWTX) From the public buses to the roads they travel on, the City of Waco sought input on major future projects through two public meetings held on Thursday. The city hosted one public meeting to introduce major roadway improvement projects for parts of Chapel road, Speegleville road, Mars Drive, Old Hewitt Road and Ritchie Road.

Residents in the Ritchie Road area are already dealing with upcoming commercial and residential construction along with an increase of traffic. Attendees were able to ask questions and voice concerns to the two engineering teams hired by the city to plan the projects.

Jim Reed, Capital Improvement Plan Manager for the City of Waco says this part of the planning process is necessary to keep up with population growth in Waco. "It allows for future development. It allows for safe movement of traffic," says Reed.

"What we're looking at is not what we need today, but we're looking at demand models for what it would take to do the improvements for safe travels of citizens in about a 20-year cycle."

He says the widening of Ritchie Road has been full funded and should be completed in eighteen months. The other projects still need budget approval. The Waco Transit System held a workshop this evening to get feedback on how to meet the needs of public transportation users.

So far, residents are requesting late night and weekend options and can look forward to plans to fill in time gaps with smaller transportation services. The Metropolitan Planning Organization is seeking responses to an online survey through the end of February. (see link)

"It's the most crucial part of the study," says Tim Simon of the Alliance Transportation Group, the company hired to help conduct the study on Waco's public transportation needs.

"We don't want to make a plan that we think will work for the community. We want the community to support a plan that will work for the community." Those responses will be put into an improvement plan over the next few months.

Appendix H

ACT LOCALLY NEWSLETTER

Act Locally Waco Newsletter: WHOLE Enchilada for December 15, 2017

This week's WHOLE Enchilada | Act Locally Waco

Act Locally Waco

Enjoy Waco! Get involved!

HOME ABOUT NEWSLETTER SUBSCRIBE 2017 CALENDAR FUNDRAISERS

SUBMIT AN EVENT GET HELP LOCALLY JOBS/JOB RELATED BLOG DONATE

SPONSORS & ADVERTISERS WANT TO BE A SPONSOR/ADVERTISER?



This week's WHOLE Enchilada

December 15, 2017

This week's WHOLE Enchilada brought to you by...



[Learn more about this week's sponsor!](#)

<http://www.actlocallywaco.org/2016-newsletter/2016-the-whole-enchilada/> [12/18/2017 12:09:21 PM]

This week's WHOLE Enchilada | Act Locally Waco

our elderly residents begin to feel the need for them.

Will you help us with your donation? Each heater costs \$20 and we would like to purchase 150. There are several ways you can help:

- Make checks payable to Meals & Wheels and indicate "Heater Project" in the memo line, send to: P.O. Box 85, Waco, Texas 76703.
- To pay by credit card, call (254) 752-0316, Monday through Friday from 8:00 AM – Noon and mention that you would like to make a donation to the heater project. We will take your credit card information on the phone.
- Order one (or more) heaters directly from Walmart (Patton Electric Utility Milkhouse Heater) or the vendor of your choice (listed below) and either bring them in yourself or have them delivered to Meals & Wheels, 501 W. Waco Drive, Waco, TX 76707.

We Need Your Help! – As the Urban and Rural areas of McLennan County continue to change so do the transportation needs of the its residents. To evaluate the needs of McLennan County residents and those who travel through the County, the Waco MPO in partnership with Waco Transit is conducting a Human Services Public Transportation Needs Study. This Study will ensure that the provision of public transportation services is meeting the needs of the County to fullest extent possible, especially for individuals with limited transportation options due to disabilities, age or income status. This Study will also help the Waco MPO and Waco Transit take the necessary steps to plan for the current and future public transportation needs of the County and the Region. Complete this online survey here:

<https://atgplanning.typeform.com/to/gikp31>

Ministry and Non-Profit Fairs – The Office of Ministry Connections at Truett Seminary and Baylor University would like to extend the invitation to attend our new Ministry & Nonprofit Fair happening Monday, January 29th. This fair will provide a greater avenue for students to connect with faith-based organizations in order to integrate their faith and vocation. This year we are holding two separate events on the same day aimed at differing student bodies. You are cordially invited to join us for this event and discuss career and/or missions opportunities with our talented students. Due to limited space, we ask that interested organizations register as soon as possible. Please note that booth space will not be confirmed until payment has been processed. You have the opportunity to have a booth at either or both locations.

- For Truett Seminary Ministry & Nonprofit Fair – FREE booth fee, 11:30 AM – 1:30 PM, Truett Seminary Great Room – email matt_homeyer@baylor.edu.
- Baylor Ministry & Nonprofit Fair – \$50 per booth, 3:00 – 5:00 PM, Bill Daniel Student Center's Barfield Drawing Room, [Register Here](#)

Want to Opt Out of a Phone Book? – It's free, easy, and takes just 3 minutes! All residents need to do is:

1. Visit the [Yellow Pages Opt Out website](#)
2. Enter zip code and create an account

<http://www.actlocallywaco.org/2016-newsletter/2016-the-whole-enchilada/> [12/18/2017 12:09:21 PM]

Appendix I

CITY OF WACO WEBSITE SCREENSHOT

City of Waco Website Screenshot



Appendix J

PUBLIC INVOLVEMENT MESSAGING

Public Engagement Messaging for Public Involvement

Overview

As the Urban and Rural areas of McLennan County continue to change so do the transportation needs of its residents. To evaluate the needs of McLennan County residents and those who travel through the County, the Waco MPO in partnership with Waco Transit is conducting a Human Services Public Transportation Needs Study. This Study will ensure that the provision of public transportation services is meeting the needs of the County to fullest extent possible, especially for individuals with limited transportation options due to disabilities, age or income status. This Study will also help the Waco MPO and Waco Transit take the necessary steps to plan for the current and future public transportation needs of the County and the Region.

Stakeholder Involvement

This effort in coordination will only be as effective and strong as the stakeholder group that is championing it. The strategies for this effort will work to reinvigorate the stakeholder process and ensure the time and effort of the stakeholder is meaningful, convenient and respective of each stakeholder's time.

An effective Stakeholder engagement process invites the MPO, its planning partners, stakeholders and the community at large into a collaborative, accessible planning effort to provide the following activities and answer the following questions:

1. Defining McLennan County Transit Need Study Goals and Objectives:

What do we want to achieve and what is achievable?

2. Visioning:

What does success look like? (help people envision an optimized and integrated transit system when they may have never seen one before.)

3. Visualizing Strategies and Outcomes:

How do we make it happen? (Examples of solutions or strategies that address the needs of the County and help overcome the challenges and obstacles encountered by the providers.)

4. Developing Candidate Performance Measures:

How do we measure success?

Alliance will bring together stakeholders in roundtable discussion groups, as well as scheduling meetings with individual stakeholder groups to ensure that the needs of the broadest possible range of key stakeholders are represented in the planning process. Our focus will be on ensuring that those voices that are traditionally underrepresented in the transportation planning process are engaged in this process as human services transportation can have a direct impact on many of these underrepresented individuals.

Alliance will design a fresh and energized community stakeholder engagement process to facilitate the optimal use of participants' time and effort. In-person meetings will be supplemented by interactive online tools and social media resources to provide participating community stakeholders with an opportunity for continuous participation and input into the process without having to disrupt their busy routines. The objective of this balanced and flexible approach is that all constituency groups can take ownership of the outcomes of the planning process, and final approval of the plan takes place in an environment of ongoing collaboration.

Public Involvement

Whether you don't have access to a vehicle and use public transportation to do your grocery shopping, require an ADA vehicle that empowers you to have mobility through your community or choose to ride public transportation as a lifestyle choice we want to hear from you about your transportation needs. And the best way to learn about your specific transportation needs is by completing our online survey.

The purpose of this public involvement effort is to gather information from YOU, both the public transportation users and non-public transportation users in and through McLennan County to learn about YOUR travel experiences and needs. This feedback will be used to help determine how to better meet the transportation service needs throughout the County. The survey should take only about 5-10 minutes to complete and we thank you in advance for your time and willingness to participate in our public transportation planning process.

<https://ataplanning.typeform.com/to/aikp31>

Initial Public Kick-Off Event:

Another way to get involved with the public engagement process of this Study is to attend and participate at our tabling event and public workshop at the Waco Transit Terminal on Thursday, February 1, 2018.

Tabling Event:

When: Thursday, February 1, 2018

Where: The Downtown Waco Transit Terminal located at 301 South 8th Street

What: We will have tables and maps set up at the Transit Terminal so that we can have a discussion about the Transit needs of the community. There will be refreshments and giveaways.

Why: Because we understand the vital role public transportation plays in the lives of those who depend on it.

Public Workshop:

When: Thursday, February 1, 2018

Where: Conference room inside the Waco Transit Office Building located at 301 South 8th Street

What: This will be an open house public workshop where we have interactive discussions about transportation needs and how to best meet these needs.

Why: Because we understand the vital role public transportation plays in the lives of those who depend on it.

Appendix K

PUBLIC INVOLVEMENT MESSAGING SPANISH TRANSLATION

Public Engagement Messaging and Translation into Spanish

McLennan County Transit Need Study

The Waco MPO and Waco Transit appreciate the community's ongoing engagement in the McLennan County Transit Need Study. The Project Team would like to update you on plan progress and provide you with an opportunity to offer feedback.

Feedback so far has helped to shape ideas for new and enhanced projects and coordination opportunities to ensure the provision of public transportation services meets the needs of the County to the fullest extent possible, especially for individuals with limited transportation options. The DRAFT recommendations will help the Waco MPO and Waco Transit better plan for the future public transportation needs of the County and the Region.

The DRAFT Plan and recommendations will be presented to the MPO Policy Board on Thursday, April 19, 2018 and then made available on the Waco [MPO website](#) for a 45-day public comment period beginning on April 23 and ending on June 7, 2018. The public is strongly encouraged to review the document online and attend one of the public meetings listed below to hear a brief presentation on the DRAFT recommendations and provide feedback.

Next Steps:

There will be three opportunities to attend a public meeting and hear a brief presentation highlighting the major takeaways from the DRAFT Plan. Below are the next steps in the process as well as information regarding the public meetings.

- April 19, 2018: Presentation of the DRAFT Plan to MPO Policy Board
- April 23, 2018: Begin date for the 45-day public comment period
- Public Meetings:
 1. When: Monday, April 30, 2018 @ 6:00 p.m.
Where: South Waco Community Center
 2. When: Thursday, May 3, 2018 @ 12:00 p.m.
Where: Waco Transit Administrative Building
 3. When: Thursday, May 3, 2018 @ 6:00 p.m.
Where: Waco Transit Administrative Building
- June 7, 2018: End date for the 45-day public comment period

McLennan County Transit – Estudio de Necesidades de Tránsito

La MPO de Waco (*Waco Metropolitan Planning Organization*) y *Waco Transit* agradecen la frecuente participación de la comunidad en el Estudio de Necesidades de Tránsito del Condado McLennan. El equipo de trabajo para este proyecto desea informarle sobre el avance del plan y ofrecerle otra oportunidad para que haga sus comentarios.

Los comentarios recibidos hasta ahora nos han ayudado a dar forma a las ideas para mejorar los proyectos nuevos, y oportunidades de coordinación para garantizar que los servicios de transporte público satisfacen las necesidades del condado en la mayor medida posible, especialmente para las personas con pocas opciones de transporte. Estas recomendaciones, PRELIMINARES, ayudarán a la MPO de Waco y a *Waco Transit* a identificar las necesidades de transporte público del condado y de la región para el futuro.

El Plan PRELIMINAR y las recomendaciones serán presentados a la Junta Directiva de MPO el jueves, 19 de abril de 2018, y se publicarán en [MPO website](#) de la ciudad de Waco durante 45 días, que es el período para que público haga sus comentarios: comienza el 23 de abril y termina el 7 de junio de 2018. Hacemos énfasis en invitar al público para que estudie el documento en línea y asista a una de las sesiones públicas enumeradas abajo; se podrá escuchar una breve presentación sobre las recomendaciones PRELIMINARES y podrá hacer sus comentarios.

Próximos pasos:

Habrán tres reuniones con el público para escuchar una breve presentación que hace énfasis en las principales conclusiones de este proyecto PRELIMINAR. A continuación aparecen los próximos pasos de este proceso, así como el lugar, fecha y hora de las reuniones públicas.

- Abril 19, 2018: presentación del Plan PRELIMINAR a la Junta Directiva de la MPO de Waco
- Abril 23, 2018: inicio de los 45 días del período para recibir los comentarios del público.
- Reuniones públicas:
 1. Cuándo: lunes, 30 de abril de 2018 @ 6:00 p.m.
Dónde: *South Waco Community Center*
 2. Cuándo: jueves, 3 de mayo de 2018 @ 12:00 pm.
Dónde: *Waco Transit Administrative Building*
 3. Cuándo: jueves, 3 de mayo de 2018 @ 6:00 p.m.
Dónde: *Waco Transit Administrative Building*
- Junio 7, 2018: fecha de cierre del período de 45 días para recibir los comentarios del público.

Appendix L

PROJECT #19 ASSESSMENT

Introduction

Background & Purpose

Waco Transit System (WTS) provides a variety of transit amenities (e.g. benches and shelters) at bus stops along the fixed-route network that provide safety and comfort for its passengers. Project 19 in this study aims to increase the number of these amenities through the network, as well as improve existing amenities. Part of this improvement includes providing better signage, as the flag-a-stop system typically does not provide adequate signage. The overall goal of Project 19 and this analysis is to identify and prioritize locations for bus shelters, kiosks, other amenities, and bus pullouts that will help improve safety and traffic flow.

The following analysis aims to generate a base understanding of existing fixed-route amenities in the area. This analysis will provide necessary data to support Project 19, along with future transit improvements, and to address public comment. The analysis includes an inventory of all existing transit amenities, existing amenity type(s) (e.g. shelter, sidewalk, bench, etc.), ADA functionality, and recommendations for new amenity locations based off ridership and route productivity. The final product displays which amenities currently meet minimum ADA guidelines, which are close to ADA minimum guidelines (in this study referred as ADA Functional), the highest performing existing amenities, and the highest performing transit segments without any stop amenities. All deliverables aim to achieve the main goal of Project 19, which is to identify and prioritize amenities/segments along the current WTS fixed-route system for future improvements.

Methods

Existing Inventory

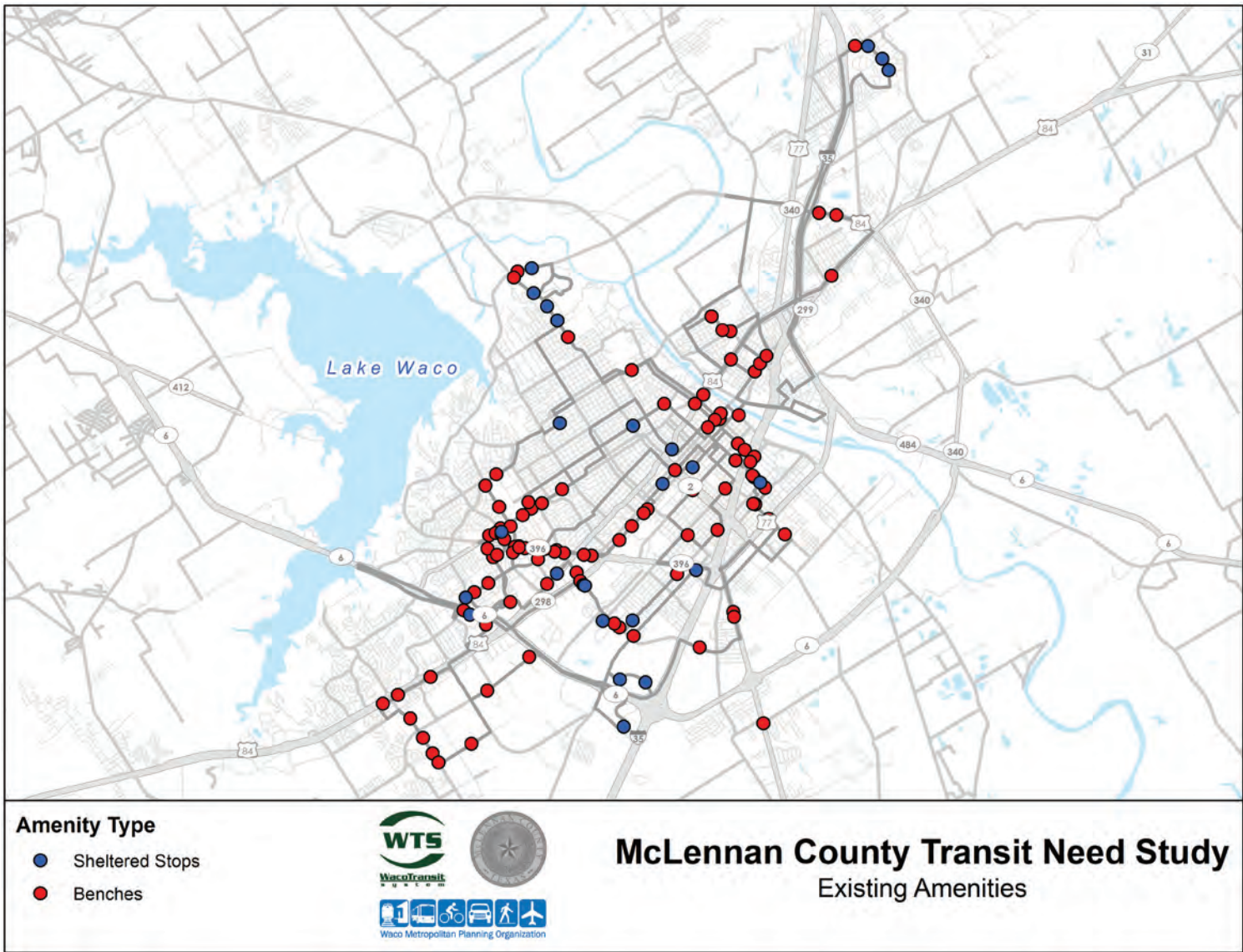
All existing amenity locations were provided by WTS. Point locations of amenities were recorded and reviewed via Google Earth/Maps. Images were also recorded for every stop amenity. Each stop was then analyzed to create an inventory of amenity type and ADA accessibility type. This is important because any improvements denoting an area to be an official bus stop (i.e. installing a bus stop sign) must meet minimum ADA requirements. These requirements include bus stops with the following characteristics:

- A firm surface;
- A minimum clear length of 96 inches (from curb/vehicle road edge);
- A minimum clear width of 60 inches (parallel to vehicle roadway);
- A maximum slope of 1:50 (also referred as a 2% grade) for water drainage; and
- Connection to surrounding street/pedestrian infrastructure by an accessible route.

For this analysis, stops were tagged either as meeting ADA minimum requirements or “Functional”, which means the stop is usable for those requiring ADA accessibility but for reasons (typically sidewalk clear length and pathway obstruction) does not officially meet ADA standards. Amenities tagged as Functional represent amenities that could be improved to ADA standards with minimal action. Figures L-1 & L-2 display WTS existing amenity inventory.

Appendix L Continued

Figure L-1: Waco Transit Existing Amenities



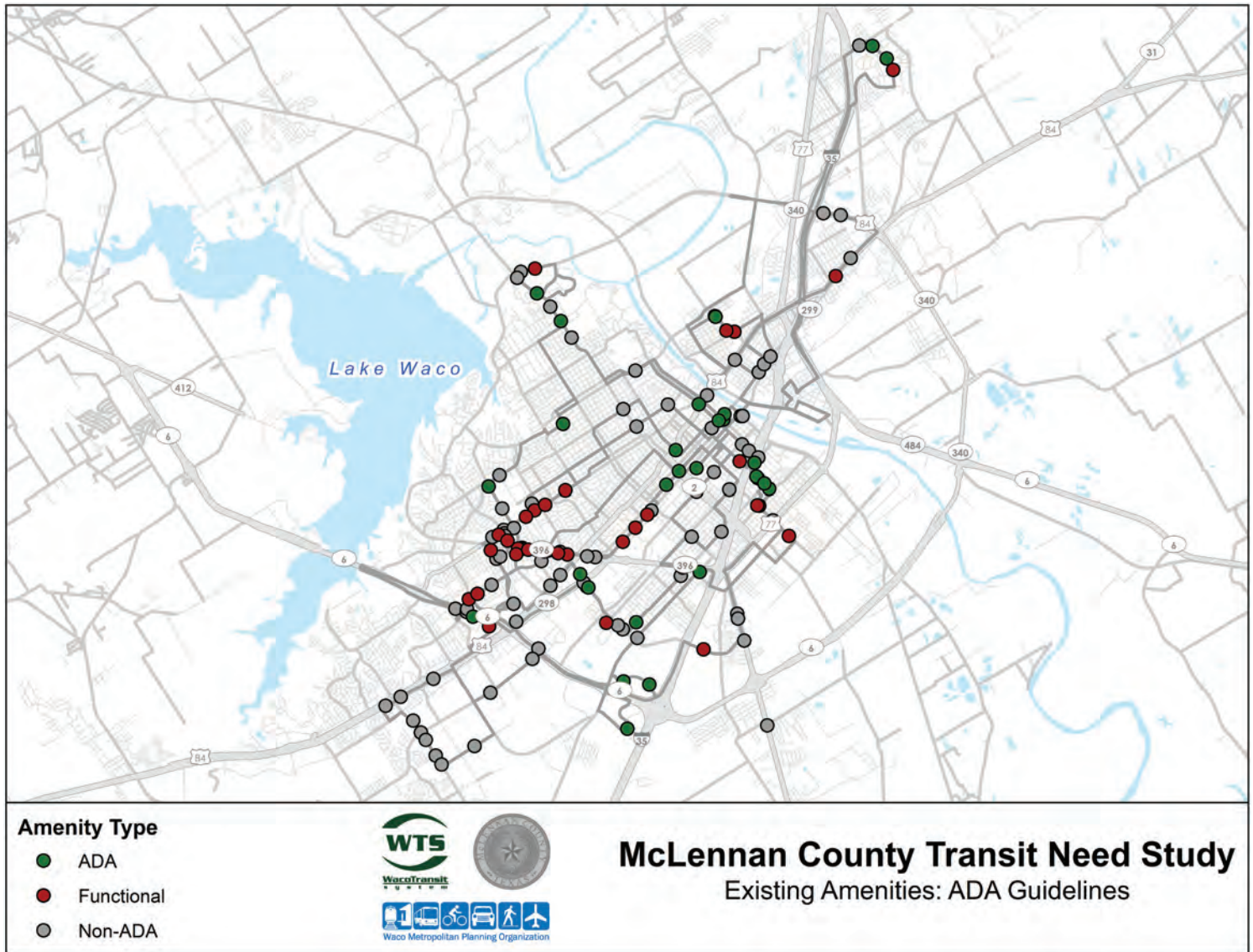
Stop/Amenity Productivity

Following the completion of the inventory analysis, each amenity point was paired with adjacent route performance segments used in this study's ridership analysis. Each segment contains pickup and drop-off data from 2016 - 2017, which were both used

to generate a total weighted ridership value. The weighted values were then used to measure segment productivity (productive, moderate, or unproductive). GIS analysis allowed each amenity point to inherit the ridership data of the appropriate/ adjacent route segment, generating amenity performance measures. The following tables (L-1

Appendix L Continued

Figure L-2: Waco Transit Existing ADA Amenities



and L-2) display the top overall performing stops and the highest performing stops that meet ADA minimum requirements.

Amenity Recommendations

Amenity Additions

In order to prioritize WTS segments for future transit amenity improvements, staff utilized segment performance values, pickup/drop-off points from

Appendix L Continued

Table L-1: Amenity Locations with Highest Ridership

Rank	Amenity Location	Ridership	Amenity Type
1	Marketplace Dr. between Kohl's/Cabela's	111	ADA
2	4901 Bosque Blvd. (Bank America/Jack in Box)	79	Bench
3	Washington Ave. at 7th Street	75	Bench
4	N. 19th St. (William Booth Apartments)	75	Shelter
5	Washington Ave. (Courthouse)	72	ADA
6	111 S. New Rd. (Wing Stop)	67	Shelter
7	S. New Rd. (Wal-Mart)	67	ADA
8	N.19th St. (HEB)	64	ADA
9	Marketplace Dr. (Men's Warehouse)	61	ADA
10	Sanger Ave. at Owen Dr.	59	Functional
11	Lake Air Dr. (entrance of HEB)	58	Bench
12	201 N. New Rd. (Lowe's)	55	ADA
13	Bosque Blvd. (Oak Crest Funeral Home)	44	Functional
14	Bosque Blvd. HEB (1301 Wooded Acres Dr)	43	Shelter
15	S. 8th St. at Baylor Ave. (BU Campus)	43	ADA
16	4th St. between Washington & Austin Avenues	38	ADA
17	Bagby Ave. at HEB (1821 S. Valley Mills Dr.)	27	ADA
18	S. 8th St. before Baylor Ave. (BU Campus)	27	ADA

2016/2017, and existing WTS amenity locations to locate areas with high transit ridership (demand) but few transit stop amenities (supply). Each route was analyzed by segment; the top ten performing segments for each route were selected and isolated from the rest of the fixed-route system. An overlay analysis was then performed, comparing top route segments containing existing amenities with areas experiencing high pickup/drop-off counts.

Segments from all 9 urban routes were then selected based on ridership performance and proximity to existing amenities, the result being high performing segments with no existing transit amenities. Figure L-3 displays areas with a high need for transit amenities (i.e. recommended segments). Table L-2 displays each segment ranked by ridership, and shows each segment's ID, route number, and segment description.

Appendix L Continued

Table L-2: Priority Transit Improvement Areas

Rank	Route	Segment	Ridership	Segment Description
1	7	.1179S	88	IH 35 Frontage (Bellmead): Wal-Mart
2	7	.1168S	61	Garrison: Doris Miller Family YMCA, KH Hines Elementary, GL Wiley Opportunity Center
3	1	1.22S	50	North MCC Highland Entrance
4	7	.1091S	50	Orchard Ln: McLane Stadium
5	7	.1100S	50	Bellmead Dr: TxDOT
6	9	9.1302S	50	Jack Kultgen Fwy: Central Texas Marketplace
7	8	8.1245S	39	W HWY 6/Owen Ln
8	9	9.1309S	38	Bagby Ave: Residences at Central Texas Marketplace
9	1	1.25S	37	South MCC Highland Entrance
10	3	3.782S	34	S New Rd: S of Walmart
11	5	5.929S	31	Bolling Dr: Air Base Rd, S TSTC Waco Campus
12	5	5.953S	31	E Lakeshore Dr: Brazos Village Apartments
13	2	2.717S	27	N 18th: Alexander Ave to Herring Ave
14	2	2.715S	24	N 18th: Wilson Ave to Rueter Ave
15	6	6.1074S	23	Bagby Ave: W Loop 340 to Marketplace Dr
16	6	6.995S	23	HWY 6 near Beverly Dr
17	6	6.1016S	23	W HWY 6: Ridgecrest Retirement & Healthcare

Amenity Thresholds

Transit amenities can increase ridership and change public perception on transit comfort, safety, and accessibility when implemented appropriately. When adding new transit amenities to a fixed-route system, it is important to utilize ridership thresholds for amenity allocation.

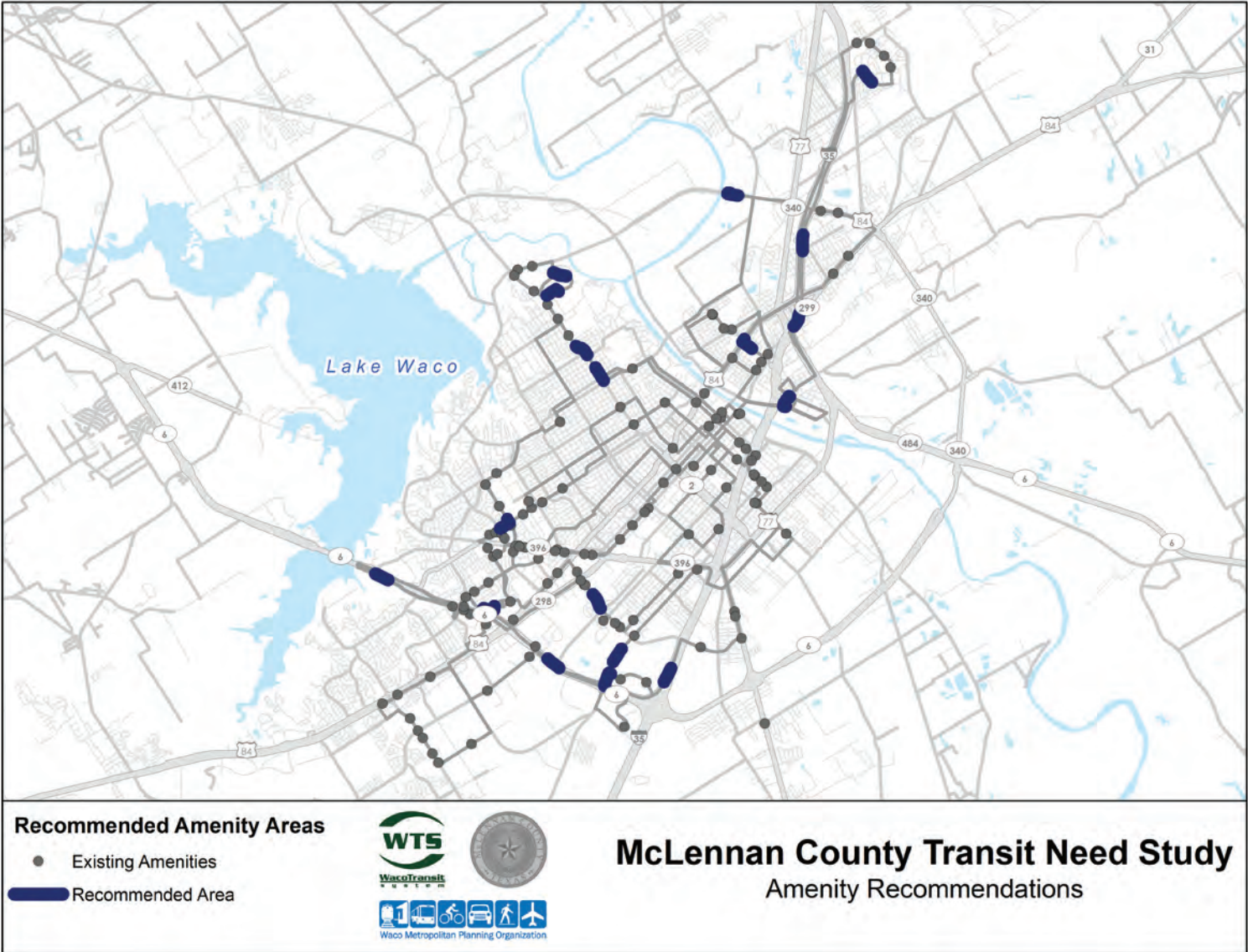
High performance stops (at least 50 daily boardings) are priority for shelter amenities. Stops with at least

25 boardings also qualify for shelters if they meet three of the following criteria:

- Adjacent to major transit attractors (commercial/entertainment center, employment area, etc.)
- Adjacent to health care and social service facilities
- Adjacent to large residential units (250+ units)

Appendix L Continued

Figure L-3: Areas With a High Need for Transit Amenities



- Adjacent to educational facilities
- Located at a route intersection
- Service frequency is typically delayed (greater than 30 minutes)

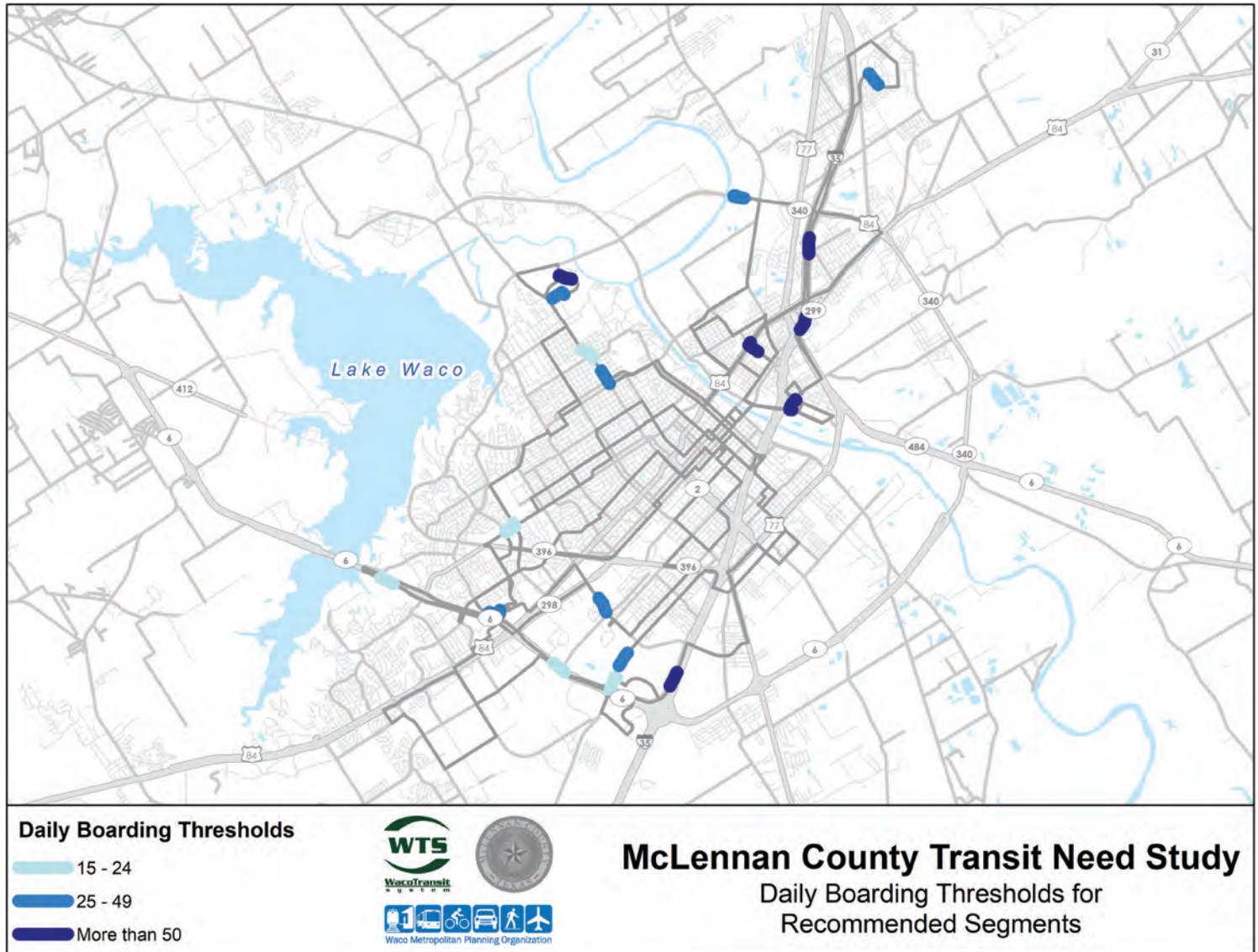
Any stop generating at least 15 daily boardings qualifies for a bench/seated area. All stops containing

amenities (bench, shelter, or both) should also offer a trash receptacle. Finally, bike racks are optional, but preferable, at any high demand stop.

When considering amenity locations, it is important to consider circumstances that may hinder implementation, such as but not limited to:

Appendix L Continued

Figure L-4: WTS Daily Boarding Thresholds for Recommended Segments



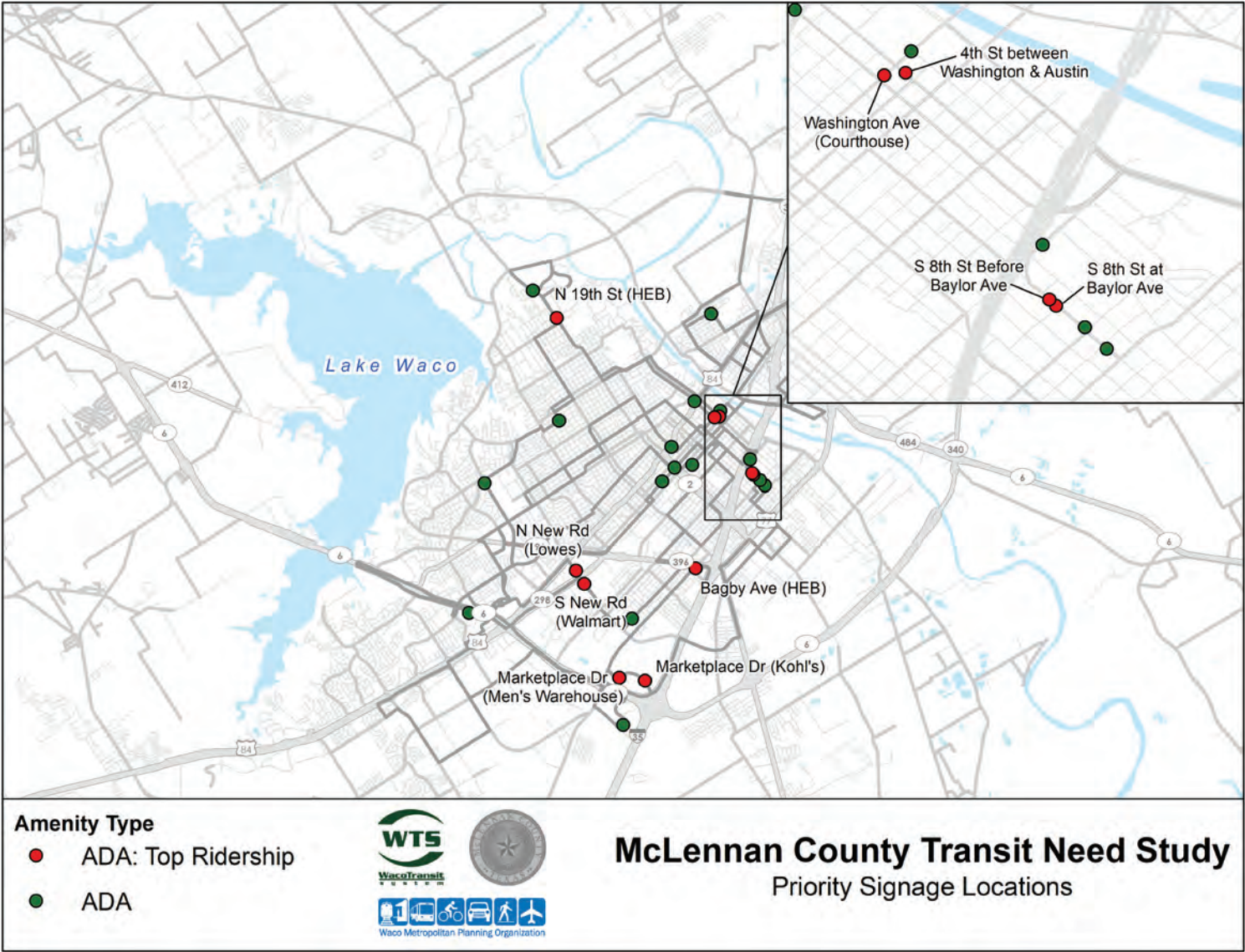
- Amenities that will negatively impact pedestrian or operational safety
- Lack of right-of-way
- Specific City, County, State, or Federal government regulations
- Excessive installation/maintenance costs

- The location is along a route which changes frequently

Figure L-4 displays the recommended areas for additional amenities based on their daily boarding thresholds.

Appendix L Continued

Figure L-5: Priority Signage Locations



Appendix L Continued

Signage Additions

Similar metrics were used to locate existing amenities prepared for transit signage additions. As previously mentioned, once signage is installed for transit service the location must be ADA compliant. Accordingly, existing amenities meeting ADA requirements were located. Figure L-5 displays all ADA accessible amenities in the WTS system. The map also highlights which locations receive the highest ridership, further prioritizing possible signage implementation locations. Even in a flag-a-stop system such as WTS, added signage at established and safe amenity locations with proven ridership can greatly benefit service. Strategically placed transit signage can influence concentrated ridership as users gain awareness of the stop(s). This prevents intermittent stopping generated by the flag-a-stop method which can increase overall efficiency.

Stop Location Placement

Stop location should consider user safety, equity, accessibility, and efficiency. For this study, it is recommended that far-side stop locations should be practiced for future amenity implementation. This refers to amenity location occurring after intersections and crosswalks, allowing transit vehicles to pass through the intersection prior to stopping and for alighting pedestrians to cross behind the bus allowing for full visibility.

Conclusion

The WTS urban fixed-route system contains a significant number of stop areas containing transit amenities (152 total). Amongst these, roughly 19% meet ADA minimum requirements, 41% can be considered Functional, and 17% contain sheltered structure. Further, these existing amenities appear to be in intuitive areas, as nearly 80% are found on “productive” route segments. However, analysis shows that areas containing significant attractors are still without any transit amenities/signage whatsoever. These areas are spread across nearly all urban routes and contain various attractor types such as residential (Brazos Village Apartments), commercial (Central Texas Marketplace, Bellmead Wal-Mart, etc.), public/educational (TSTC Campus, MCC), entertainment (McLane Stadium), and social/healthcare (YMCA, GL Wiley Opportunity Center, Ridgecrest Retirement Home).

Appendix M

STAKEHOLDER LIST

The following organizations were represented on the potential stakeholder list:

- Waco Transit
- Greyhound
- Limestone County Senior Services
- The Arc, McLennan County
- HOTCOG
- McLennan County
- MCC
- Sunny Daycare
- Friends for Life, Waco Office and Intergenerational Center
- Heart of Texas RSVP (Retired Senior and Volunteer Program)
- AVANCE Waco
- Habitat for Humanity
- Economic Opportunities Advancement
- Calvary Baptist Church with Meals on Wheels
- Just As I Am Ministries, Inc. (JAIA, Inc.)
- Christian Men's Job Corps, McLennan County
- Cornerstone Assistance Network
- Yellow Cab
- Uber
- Hispanic Chamber
- McGregor
- Lacy Lakeview
- Bellmead
- Waco Employment Resource Network (WERN)
- Caritas of Waco
- Mission Waco
- Workforce Solutions
- TSTC
- Baylor University
- African American Chamber of Commerce
- Greater Waco Chamber of Commerce
- Central Texas Senior Ministry
- Heart of Texas Homeless Coalition
- Heart of Texas Region MHMR Center
- Prosper Waco
- Society for Human Resource Management (SHRM)
- Reinforced Earth Company

Appendix N

ROUTE RECOMMENDATIONS LIST

The following is a list of recommendations to improve the service and function of system wide and individual routes throughout Waco and the surround area. Additional information and maps detailing segment productively may be found in in Chapter 2.

Table N-1: Route Recommendations

Route(s)	Recommendation
System Wide	Scheduled connections and designated transfer points may be appropriate solutions to help coordination between 5311 and 5307 services.
3 & 4	The segments with moderate boarding activity that currently provides service between 42nd Street and 34th Street using the La Colcord Avenue and Bosque Boulevard couplet may provide an opportunity to consider consolidation of the route.
3 & 4	More in-depth surveying of the passengers and interviews from the operators may reveal that most of the boarding activity that occurs along the segment between 42nd Street and 34th Street using the La Colcord Avenue and Bosque Boulevard may be better served by only operating on one of the corridors as opposed to the couplet.
3 & 4	There are two areas with severe to low boarding activity along routes 3 & 4. The first area is the segment where Route 3 operates along Wooded Acres and Richland Drive between North Valley Mills Drive and Sanger Avenue. Route 4 operates along Lake Air Drive through this segment and experiences more boarding activity. This presents another opportunity to consolidate service and provide bidirectional service along one segment as opposed to operating along a couplet.
3 & 4	The second area where there is low boarding activity is where routes 3 & 4 operate along Dutton Avenue and then Route 3 splits from Route 4 and provides service along South 26th Street, Speight Avenue, South 18th Street and back to Dutton Avenue. There is one productive segment in this area along Circle Rd. but no other areas that experience robust boarding activity. These findings indicate that opportunities may exist to improve services through this area.
3 & 4	Any proposals to reconfigure these routes should be done with care to ensure that all portions of this route remain covered by bus service so as not to lose existing passengers.
5	Removing service from highway segments along route 5 should be considered as they are not pedestrian-friendly and provide little access.
5	Route 5 has good ridership and potential for improvement if service is evaluated in conjunction with Route 7. Evaluating the routes together to determine how to realign service in a way that each route continues to provide coverage for the existing productive segments and simplifies service so that the two routes complement each other making service easier to use for existing and future passengers.

Appendix N Continued

Table N-2: Route Recommendations Continued

Route(s)	Recommendation
6	Any reconfigurations to route 6 should consider the Central Texas Marketplace, The Retreat at Central Texas Marketplace, and Baylor Scott and White Medical Center as key destinations and should optimize the stop locations and routing through these facilities.
6	Reconfiguration of route 6 could include more direct services to the few priority destinations along the route and removing portions of the route that run along SH 6.
6	An approach to improving service in the area of route 6 may be to coordinate with any major employee centers in west Waco, the Retirement and Health Care Center along SH 6, and/or other facilities whose employees/customers utilize transit frequently to provide limited or demand response services only at specific times based around their schedules.
7	Segments of route 7 running along the highways should be considered for removal, as they are not pedestrian-friendly and provide little access.
7	Route 7 could benefit from a reimagined concept that explored how to provide service to the area north of the river that simultaneously includes Route 5.
7	Eliminating the odd and even hour service and implementing a more straightforward and simple route alignment for route 7 could make the service more attractive to nearby residents
9	There is an opportunity to consider consolidation of route 9 that currently travels through the area using the La Salle Avenue and Primrose Drive couplet.

