

Fitchburg Intracity Transit Feasibility Study

Transit Plan

Final Report

City of Fitchburg, Wisconsin



April 2015

SRF No. 8679

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Introduction and Existing Conditions

The City of Fitchburg is a community in South Central Wisconsin that comprises approximately 35 square miles south of the City of Madison in the Madison Metropolitan Area. Fitchburg is home to a diverse set of land uses, including relatively dense urban areas with predominantly multifamily housing and commercial areas, to rural, agricultural, and preserved lands as one travels in a southerly direction from Madison. About 35 percent of the land area is considered urban, with the greatest diversity in housing located in the northern portion of the city. It is also a diverse community, with the highest percentage of minority residents in Dane County. The population of Fitchburg is approximately 25,600 and is projected to have continued steady growth in future years, adding 4,900 people per decade. Additionally, portions of the Town of Madison will be annexed by Fitchburg between now and calendar year 2022. Fitchburg has also set forth a 50 year growth boundary in its comprehensive plan that will aim to preserve open space and rural areas.

Existing Transit Services

Public Transit

The City of Fitchburg contracts with the City of Madison (Madison Metro Transit) to provide its transit service. This arrangement is through an intergovernmental agreement in which Fitchburg contributes to the local share (exclusive of passenger revenue and state and federal aid) of capital and operating expenses associated with each service hour. Much of the transit service in Fitchburg is oriented to downtown Madison and the University of Wisconsin campus. These are major generators of transit ridership and make up a significant portion of commuter traffic with origins in Fitchburg. This service is inclusive of both local routes that connect to Madison Metro service at the South and West Transfer Points, and express routes that operate only during the morning and afternoon traditional peak commute times. Two local routes provide all-day circulator service within Fitchburg (Route 52 and Route 40), and provide timed connections at Madison Metro transfer points. Route 59 also provides all-day local service on weekends and serves the western portion of the city. A summary of existing Madison Metro bus routes is presented in Table 1. In addition, Routes 18 and 19 provide weekday, all-day service along Red Arrow Trail in Belmar. Route 18 also operates on weekends.

In addition to fixed route services, Madison Metro coordinates and oversees paratransit in accordance with the Americans with Disabilities Act (ADA). ADA complementary paratransit serves people with disabilities who are unable to use a fixed route bus. Paratransit service provides service to origins and destinations within $\frac{3}{4}$ mile of a bus route. Limited stop or commuter routes are excluded from this rule. There are currently large portions of central-urbanized Fitchburg that are outside of the paratransit service area on weekdays as

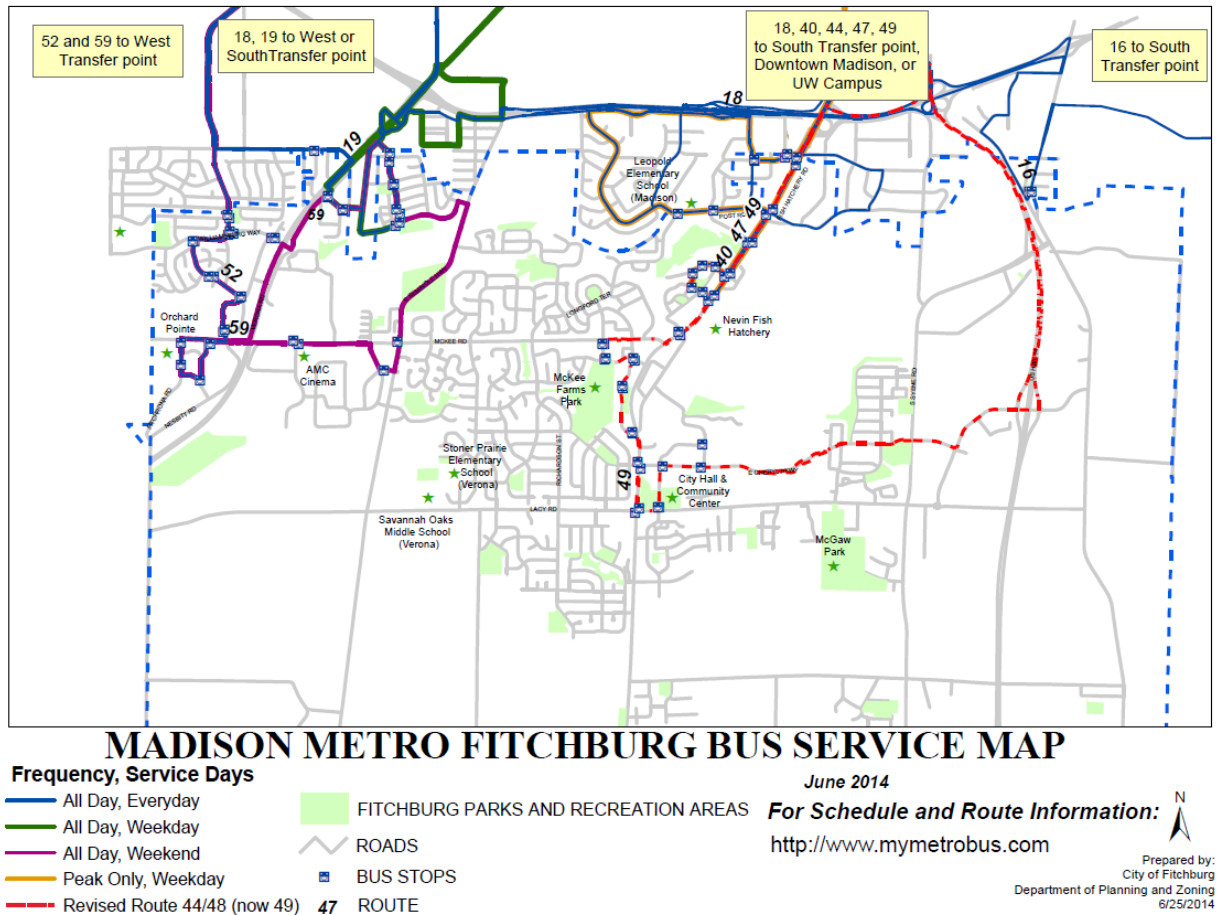
the service corresponds to Route 59. Also, near Fish Hatchery Road, the southern boundary of the paratransit service area is Glacier Valley Road. Therefore commercial and civic areas near Lacy Road and Cheryl Parkway are currently unserved by paratransit. A map of existing transit service in Fitchburg is shown in Figure 1.

Table 1. Madison Metro Service Chart

Route	Description	Weekday Peak	Weekday Off Peak	Weekends/Holidays
16	Links South and East Transfer Points, serves small northeast portion of Fitchburg on CR MM	Yes	Yes	Yes
18	Links South and West Transfer Points, serves Beltline Highway/Frontage Roads, and Greenway Cross.	Yes	Yes	Yes
19	Allied Drive and vicinity to Downtown Madison	Yes	Yes	No
40	Greenway Cross, Post Road, Hatchery Hill – North-Central Fitchburg circulator/South Transfer Point	Yes	Yes	Yes
47	Arbor Hills, Greenway Cross, Cahill Main, to/from Capitol Square	Yes	No	No
49	East Fitchburg express service to downtown Madison	Yes	No	No
52	Western Fitchburg circulator route, connects to West Transfer Point	Yes	Yes	No
59	Western Fitchburg, Allied Drive weekend circulator, connects to West Transfer Point	No	No	Yes
75	Epic Systems/Verona, limited stops in Fitchburg	Yes	No	No

Base fares for Madison Metro Transit are \$2.00 for the general public, \$1.25 for youth age 5-17, and \$1.00 for older adults age 65 and over. Madison Metro Transit also offers day passes, monthly passes, low income passes, and multiple-ride cards. Base fares for paratransit are \$3.25, and multiple ride passes are available. Madison Metro Transit also has agreements with human service agencies to purchase passes and tickets, and offers fare passes as an employee benefit package for participating companies.

Figure 1. Fitchburg Transit Service



Human Service and Specialized Transportation

In addition to public transit service operated in Fitchburg by Madison Metro Transit, there are other services that make up the rest of the transportation network. This includes a network of private transportation companies, human service transportation providers, and volunteer services. In addition to the program supported services listed here, numerous private taxi companies operate in the Madison area, and operate on a metered or zone fare basis.

Dane County Human Services

The Adult Community Services Division of the Dane County Department of Human Services (DCDHS) administers wheelchair-accessible routed group ride and demand-responsive services for seniors and people with physical or developmental disabilities. DCDHS contracts with private service providers. Most services collect fares on a donation basis.

Rural Senior Group Transportation Service and Rural Access for Persons with Disabilities

Rural Senior Group Transportation Service (RSG) provides regularly scheduled weekday routed group trips for seniors (age 60 and older) who live in their own home or apartment and reside outside Madison, Middleton, or Monona. Rural Access for Persons with Disabilities (RAPD) extends access to RSG to people with disabilities. Trip days and times are arranged by area senior centers or senior service organizations which work with DCDHS staff and are responsible for receiving passenger reservations and cancellations. The senior center or organization then notifies the contracted service provider of the passenger schedules and requests for accessible vehicles.

Retired Senior Volunteer Driver Program (RSVP)

DCDHS also coordinates a volunteer driver program called RSVP that provides individual medical trips for adults age 60 and over. They also operate a similar program focused on veterans' transportation. RSVP also delivers meals to homebound people.

Other Transportation Services

- Caregiver Transportation Assistance Program
 - Provides fare-free transportation to older adults and caregivers to services that enhance their ability to provide care (support groups, workshops, counseling).
- Rideline, and Specialized Transportation Services
 - Workforce and vocational transportation for people with developmental or mental health disabilities.

YW Transit

The YWCA operates the YW Transit program, which includes a personalized transportation service called JobRide. JobRide transports low-income individuals who do not have access to other services like fixed route bus or paratransit to work and employment related activities.

Non-Emergency Medical Transportation

The Wisconsin Department of Health Services provides non-emergency medical transportation to covered services for certain Wisconsin Medicaid and BadgerCare Plus members who have no other way to get a ride to a covered service. This service is a state-wide program. NEMT is available 24 hours per day, every day of the year, but patients must schedule their rides ahead of time. Rides are provided with a combination of specialized

medical vehicles (typically cutaway vans) as well as ambulances and public common carrier vehicles (buses, paratransit, and taxis).

Project Purpose

While Dane County has a robust transportation network, travel within the City of Fitchburg without an automobile has limitations depending on individual ability, time of day, and the quality of the pedestrian environment. There are many workplaces, parks, municipal buildings, and businesses that have no access to public transit. Additionally, connecting to many of these destinations in an east-west orientation is difficult, as there are no regularly scheduled transportation options. The Madison Area Transit Development Plan identifies a fixed route service that would be able to fill in some of these gaps, however that comes at a considerable cost to the City of Fitchburg. This project evaluates the feasibility of a fixed route service option, along with other modes of transit to determine which will serve Fitchburg best for the near term. The purpose of the study was to identify and evaluate options to fill these service gaps and recommend an effective and feasible option to address the service needs.

Goals and Objectives of the Transit Feasibility Study

1. Establish a transportation option that enhances mobility and access within the City of Fitchburg, and focuses on the urban service area
2. Design a service concepts that provides better connections to community facilities such as parks, libraries, city hall, and the Senior Center
3. Determine if transportation service is feasible given the financial and staff resources available in the City of Fitchburg
4. Clearly identify implementation steps

Assessing Demand for Transit

This section addresses the market for transit service, examining the demographic characteristics of the City of Fitchburg and reviewing some of the key destinations in the community that were prioritized for transit access. Additionally, the information gathered from the U.S. Census and local planning documents were used to model several estimates of transit demand.

Fitchburg At-a-Glance

- Total population: approximately 25,600
- 7.6 percent of the population is over age 65
- 32 percent of households have children
- 53 percent of households are owner occupied, 47 percent of households are renter occupied
- 15 percent of Fitchburg residents have income levels below the poverty level
- Fitchburg is a diverse community with a 31 percent minority population
- Approximately **385,000** transit trips begin or end in Fitchburg each year.
- Fitchburg has an extensive trail network with three state trails and six local bicycle paths

Transit Market Characteristics

Most key destinations are located in the northern, urbanized portion of Fitchburg. This includes major employers (> 50 workers), schools, medical clinics and offices, and community parks. Multiple civic sites such as the police station, city hall, library, and senior center are located in complex on Lacy Road east of Fish Hatchery Road. These destinations are generally concentrated on major roadway corridors. In the western portion of Fitchburg there is more intense development along U.S. 18/151, and in the eastern portion of Fitchburg development is concentrated along Fish Hatchery Road. This is also where transit service is located, and oriented to the regional Madison Metro Transit system. With some exceptions, these commercial areas are not directly connected to lower density residential areas by transportation modes other than the automobile. These key destinations in Fitchburg are mapped in Figure 2, along with the existing fixed route transit service. While many of these key destinations are located on transit routes, the times of day and stop locations are limited creating gaps in access.

Additionally, Figure 3 shows the distribution of the population of older adults in Fitchburg. Of note is that the greatest concentration of older adults is located in the neighborhood around McKee Farms Park in central Fitchburg. This is a medium-density residential area

that does not have all-day access to transit, and lacks pedestrian connectivity to some of the key destinations along Fish Hatchery Road.

Figure 2. Key Destinations in Fitchburg

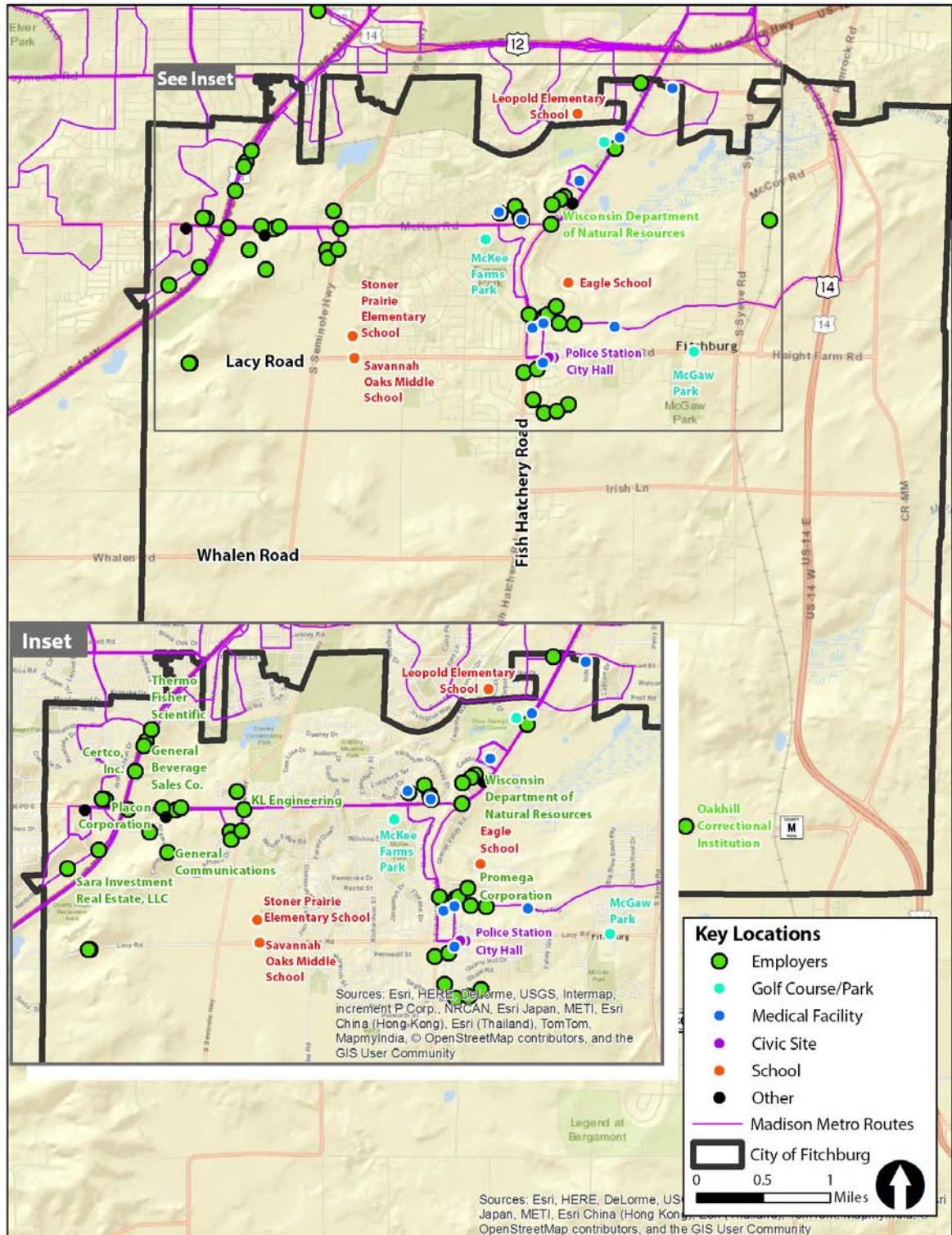
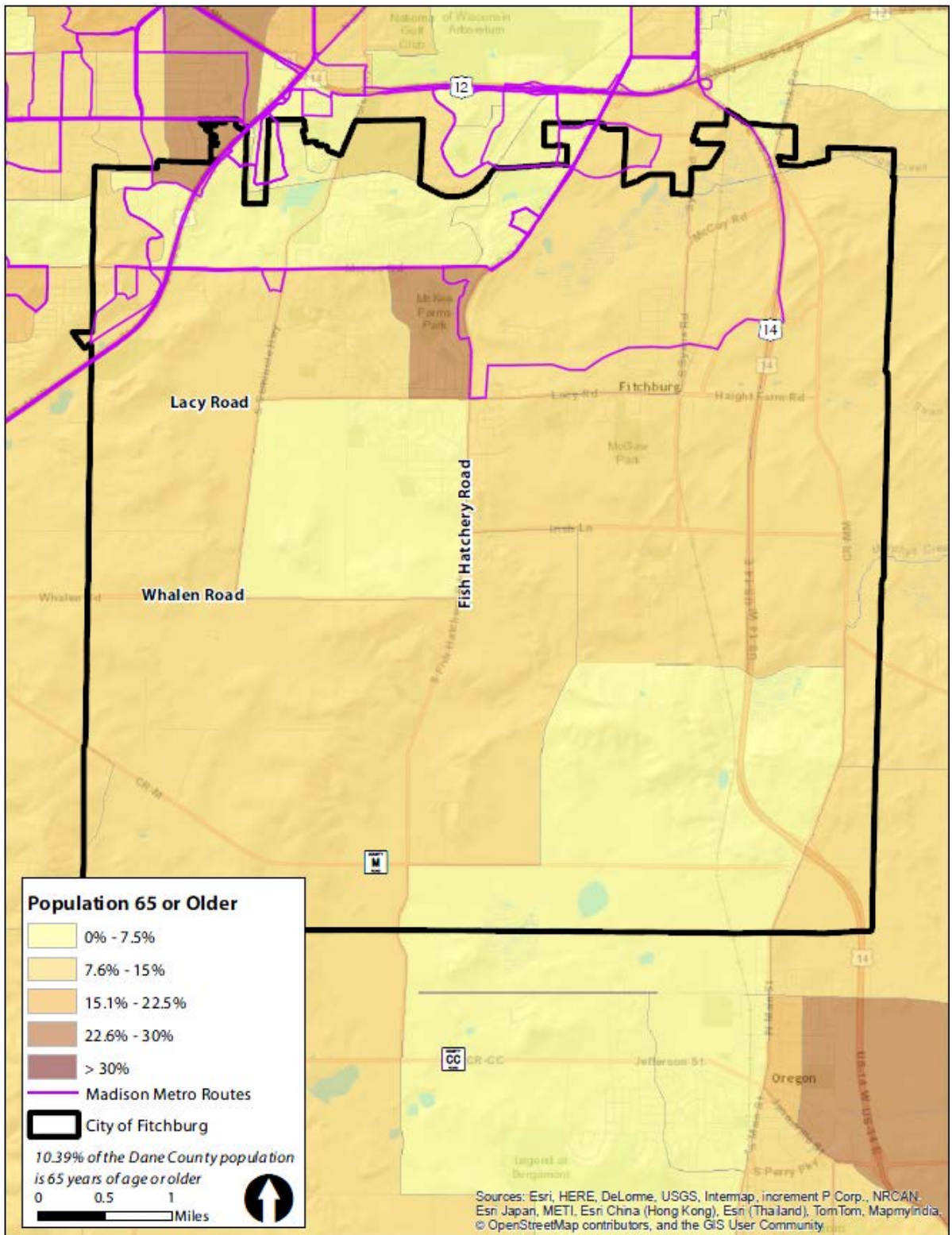
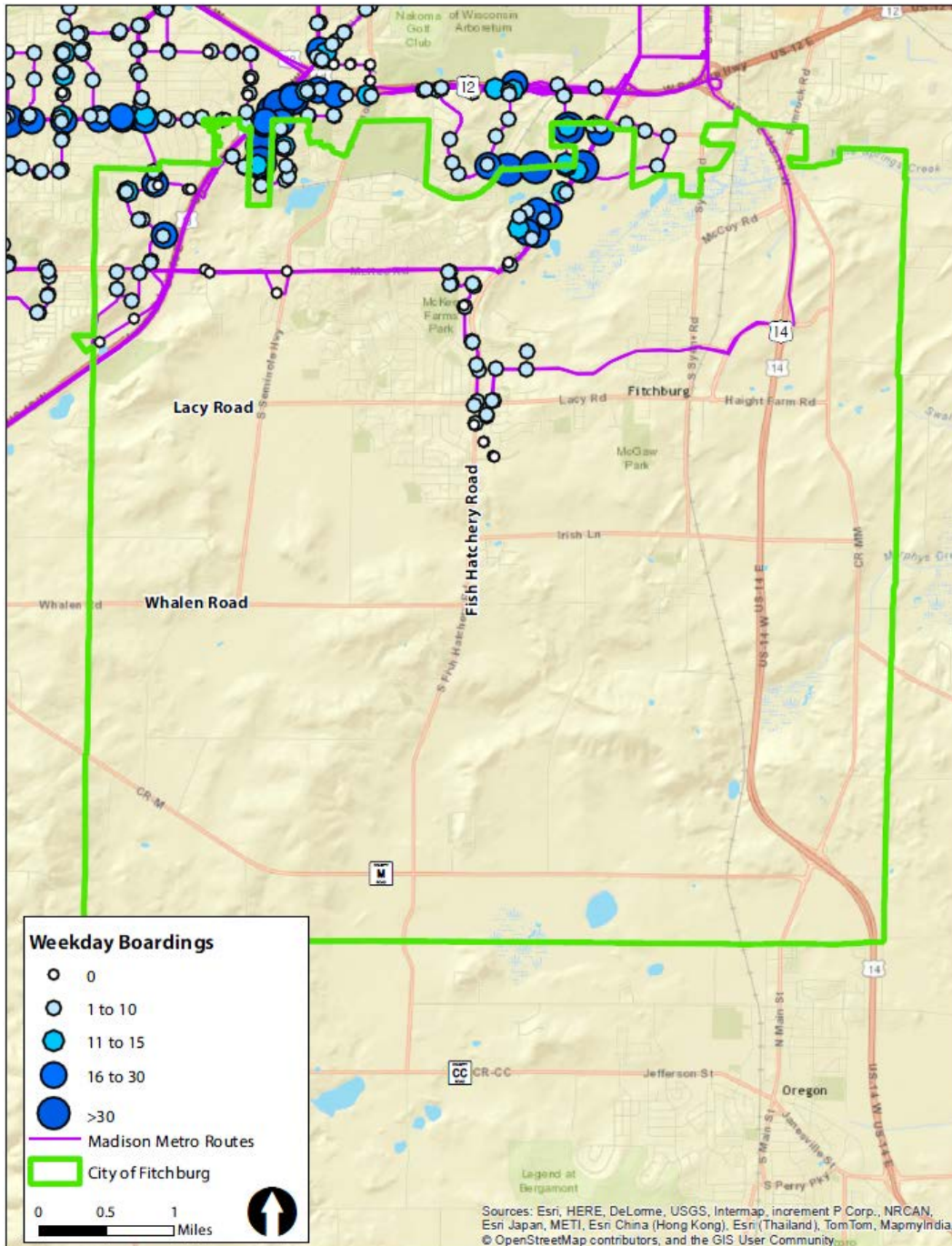


Figure 3. Fitchburg Senior Population



The use of existing transit service was an important consideration when developing transit options. Current boardings on Madison Metro Transit service are mapped in Figure 4. This was used in combination with the map of key destinations to determine appropriate connection points for transit service, and to assess which parts of the community are already well served by transit. The 385,000 daily transit trips that begin or end in Fitchburg all use these bus stop locations.

Figure 4. Weekday Transit Boardings



Transit Supportive Land Use

Service coverage measures the area within walking distance of transit stops. The more area covered by transit, the greater the geographic availability of transit. Industry standard minimum densities are used in this analysis.

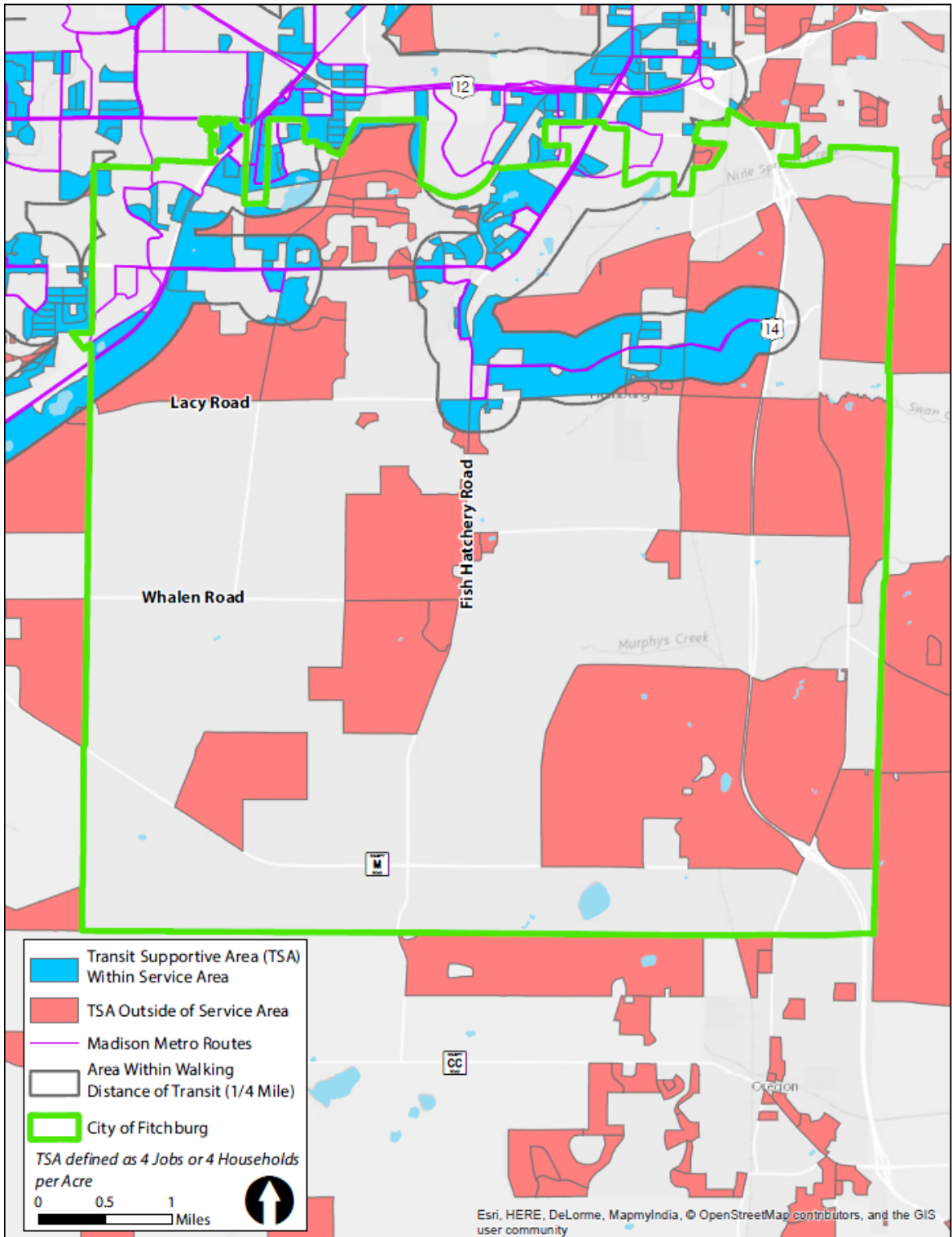
A residential density of four housing units per gross acre is considered the minimum density capable of supporting a basic level of fixed route transit service (at 60-minute headways). An employment density of four or more jobs per acre is also considered capable of supporting the basic level of service. Places that meet this threshold are referred to as transit-supportive areas in this analysis. The City of Fitchburg's transit supportive areas are shown in Figure 5. Areas with blue shading are transit supportive areas that are within ¼ mile of transit service (considered walking distance), and areas with red shading are transit supportive areas currently unserved by transit. This analysis is limited in that it does not take into account pedestrian connectivity. Areas that do not have transit supportive densities may be best suited for transportation modes other than a fixed route bus such as demand response service or park-and-rides. Approximately 20 percent of the transit supportive land area in Fitchburg has transit service.

Connection to Previous Work

This high level assessment of the transit market supports previous planning efforts that indicate a gap in service coverage within Fitchburg. The City of Fitchburg Transit Plan completed in 2010 conducted a community transit survey and discussed future growth and development patterns. While the majority of service needs are oriented to the University of Wisconsin campus and downtown Madison, there was an additional need identified for trips within the city. Also, there were many respondents who indicated that they were not currently transit users, but would use transit if it better met their needs.

In addition to the Fitchburg crosstown route that is listed in the Madison Area Transit Development Plan, the Dane County Coordinated Public Transit – Human Services Transportation Plan cites the need to expand service to areas without public transit service as a key regional need. To summarize, the existing planning and high level assessment of community conditions are consistent in showing some level of need for additional investment in transit. Demand estimates further quantify the gap in service.

Figure 5. Fitchburg Transit Supportive Areas



Demand Estimates

Prior to developing transit alternatives for the City of Fitchburg, quantitative estimates of demand were developed to serve as a guide for the levels of transit service that the community can support, and informing project stakeholders about gaps in the existing scope of transit service. Alternative methods of estimating overall transit demand within Fitchburg were tested to gauge the reasonableness of the results and to identify the best method to advance for further consideration in the study. The demand estimation methods are detailed and the calculations for each approach are noted (full calculations are shown in Appendix A). These methodologies include:

1. The Trip Rate Demand Model, which was developed for the Minnesota Department of Transportation's 2011 *Greater Minnesota Transit Investment Plan*;
2. The Peer System Passengers Per Hour Model, which was also developed for the MnDOT 2011 Greater Minnesota Transit Investment Plan; and
3. A TAZ-level Modal Split Model, based on the Madison MPO travel demand model

Estimation of Current Year Transit Demand

1. Trip Rate Passenger Demand Model

Methodology

In terms of demographics and travel behavior, the State of Minnesota has many similarities to the State of Wisconsin. Additionally, historic levels of transit investment in small and mid-sized urban areas from state and federal funding sources have been similar, offering commonalities in their local policy environments. In order to respond to legislative direction, SRF developed for the Minnesota Department of Transportation (MnDOT) its own demand model as part of the *Greater Minnesota Transit Investment Plan* to estimate future rural transit demand across the state. The model used methods previously developed in other states around the country, but was specially tailored to be more responsive to the diversity of transit services and service areas found across Greater Minnesota.

Referred to as the Trip Rate Passenger Demand Model, this model has two basic components:

1. All Greater Minnesota counties have a base level of public transit need which can be adequately represented by looking at the transit dependent population. The Arkansas Model¹, factored to Minnesota trip utilization, is used as the basis for this component.
2. In counties with a large urban center (population above 50,000), an additional component of transit need is present which accounts for expanded markets for

¹ Source: SG And Associates and Governor's Task Force – Arkansas, Arkansas Model, 1992.

commuters, students, and general travelers. The Mobility Gap Model² is used as a starting point for this component, and is then factored to calibrate to current large urban use patterns.

The Trip Rate Passenger Demand Model was calibrated using year 2009 transit trip rates. The initial information from the Arkansas Model and Mobility Gap Model were factored to represent the 100th percentile passengers per capita rates found across all Greater Minnesota transit systems in 2009. The Mobility Gap Model trip rate was additionally factored so that the combined results represent the levels of need currently being met in large urban areas, per utilization data from MnDOT (2008) and the results of an on-board user survey.

Figure 6. Trip Rate Demand Model Inputs

Annual Demand by County	=	Population 65 years or older	X	4.2
	+	Population with disabilities under 65 years	X	15.0
	+	Low-income, non-disabled population under 65 years	X	7.0
	+	Zero-vehicle households in counties with major urban centers and special service conditions counties	X	3 x 365 x P

(P varies by urban center or special service condition county to calibrate to current demand, ranges from 20 to 50%)

Calculations

As detailed below in Table 3, application of the Trip Rate Demand Model to 2008-2012 American Community Survey (ACS) statistics for the City of Fitchburg, using a P-Factor value of 0.50, results in a current annual demand estimation of approximately 405,000 trips.

2008-2012 ACS Population Data	Population Totals	Trip Rate Demand Model Multiplier	Current Trip Demand
Population 65 years or older	4663	4.2	19,585
Population with disabilities under 65	1382	15	20,730
Low-income, non-disabled population under 65 years	1954	7	13,678
Zero-Vehicle HHs	642	547.5 (3*365*P)	351,495
P Factor	0.50	-	-
TOTAL			405,000

² Source: LSC Transportation Consultants, Montana rural Passenger Needs Study, 2001.

2. Peer System Passengers per Hour Model

Methodology

The second demand estimation methodology tested is the Peer System Passengers per Hour Model, which was also developed as part of MnDOT's *2011 Minnesota Transit Investment Plan* in order to produce credible future transit service hour estimates by county for Greater Minnesota. This model incorporates multiple peer group categories; large urban, medium urban, small urban, rural-high service levels, and rural-low service levels. The primary inputs for the Peer System Passengers per Hour Model are 2008 service hours by transit system (level of service), current population estimates by county, and future population projections by county.

To develop the service hours projections, a target rate for service hours per capita for each transit service peer group was applied to the future population of each county based on population. Table 3 lists the target service hours per capita rates for each county analyzed under the Service Hours Model estimates.

Table 3. Service Hours per Capita and Passengers per Hour Target Rates by Peer Group

Peer Group	Target Rate	Passengers per Hour Target
Large urban (Duluth, Rochester, St. Cloud)	1.50-1.75	20
Medium urban (Moorhead, Mankato, La Crescent, East Grand Forks)	1.00	15
Small urban	0.75	10
Rural – High service level	0.75	5
Rural – Low service level	0.50	3

Calculations

In order to effectively apply the service hours per capita target rates to the developed and developing areas within the City of Fitchburg, an analysis of household density per acre (2010 Households by Transportation Analysis Zone (TAZ)) was completed. A majority of TAZs north of Lacy Road within the City of Fitchburg fall above the standard transit-supportive threshold of three households per acre. Subsequently, all TAZs north of the Lacy Road corridor (2010 population: 19,459) were coded as transit supportive, and the medium urban target service hours target rate (1.0) was applied to this area of the City of Fitchburg. The TAZs south of the Lacy Road corridor (2010 population: 5,744) exhibit a much lower development density, and the small urban service hours target rate (0.75) was applied to this sub-area of the city. Finally, a passenger per service hour target rate, based on performance standards of peer transit systems, was applied to both geographic groups to arrive at a

current trip annual demand estimate of approximately 435,000 trips. Results of this methodology are also detailed below in Table 4.

Table 4. Service Hours Model Totals – City of Fitchburg

2010 City of Fitchburg Population (By TAZ)	Population Totals	Service Hours Target	Current Service Hours Needs	Passengers Per Service Hour Targets	Current Annual Trip Demand
Transit Supportive Area (North of Lacy Road)	19,459	1.0 (Medium Urban Peer Group)	19,459	20	389,180
Undeveloped Area (South of Lacy Road)	5,744	0.75 (Small Urban Peer Group)	4,308	10	43,080
TOTALS	25,203	-	23,767	-	435,000

3. TAZ-Level Modal Split

Methodology

The final demand estimation methodology analyzed the household population data and forecasted growth. The existing household population in the City of Fitchburg (9,962 households – 2009-2013 ACS) was multiplied against the average number of daily household trips for the dominant residential land uses in the City of Fitchburg (Madison Metropolitan Area and Dane County 2030 Regional Transportation Plan) and annualized to reach an annual trips figure. Finally, a two percent mode share (City of Madison 2030 Transportation Plan (Dane County outside of Madison); City of Fitchburg 2030 Transportation Plan) was applied to reach an annual trip demand.

Calculations

Based on the previously detailed methodology, the TAZ-level modal split analysis results in a current annual demand of approximately 475,000 trips. To review, existing transit ridership is approximately 385,000 trips per year. Altogether this would indicate a theoretical latent demand of 80,000 – 100,000 trips per year, supporting an argument for expanded service in Fitchburg to fill in critical gaps.

Conclusion

Three alternative methods for estimating current transit demand for Fitchburg were tested to determine the reasonableness of the estimates compared to current transit utilization and to

identify a method to advance for the analysis of service options to come later in the study, Based on this analysis, we conclude that all three methods of demand estimation are producing fairly similar results. In order to keep the analysis consistent with local planning approaches, the TAZ Level Mode Split technique should be used to estimate future year transit demand levels.

Summary of Demand Estimation Results

Based on the results of all three transit demand estimation methodologies, which closely correspond to and validate each other, the consultant team estimates a current year theoretical demand estimate of 475,000 annual transit trips. Based on forecasted growth rates within the Madison MPO TAZs from the regional travel demand model (1.11 percent per year), the estimate of 2015, 2020, and 2030 annual trip demand is listed below in Table 2.

Table 5. Annual Transit Demand Estimation Results

Year	Annual Trip Demand Estimate
2015	500,000
2020	525,000
2030	590,000

Exiting ridership in Fitchburg, estimated at about 385,000 annual trips, includes many daily express bus routes providing direct connections to major employment and education centers in Madison and Verona, and local service in central Fitchburg provided by Madison Metro Route 40. Existing ridership also includes daily boardings in parts of Fitchburg that border the Allied Drive and Dunn’s Marsh neighborhoods where transit service is provided by two Madison Metro local routes.

Transit Service Concepts

Fitchburg Transit Mode Definitions

Three different approaches to meeting transit needs in Fitchburg are presented for evaluation. All are considered public transit, meaning that each is fully accessible to people with disabilities, open to the general public, and has a set schedule and fare structure; however, each has different implications in terms of ridership and cost. While each mode could realistically be deployed in Fitchburg, they will be presented in the context of several screening criteria that will allow local officials to identify a preferred strategy and set of near-term outcomes.

Fixed Route Transit

In the Madison Region, fixed route public transit services are operated by Madison Metro Transit and the City of Monona. Fixed route service is provided on a repetitive, scheduled basis along a specific route with vehicles stopping to pick up and deliver passengers to specific locations; each fixed route trip serves the same origins and destinations. Fitchburg does not operate a municipal transit system on its own, so it would make the most sense to coordinate with an existing regional provider or contract with a private transportation company for transit services. Preliminary cost and ridership estimates are based on the assumption of hourly weekday service operating from 6:00a.m. to 10:00p.m. For the transit feasibility study, two governance and operating models are presented:

Option #1: Intergovernmental Agreement

In this option, the new Fitchburg route would be operated by Madison Metro Transit (Metro) under an intergovernmental agreement with the City of Madison. The service product would be a traditional Metro bus with accompanying ADA complementary paratransit.

Option #2: Contracted Service

In this option, the new Fitchburg route would be operated by a private contractor. The City of Fitchburg would be the contract manager, and the fiscal agent for state and federal funds. ADA complementary paratransit would be provided in a coordinated manner among Metro providers and the selected contractor based on geographic area.

Flexible Bus

A flexible bus – commonly referred to as “flex-route” or “deviated fixed-route” – is a transit mode that operates as a hybrid of a fixed-route bus and a demand response service. There are several scheduled time points strategically placed along a travel corridor, and the vehicle

will operate curb-to-curb service within a set geographic area. If the geographic area exists as a ¾ mile or greater buffer, it is deemed to be equivalent to ADA complementary paratransit. Rides are dispatched as they are for paratransit service, and still have conventional bus stops and shelters corresponding to the time points. For preliminary ridership and cost estimates this service is assumed to operate on weekdays only from 6:00a.m to 10:00p.m. and connect Metro’s South and West Transfer Points. Approximately three vehicles would be required to operate hourly headways.

Option #1: Intergovernmental Agreement

In this option, the flexible route would be operated under the scope of one of Metro or Dane County’s existing paratransit service contracts, and the City of Fitchburg would enter an agreement with one of these agencies for purchased transportation.

Option #2: Contracted Service

In this option, the new Fitchburg flexible bus would be operated by a private contractor. The City of Fitchburg will be the contract manager, and the fiscal agent for state and federal funds.

Shared-Ride-Taxi

Shared-ride-taxi or “demand response” service is defined by FTA as any non-fixed route system of transporting individuals that requires advanced scheduling by the customer, including services provided by public entities, nonprofits, and private providers. Service is provided curb-to-curb and there are no formalized schedules. In Wisconsin, these services are provided by taxi companies or rural transportation providers. The vehicles do not operate over a fixed route or on a fixed schedule except, perhaps, on a temporary basis to satisfy a special need. The vehicle may be dispatched to pick up several passengers at different pick-up points before taking them to their respective destinations and may even be interrupted en route to these destinations to pick up other passengers.

Under this option, the City of Fitchburg would contract with a private or nonprofit agency to provide the service. The City of Fitchburg will be the contract manager, and the fiscal agent for state and federal funds.

Private Transportation Technological Platforms

New technological platforms for transportation have become common in many cities, the most notable of which are Uber and Lyft. These are platforms in which private vehicle owners and livery companies provide point-to-point transportation. Passengers request a ride via a smartphone app, which is also used to track vehicles and pay fares. Taxi companies have developed similar platforms where passengers can hail rides using mobile devices, such as Curb (formerly Taxi Magic) and iHAIL. Gradually these services are becoming an integral part of the private transportation network, and for some trip purposes supplement taxi and

public transit. For basic services, fares are comparable to metered taxi fares (considerably higher than public transit), and greater for livery vehicle or shared van services. Additionally, there are no regulations for accessibility and the use of these services requires a credit card. Fares also vary based on a proprietary algorithm that balances supply and demand known as surge pricing.

For the above reasons vehicles that use Uber and Lyft are not considered public transit modes. However, many of its elements can be deployed in a public transit setting. Demand responses modes (flexible bus, shared-ride-taxi, etc.) can be dispatched using smartphones or online using existing software packages. Also, vehicles can be tracked in real-time using automatic vehicle locators. In addition to purchasing software packages, transit agencies have partnered with colleges and universities to develop transit apps as a part of student projects at a considerably reduced cost. It would be recommended to further explore incorporating these customer interfaces into a public transit project.

Service Design Assumptions

Fixed Route Transit Service

Fixed route service can operate with a focus on regional connections or a focus on service within Fitchburg. Regional service would operate as specified in the Transit Development Plan and connect the Metro South and West Transfer Points. Intracity service would concentrate on serving those portions of Fitchburg's urban service area that lack access to public transit, with timed transfers to Madison Metro Transit's all-day fixed routes in Fitchburg (e.g., Route 52 and Route 40). For comparison, service levels will be at an hourly frequency from 6:00a.m. to 10:00p.m. on weekdays.

Fixed route performance characteristics:

- Metro Transit operating cost:
\$95 per revenue hour - \$113 per revenue hour, annualized to roughly \$730,000 to \$830,000.
- Contracted cost per hour: \$80/revenue hour
- Local share of operating expenses is approximately 30 percent
- Minimum fleet requirement of two buses
- Includes ADA complementary paratransit
- Metro Transit service requires 40 ft. heavy duty transit vehicles, contracted service requires large cutaway chassis vehicles
- 10-15 passengers per hour

Flexible Bus Service

Flexible bus service can operate with a focus on regional connections or a focus on service within Fitchburg. Regional service would cover a geographic area similar to that of a regional fixed route, connecting to Madison Metro Transit Transfer Points. Scheduled time points will be located near the following locations:

- McKee Road and Fitchrona Road (Super Target Area)
- McKee Road at Seminole Highway
- McKee Farms Park Area
- Fitchburg Community Library
- Hatchery Hill Area
- Northern Portion of Fish Hatchery Road

Intracity service will serve similar areas within Fitchburg, but not continue with routing into Madison. All service will include timed transfers to Madison Metro Transit's all-day fixed routes in Fitchburg (ex., Route 52 and Route 40). For comparison, service levels will be at an hourly frequency from 6:00a.m. to 10:00p.m. on weekdays.

Flexible bus performance characteristics:

- Operating cost falls within the range of \$45 to \$95 per revenue hour depending on the contractor. Smaller human service transit providers are on the low end of this scale; whereas Madison Metro's in house paratransit service is on the highest end. Annualized costs are roughly \$550,000 to \$1,140,000.
- Local share of operating expenses is approximately 30 percent
- Offers service that is equivalent to ADA minimums.
- Vehicles are medium duty cutaway chassis buses (See Figures 11 and 12)
- Minimum fleet requirement of three vehicles (due to longer travel times and more indirect routing compared to fixed route service)
- 5-7 passengers per hour

Shared Ride Taxi Service

Shared Ride Taxi service would be limited to the urban service area of Fitchburg, however it is the only transit mode with potential to serve rural portions of the community. Service is assumed to run from 6:00a.m. to 10:00 p.m. and can link with fixed route transit on demand.

- Operating cost is approximately \$35 per revenue hour, annualized to roughly \$420,000
- Local share of operating expenses is approximately 30 percent
- Offers service that is equivalent to ADA minimums.
- Vehicles are medium duty cutaway mini-buses (8 passenger), supplemented by minivans or sedans.
- Minimum fleet requirement of three vehicles (due to geographic coverage)
- 3-5 passengers per hour

Regional Plan Citations

All of the above mentioned transit modes are consistent with strategies and recommendations in the 2013-2017 Transit Development Plan (TDP) for the Madison Urban Area and the 2013 Coordinated Public Transit -Human Services Transportation Plan for Dane County.

TDP Recommendations

Under the category of Transit Planning and Service Development, the TDP recommends to extend service to transit supportive areas that are currently unserved by transit, particularly low income neighborhoods, and also introduce new commuter express service. Additionally, the TDP recommends exploring the feasibility of point-deviation (flexible bus) and other alternative service delivery methods in low density areas or at low use times in a cost effective manner to extend service to new communities. Adding a new peripheral route to that serves Fitchburg and connects the West Transfer Point and South Transfer Point is listed in the TDP as a medium-term transit improvement.

Coordinated Plan Recommendations

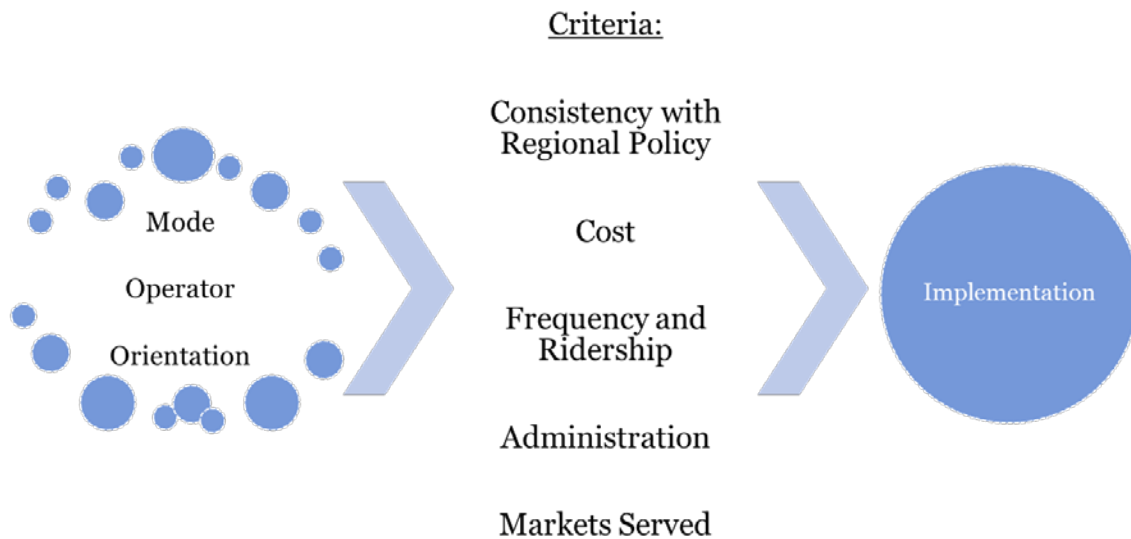
The following items are identified as needs in the 2013 Coordinated Public Transit -Human Services Transportation Plan for Dane County, and support the development of the transit modes being considered in this study:

- Expanded/new regional fixed-route bus service to reach new markets
- Regional schedule coordination and coordination of fare collection systems
- Additional accessible and shared-ride-taxi service to offer public transit in smaller communities.

Evaluation

Each transit service concept was evaluated using the screening criteria presented in Figure 7.

Figure 7. Evaluation of Transit Concepts



Mode: What is the type of transit service?

Operator: Who will operate the transit service?

Orientation: Will the service project focus solely on the mission of serving local Fitchburg trips, or will it rely on connections to the greater region?

The financial assumptions that are listed in this section were used as a basic point of comparison, and were further refined in the implementation plan. Each of the evaluation criteria are described in detail in Table 6. The various combinations of mode, operator, and orientation were compared to each other under each criterion. In addition to the preliminary evaluation by the consultant team, a discussion guide was presented to the project steering committee for input and feedback. This feedback refined the initial evaluation, and

contributed to selecting the final transit options advanced for implementation. This discussion guide is attached to this plan in Appendix B.

Table 6. Evaluation Criteria

Transit Mode		Criteria				
		Consistency with Regional Policy	Operating and Capital Cost	Frequency and Estimated Ridership	Administration	Markets Served
<p>Fixed Route Bus</p> <ul style="list-style-type: none"> - Most formal route and fare structure - Signed stops and shelters placed at ¼ mile distance - Minimum of hourly frequency - ADA complimentary paratransit service - Can connect two Madison Metro Transfer Points (regional), or run a shorter route (intracity) connecting to Madison Metro Routes or a single transfer point. 	<p>Option #1: Intergovernmental agreement with City of Madison for Madison Metro Transit service.</p>	<ul style="list-style-type: none"> • Is the transit service project specifically identified the 2013-2017 Transit Development Plan for the Madison Urban Area? Is the service consistent with recommendations for Madison’s “peripheral” areas? • Is the transit service project consistent with strategies in local comprehensive plans, long-range transportation plans, Dane County coordinated transportation plan, etc.? • How will state, federal, and local funding be invested in the service project? 	<ul style="list-style-type: none"> • Local administrative costs • Total operating cost • Total capital cost • Local share of operating cost (exclusive of fare revenue) • Local share of capital cost 	<ul style="list-style-type: none"> • Frequency • Estimated annual ridership in third year of operation (first year ridership assumed to be about 50-60% of this) • Service productivity and cost effectiveness 	<ul style="list-style-type: none"> • Contract structure (vehicle ownership, operating contract, type of agreement) • Grant applications • Applicable state/federal reporting and requirements • Marketing • City of Fitchburg oversight (customer service, contract administration, reporting, financial management) 	<ul style="list-style-type: none"> • How do ridership estimates correspond to target markets, and estimated demand? • Geographic coverage of service
	<p>Option #2: Fixed route bus service that is privately contracted under direct oversight of the City of Fitchburg</p>					
	<p>Option #1: Intergovernmental agreement with the City of Madison for Madison Metro Paratransit Service</p>					
<p>Flexible Bus Service</p> <ul style="list-style-type: none"> - Hybrid of demand response and fixed-route service - Curb-to-curb service in a designated zone - Scheduled time points at key Fitchburg destinations and Metro transfer points. - Can connect two Madison Metro Transfer Points (regional), or run a shorter route (intracity) connecting to Madison Metro Routes or a single transfer point. 	<p>Option #2: Service is privately contracted under direct oversight of the City of Fitchburg</p>					
	<p>Service is privately contracted under direct oversight of the City of Fitchburg</p>					
<p>Shared-Ride-Taxi Service</p> <ul style="list-style-type: none"> - Dial-a-ride zone in Fitchburg that includes residential areas and key community destinations - Differs from specialized services in that it is open to general public - Serves a zone of Fitchburg with transit supportive densities outside of Madison Metro service area. 						

Concept Evaluation

● = Comparatively high rating ◉ = Moderate rating □ = Comparatively low rating

Consistency with Regional Policy

Measures:

- Specific Inclusion in Transit Development Plan
- Consistent with Policies in the Dane County Coordinated Transit Plan, and Fitchburg Transit Plan.
- Ability to leverage local, state, and federal funding

MODE, OPERATOR, ORIENTATION	RATING	NOTES
Fixed Route, Metro, Regional	●	Service is mentioned in all plans. WisDOT funding Tier A2 or Tier B.
Fixed Route, Metro, Intracity	◉	Service is not a project listed in Madison TDP. WisDOT funding Tier A2 or Tier B.
Fixed Route, Private Contractor, Regional	●	Service is mentioned in all plans. WisDOT funding Tier B.
Fixed Route, Private Contractor, Intracity	◉	Service is not a project listed in Madison TDP. WisDOT funding Tier B.
Flexible Bus, Metro or County, Regional	●	Service is not mentioned in TDP, but is consistent with specific strategies listed in local and county plans. WisDOT funding Tier A2 or Tier B.
Flexible Bus, Metro or County, Intracity	●	Service is not mentioned in TDP, but is consistent with specific strategies listed in local and county plans. WisDOT funding Tier A2 or Tier B.
Flexible Bus, Private Contractor, Regional	●	Service is not mentioned in TDP, but is consistent with specific strategies listed in local and county plans. WisDOT funding Tier B.
Flexible Bus, Private Contractor, Intracity	●	Service is not mentioned in TDP, but is consistent with specific strategies listed in local and county plans. WisDOT funding Tier B.
Shared-Ride-Taxi, Private Contractor, Intracity	●	Service is not mentioned in TDP, but is consistent with specific strategies listed in local and county plans. WisDOT funding Tier B.

Operating and Capital Cost

Measures:










- Total Operating and Capital Cost
- Local Share of Capital Cost

MODE, OPERATOR, ORIENTATION	RATING	NOTES
Fixed Route, Metro, Regional	<input type="checkbox"/>	Highest overall operating cost and capital cost, highest revenue potential
Fixed Route, Metro, Intracity	<input type="checkbox"/>	Similar per hour cost to regional route, but with less revenue potential.
Fixed Route, Private Contractor, Regional	<input checked="" type="radio"/>	Cost savings though contracted operations and lower capital costs.
Fixed Route, Private Contractor, Intracity	<input checked="" type="radio"/>	Cost savings though contracted operations and lower capital costs.
Flexible Bus, Metro or County, Regional	<input type="checkbox"/>	Potentially high per hour rate depending on operator.
Flexible Bus, Metro or County, Intracity	<input type="checkbox"/>	Potentially high per hour rate depending on operator.
Flexible Bus, Private Contractor, Regional	<input checked="" type="radio"/>	Greater mileage increases fleet requirement and overall cost.
Flexible Bus, Private Contractor, Intracity	<input checked="" type="radio"/>	Overall capital and operating costs will be similar to
Shared-Ride-Taxi, Private Contractor, Intracity	<input checked="" type="radio"/>	Lowest overall costs.

Frequency and Estimated Ridership

Measures:










- Frequency
- Estimated annual ridership in third year of operation
- Service productivity and cost effectiveness

MODE, OPERATOR, ORIENTATION	RATING	NOTES
Fixed Route, Metro, Regional		Hourly frequency corresponding to timed transfers and route mileage. Greatest potential for overall ridership.
Fixed Route, Metro, Intracity		Hourly frequency corresponding to connections with Madison Metro Transit routes. Similar productivity to Option #1, but lower ridership due to reduced connectivity.
Fixed Route, Private Contractor, Regional		Hourly frequency corresponding to timed transfers and route mileage. Greatest potential for overall ridership (somewhat more capacity constrained due to smaller fleet).
Fixed Route, Private Contractor, Intracity		Hourly frequency with possible greater frequency during peak period. Similar productivity to Option #1, but lower ridership due to reduced connectivity.
Flexible Bus, Metro or County, Regional		Hourly frequency corresponding to timed transfers and route mileage. Potentially high contractor rates reduce cost effectiveness
Flexible Bus, Metro or County, Intracity		Hourly frequency with possible greater frequency during peak period. Potentially high contractor rates reduce cost effectiveness.
Flexible Bus, Private Contractor, Regional		Hourly frequency corresponding to timed transfers and route mileage.
Flexible Bus, Private Contractor, Intracity		Hourly frequency with possible greater frequency during peak period.
Shared-Ride-Taxi, Private Contractor, Intracity		Greatest cost per rider, lowest overall ridership.

Administration

Measures:










- Contract Structure
- Responsibility for grant management and reporting
- Oversight requirements
- Marketing and customer service requirements

MODE, OPERATOR, ORIENTATION	RATING	NOTES
Fixed Route, Metro, Regional		Intergovernmental agreement with the City of Madison to provide fixed route service, delegated authority to Madison Metro Transit for oversight.
Fixed Route, Metro, Intracity		Intergovernmental agreement with the City of Madison to provide fixed route service, delegated authority to Madison Metro Transit for oversight.
Fixed Route, Private Contractor, Regional		City of Fitchburg manages contract with a private provider and oversees service project, including grant management and reporting. Contractor assumes some customer service and marketing responsibilities.
Fixed Route, Private Contractor, Intracity		City of Fitchburg manages contract with a private provider and oversees service project, including grant management and reporting. Contractor assumes some customer service and marketing responsibilities.
Flexible Bus, Metro or County, Regional		Administration is a shared effort between municipal partner and contractor.
Flexible Bus, Metro or County, Intracity		Administration is a shared effort between municipal partner and contractor.
Flexible Bus, Private Contractor, Regional		City of Fitchburg has most active role in service design and administration.
Flexible Bus, Private Contractor, Intracity		City of Fitchburg has most active role in service design and administration.
Shared-Ride-Taxi, Private Contractor, Intracity		City of Fitchburg has an active role in administration, however the contract design is the most simple to arrange, and peer technical assistance is available.

Markets Served

Measures:

- Potential to meet demand
- How ridership corresponds to market segments
- Geographic coverage
- This measure largely depends on the target market for the service, and the project purpose.

MODE, OPERATOR, ORIENTATION	RATING	NOTES
Fixed Route, Metro, Regional		Fixed route transit that serves Madison Metro transfer points covers the broadest geographic area and has the greatest potential for connecting ridership.
Fixed Route, Metro, Intracity		Need for multiple transfers, cost, and lack of geographic coverage reduce the desirability of this option.
Fixed Route, Private Contractor, Regional		Fixed route transit that serves Madison Metro transfer points covers the broadest geographic area and has the greatest potential for connecting ridership.
Fixed Route, Private Contractor, Intracity		Need for multiple transfers, cost, and lack of geographic coverage reduce the desirability of this option.
Flexible Bus, Metro or County, Regional		Serves intracity market efficiently, while maximizing connections to Madison Metro routes.
Flexible Bus, Metro or County, Intracity		Serves intracity market efficiently, while maximizing connections to Madison Metro routes.
Flexible Bus, Private Contractor, Regional		Serves intracity market efficiently, while maximizing connections to Madison Metro routes.
Flexible Bus, Private Contractor, Intracity		Good option for serving intracity market that is not covered by Madison Metro fixed route.
Shared-Ride-Taxi, Private Contractor, Intracity		Serves a specific market of people who rely on transit.

In this comparison, there are two transportation modes that seem most appropriate when considering the potential ridership and target market for service. For connections to a regional market and the highest ridership potential the fixed route modes that make connections to the West and/or South Transfer Points are the best performing options.

However, if the project goal is to fill in geographic gaps within Fitchburg, where those who rely on transit have many mobility challenges the contracted flexible bus options have the greatest balance of cost effectiveness, ridership potential and administrative requirements. Additionally, a flexible service like this can develop a future market for more robust fixed-route service.

Summary

MODE, OPERATOR, ORIENTATION	Regional Policy	Cost	Frequency and Ridership	Administration	Markets Served
Fixed Route, Metro, Regional	●	□	●	●	●
Fixed Route, Metro, Intracity	○	□	○	●	□
Fixed Route, Private Contractor, Regional	●	○	●	□	●
Fixed Route, Private Contractor, Intracity	○	○	○	□	□
Flexible Bus, Metro or County, Regional	●	□	□	○	●
Flexible Bus, Metro or County, Intracity	●	□	□	○	●
Flexible Bus, Private Contractor, Regional	●	○	●	□	●
Flexible Bus, Private Contractor, Intracity	●	●	●	□	●
Shared-Ride-Taxi, Private Contractor, Intracity	●	●	□	●	○

Implementation Plan

Project Review

Project activities have included an assessment of transit needs and demand in the City of Fitchburg, a definition of the project purpose, and a presentation of various transit options. On preliminary evaluation, three transit options were ranked the highest based on their consistency with regional policy, cost effectiveness, ridership potential and administrative requirements. The most favorable options include:

Near-Term Transit Options

- Intracity oriented flexible bus, operated via City of Fitchburg contractor
- Intracity oriented shared-ride-taxi, operated via City of Fitchburg contractor

Long-Term Transit Option

- Regionally oriented fixed-route bus, operated via intergovernmental agreement

The options were also evaluated based on the market served. Each of the three options meets a different set of needs. The fixed-route intracity option had a combination of high cost and low geographic coverage and was therefore screened out through this category.

Summary of Most Promising Transit Options

The evaluation of alternatives for the transit feasibility study identifies two transportation options. While each option serves the purpose of filling in gaps in transit service within Fitchburg, their respective target markets and ridership outcomes differ. A positive outcome is that the three options can be deployed consecutively. If a flexible bus is cost prohibitive at this time, a shared-ride-taxi service is a suitable incremental investment. Both modes can establish a customer base for a fixed route service. Establishing a cross-town fixed route service under current finance and policy conditions will require significant investment from the City of Fitchburg and the availability of vehicles and storage from Madison Metro.

Shared-Ride-Taxi – Lowest Overall Cost, Serving People Who Rely on Transit

Definition

Shared-ride-taxi or “demand response” service is defined by FTA as any non-fixed route system of transporting individuals that requires advanced scheduling by the customer, including services provided by public entities, nonprofits, and private providers. Service is provided curb-to-curb and there are no formalized schedules. In Wisconsin, these services

are provided by taxi companies or rural transportation providers. The vehicles do not operate over a fixed route or on a fixed schedule except, perhaps, on a temporary basis to satisfy a special need. The vehicle may be dispatched to pick up several passengers at different pick-up points before taking them to their respective destinations and may even be interrupted en route to these destinations to pick up other passengers.

Vehicles

Fitchburg has both urban and rural characteristics, and it is assumed that the fleet for a shared-ride-taxi system would consist of primarily eight passenger mini-buses. The buses could also be supplemented with taxi sedans or accessible minivans during times of peak demand, or to provide a trip that is difficult to coordinate as a shared ride. An example of a mini-bus is shown in Figure 8, and an accessible minivan is shown in Figure 9.

Figure 8. Washington County, WI Shared-Ride-Taxi Vehicle



Figure 9. Door County, WI Door2Door Rides Vehicle



Fares and Service Area

- Fare is a flat rate comparable to Madison Metro fare for service within a primary service area, with a per-mile or zone rate for trips that have origins or destinations outside of this area.
- A sample map showing an example of a shared-ride-taxi service area is shown in Figure 10. This service area could be easily modified to include any destinations that are outside of the Urban Service Area.

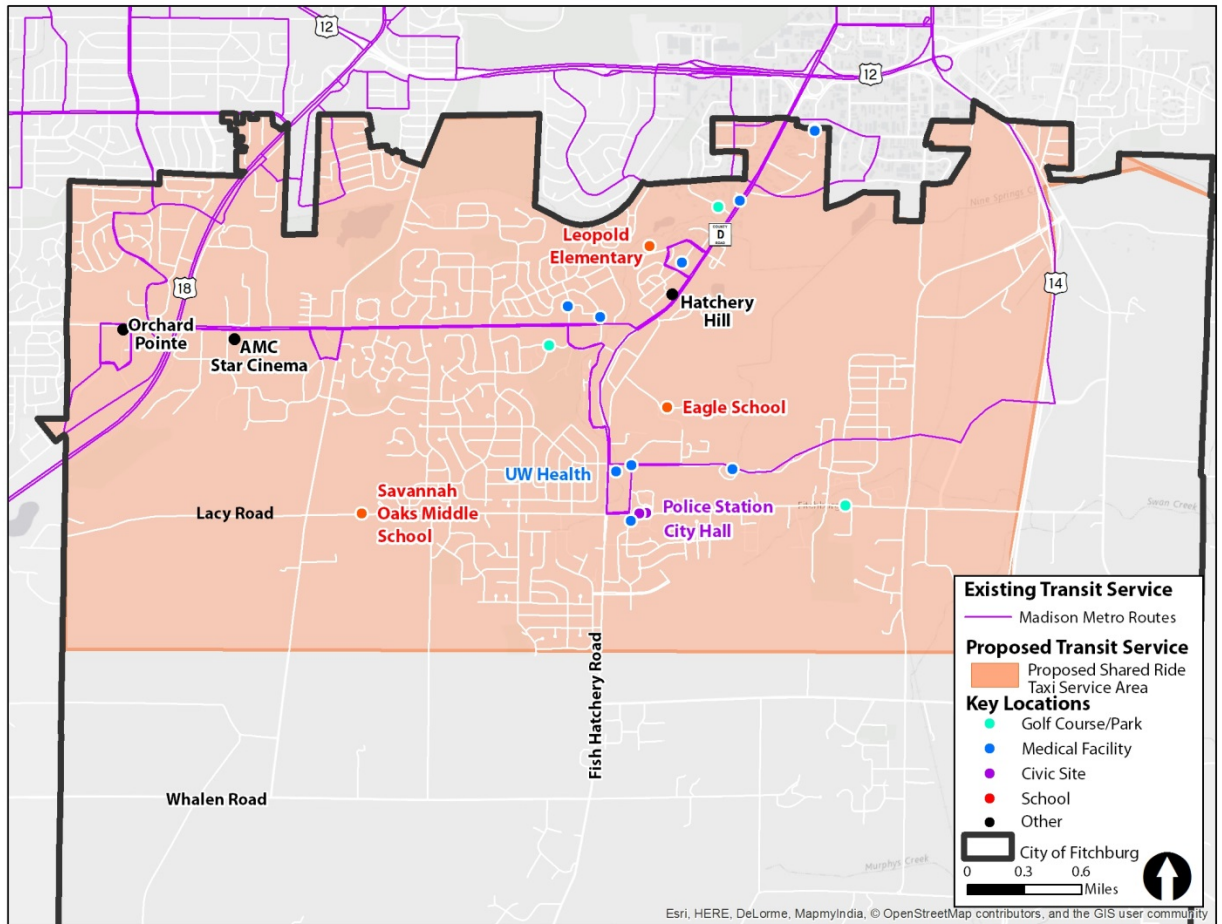
Key Advantages

- Lowest overall cost compared to flexible and fixed route bus.
- Ability to cover a broad geographic areas, specifically provide curb-to-curb service in areas that are difficult to serve by bus.
- Develops a customer base and point of data collection for future transit service.
- Lowest staff administration efforts, easiest to implement

Key Disadvantages

- Capacity constrained, smaller vehicles and low passengers per hour
- Typically does not attract “choice rider,” caters primarily to people who rely on transit needing to travel outside of the Madison Metro service area.
- Most challenging to coordinate with Madison Metro service
- User must always initiate pickup
- Potential for users to “rely” on curb-to-curb service making it difficult to convert to a flexible bus or fixed route in the long term

Figure 10. Example Shared-Ride-Taxi Service Area



Flexible Bus – Balanced Approach, Building a Base of Transit Customers

Definition

A flexible bus – commonly referred to as “flex-route” or “deviated fixed-route” – is a transit mode that operates as a hybrid of a fixed-route bus and a demand response service. There are several scheduled time points strategically placed along a travel corridor, and the vehicle will operate curb-to-curb service within a set geographic area. If the geographic area exists as a $\frac{3}{4}$ mile or greater buffer, it is deemed to be equivalent to ADA complementary paratransit. Rides are dispatched as they are for paratransit service, and still have conventional bus stops and shelters corresponding to the time points.

Vehicles

A flexible bus service will use medium-duty vehicles that are larger than what is offered by a shared-ride-taxi system. These are typically cutaway chassis vehicles with a minimum

capacity of 10 seated and two wheelchair positions. An example of a flexible bus vehicle is shown in Figure 11 and Figure 12.

Figure 11. Metro Hopper Bus, San Joaquin County, CA



Figure 12.: Capital Area Transit Authority Low-Floor Paratransit Vehicle, Lansing, MI



Examples

Flexible bus service is used in many suburban and rural areas nationwide. Examples of flexible bus routes currently in operation include:

- Roanoke, VA Area – Mountain Express route connecting the communities of Covington and Clifton Forge
- Minnesota Valley Transit Authority (Apple Valley, MN and Rosemount, MN) – Route 420 Flex-Route
- San Joaquin County, CA – “Hopper” Deviated Fixed-Route Service
- Fond du Lac Band of Lake Superior Chippewa– Cloquet, MN(rural and suburban Duluth, MN)
- University of Wisconsin – Madison ADA services
- Appleton, WI – Valley Connector Service
- Door County, WI – Door2Door Rides

A flexible bus service provides customers with the reliability of a fixed route service, with the flexibility of route deviations that can reach areas too challenging or costly to serve with a heavy-duty bus. Additionally, a flexible bus serves in place of ADA complementary paratransit. Often, flexible bus routes are deployed as a way to manage the growing costs and inefficiencies of ADA paratransit service. They also offer the ability to test new destinations and provide workforce transportation.

Fares and Service Area

- Fare is a flat rate comparable to Madison Metro fare for service within a primary service area. Transfers should be made available to Madison Metro fixed route service.
- An example of a flexible bus service area that has an approximate one-hour full east-to-west travel time is shown in Figure 6. This is a $\frac{3}{4}$ mile buffer from the stop locations. The service area boundaries and management plan need to be coordinated with Madison Metro and other regional providers so that service is not duplicative.
- Examples of existing route maps for other flexible bus systems are shown in Figures 14 and 15.

Key Advantages

- Lower cost per rider than shared-ride-taxi
- Offers more flexibility than a fixed-route bus service
- Can serve low-density development
- Transfers to Madison Metro transit are feasible
- Schedules and stops provide a visible service

Key Disadvantages

- Service product is new to region and will require marketing and outreach to be successful
- Limited regional connections due to the need for multiple transfers

- City and contractor resources devoted to administration
- Potential long-term commitment to providing demand response service to outlying areas
- Lack of adequate road connectivity will make it a challenge to serve all neighborhoods – for example the Belmar neighborhood.

Figure 13. Example of a Flexible Bus Service Area in Fitchburg, WI

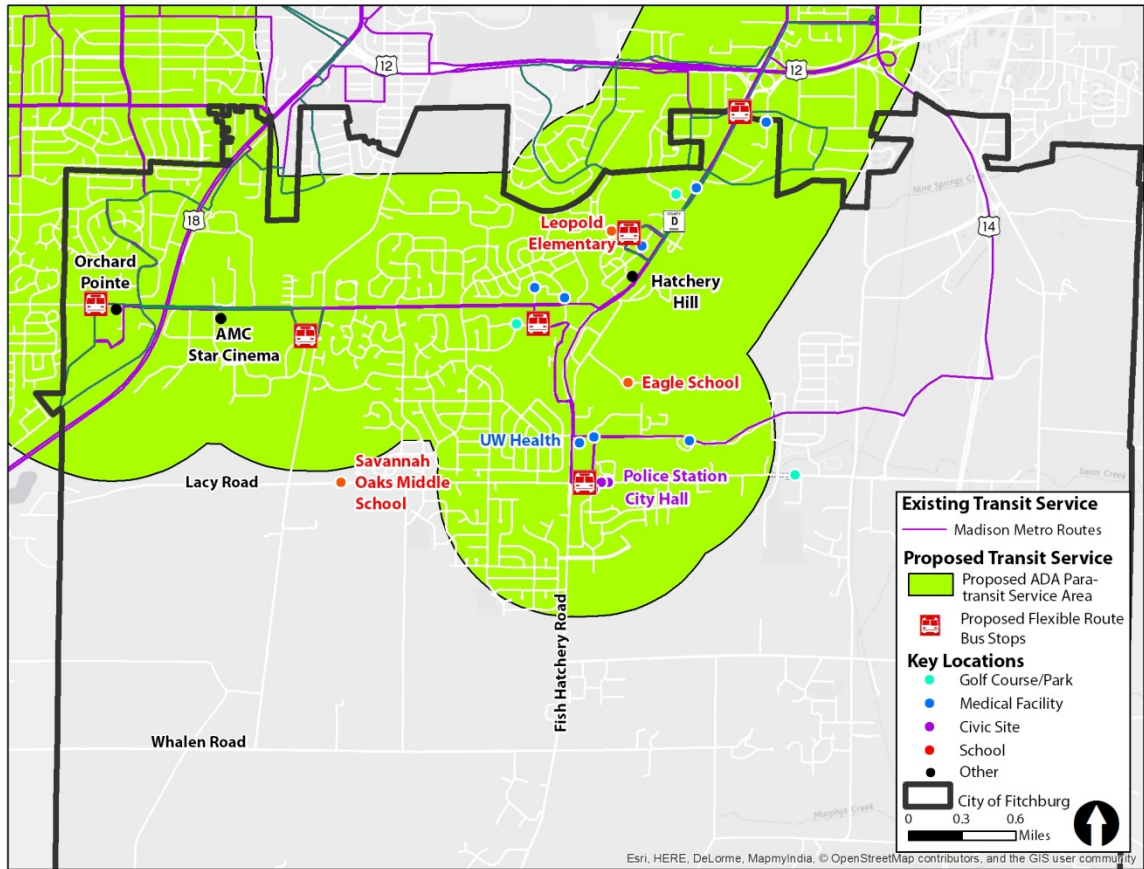


Figure 14.: Mountain Express Transit Route Map, Roanoke, VA Region

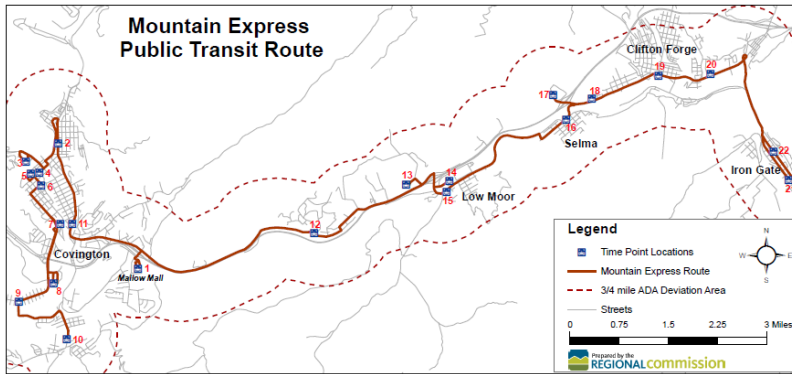
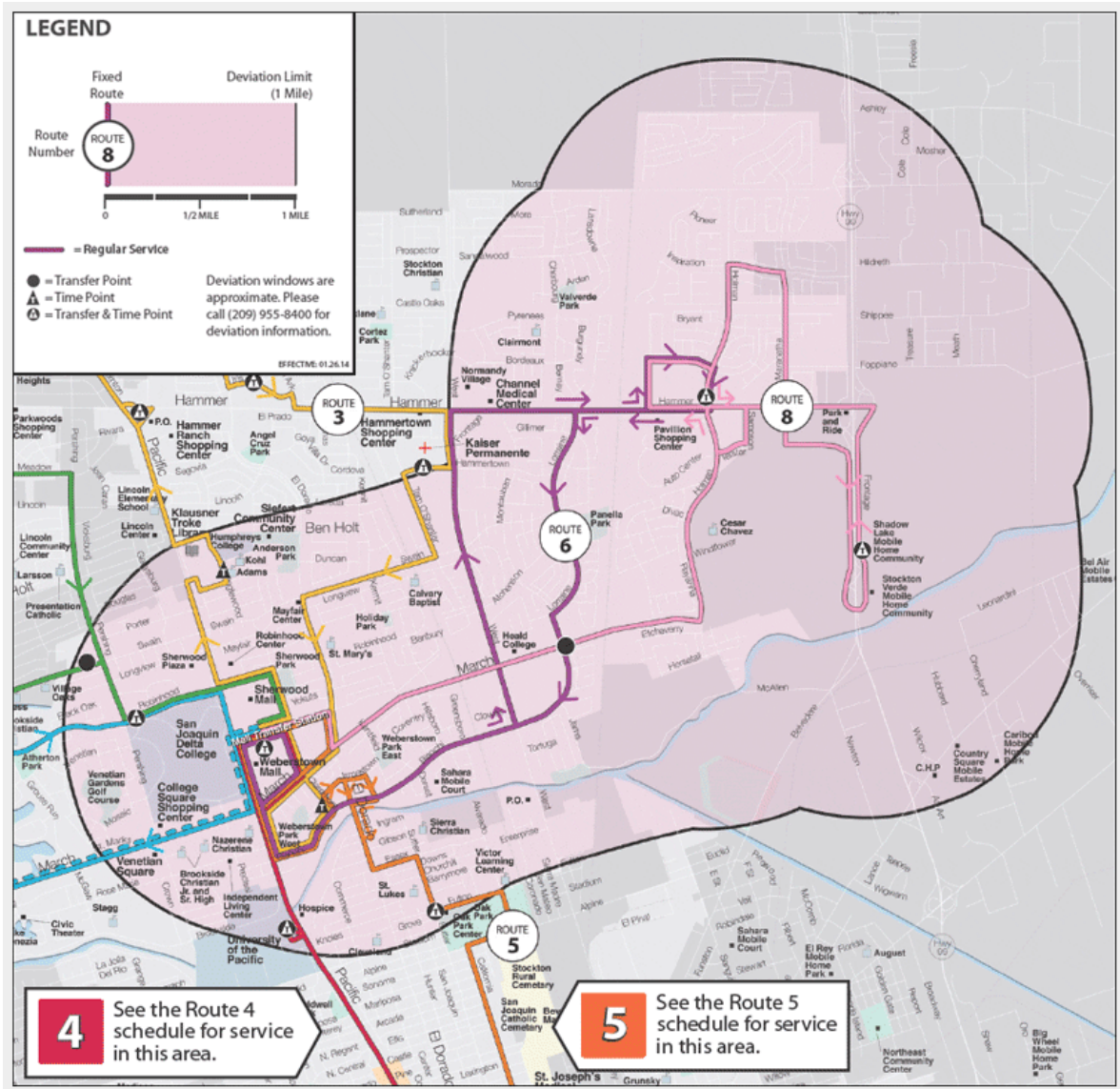


Figure 15. Metro Hopper (Stockton, CA) Route 8 Map



Fixed Route Transit: A Long Term Option

Definition

For a connection to regional destinations beyond the City of Fitchburg that draws the broadest base of ridership, fixed route service operated by Madison Metro is most appropriate. Fixed route service is provided on a repetitive, scheduled basis along a specific route with vehicles stopping to pick up and deliver passengers to specific locations; each fixed route trip serves the same origins and destinations. Establishing a flexible bus service can serve as a method of data collection and a way to establish a base of ridership for Madison Metro service that operates within Fitchburg. This is an appropriate long term solution, when stable funding for the service becomes available.

Complementary Services

Private transportation services are components of the greater transportation network in Fitchburg, Madison, and Dane County. These can supplement any public transit service. However, public transit is at the core of any larger coordinated system. Private transportation companies often partner with transit providers through vouchers or guaranteed-ride-home programs.

Transportation Technology Platforms and Private Taxi Services

New technological platforms for transportation have become common in many cities, the most notable of which are Uber and Lyft. These are platforms in which private vehicle owners and livery companies provide point-to-point transportation. Passengers request a ride via a smartphone app, which is also used to track vehicles and pay fares. Taxi companies have developed similar platforms where passengers can hail rides using mobile devices, such as Curb (formerly Taxi Magic) and iHAIL. Gradually these services are becoming an integral part of the private transportation network, and for some trip purposes supplement taxi and public transit. For basic services, fares are comparable to metered taxi fares (considerably higher than public transit), and greater for livery vehicle or shared van services. Additionally, there are no regulations for accessibility and the use of these services requires a credit card. Fares also vary based on a proprietary algorithm that balances supply and demand known as surge pricing.

For the above reasons vehicles that use Uber and Lyft are not considered public transit modes. However, many of its elements can be deployed in a public transit setting. Demand responses modes (flexible bus, shared-ride-taxi, etc.) can be dispatched using smartphones or online using existing software packages. Also, vehicles can be tracked in real-time using automatic vehicle locators. In addition to purchasing software packages, transit agencies have partnered with colleges and universities to develop transit apps as a part of student projects

at a considerably reduced cost. It would be recommended to further explore incorporating these customer interfaces into a public transit project.

Volunteer Driver Services

Volunteer drivers provide rides using their own private vehicles, or a vehicle that is owned by a public or private entity. Rides are typically coordinated by human service agencies. The most common trip purpose for a volunteer driver ride is a medical appointment. Volunteer driver programs offer linkages for seniors or people living in remote areas to specialized medical care, social service agencies, or other destinations as specified by the coordinating agency. Drivers are typically reimbursed on a mileage basis as per federal IRS rates, and passengers may contribute a donation. Volunteer drivers can fill in service gaps that exist due to long distances or span in service (weekends, evenings, etc.).

Marketing, Promotion, Outreach

Work to date has been completed in the City of Fitchburg Transit Plan, and by the project steering committee to identify a target customer base for this service. Part of the project implementation will be to deploy an aggressive marketing and outreach strategy to ensure awareness of the new service and its success.

Marketing and Outreach Partners

- Madison Metro Transit
- City of Fitchburg Senior Center
- City of Fitchburg Library
- Dane County Human Services – Transportation and Mobility Management
- Local neighborhood associations
- Medical clinics
- School districts
- Assisted living/adult day centers
- Business community
- Schools, churches, other community institutions

Marketing Materials and Tasks

- Travel training program
- Website
- Advertisements
 - Vehicle branding
 - Radio and web advertisements
 - Direct mail
- Bus stops and signs

- Paper brochures and schedules
- Development of a transit app, or mobile-friendly website

Marketing roles will be shared responsibility among city staff to design a scope of marketing tasks, and the selected contractor will deliver on these marketing tasks.

Implementation

Before the service commences there are several critical next steps that local partners need to undertake. On the following page, Table 7 summarizes these tasks and identifies the appropriate roles and responsibilities.

Next Steps

Table 7. Implementation Next Steps

Task	Definition	Lead Agency
Step 1: Submit Letter of Intent to WisDOT and Madison Area MPO for State Transit Operating Assistance	A letter of intent must be submitted to the Wisconsin Department of Transportation to signify that a municipality is interested in applying for Chapter 85.20 transit operating assistance. This letter must be submitted at least two state fiscal years prior to grant submittal. If the City of Fitchburg does not elect to be the grantee and is instead a grant subrecipient of an existing transit agency (e.g. City of Madison, City of Verona) then this step is not necessary.	City of Fitchburg or designated recipient
Step 2: Determine preferred transit mode	Local decision makers in the City of Fitchburg must decide on a final transit option to pursue for implementation, weighing the projected costs and benefits. Technical assistance may be provided by the Madison MPO.	City of Fitchburg, Madison MPO
Step 3: Finalize transit service area	The City of Fitchburg will work with the Madison MPO to determine a service boundary that will not be duplicative of existing transit services and appropriately fill in geographic gaps. These will be refinements of the base concept provided by the transit feasibility study consultant.	City of Fitchburg, Madison MPO
Step 4: Secure local share of operating funds	After a preferred mode is selected, local share of operating funds must be secured.	City of Fitchburg, and/or partner agency
Step 5: Apply for State Aid	Complete grant application	City of Fitchburg or designated recipient
Step 6: Draft request for proposals, develop marketing Plan	WisDOT has numerous boiler-plate RFP's available that the City of Fitchburg can use as a basis for developing a RFP. The consultant team will also attach example RFP boilerplates as an appendix to the final report. Since this is a new project in Fitchburg it may be advisable to hold a pre-proposal meeting with potential vendors to introduce the service concept, facilitate questions and answers, and refine details of the RFP.	City of Fitchburg, WisDOT Transit Section
Step 7: Award and negotiate contract with transit provider.	RFP's should be evaluated by a group of professionals with industry expertise, and the contract will be awarded based on the committee selection.	City of Fitchburg, Madison Metro
Step 8: Implement transit service and monitor subcontractor performance.	As transit service commences, the subcontractor should be monitored for contract compliance to ensure success of the project.	City of Fitchburg

Cost and Ridership Estimates

A summary of projected operating costs and ridership estimates are presented for each service option in Table 8.

Table 8. Operating Cost Estimates

Option	Weekday Service (6:00a.m. to 6:00p.m.)	Weeknight Service (6:00p.m. – 10:00p.m.)	Saturday Service (10:00a.m. – 2:00p.m.)
Shared-Ride-Taxi Total Annual Operating Expenses	\$320,000 - \$360,000	\$70,000 - \$80,000	\$15,000 - \$17,000
Flexible Bus Total Annual Operating Expenses	\$405,000 - \$585,000	\$135,000 - \$195,000	\$18,000 - \$28,000
State Share	51 percent	51 percent	51 percent
Local Share	34 percent	39 percent	39 percent
Fare and Other Revenue	15 percent	10 percent	10 percent

Shared-Ride-Taxi Weekday Ridership Estimates (Third year)

- 36,000 – 60,000 annual passenger trips
- Projected operating cost per rider: \$7.00-\$11.00³

Flexible Bus Ridership Estimates (Third Year)

- 60,000 – 80,000 annual passenger trips
- Projected operating cost per rider: \$6.00-\$9.00⁴

Conclusion

Each one of the three options presented for implementation has distinct advantages and disadvantages, serve different purposes, and meet different sets of needs. Fixed route service, as cited in the Madison Area Transit Development Plan, that merges some existing routes and connects them with an east-west oriented service remains a promising option. A fixed route service can connect portions of Fitchburg unserved by public transit with the greater Madison region. However, the initial investment in capital and local share of operating assistance required to make this service successful may not be available in the near term. Moreover, there are areas within Fitchburg with pedestrian and roadway connectivity that are not supportive of fixed route transit service. Therefore, this report presents two

³ Based on preliminary cost and ridership estimates and survey of peer systems for third year of service, weekdays

⁴ Based on preliminary cost and ridership estimates and survey of peer systems for third year of service, weekdays

flexible transit options that present a lower operating cost and build on the work of recent transit planning efforts in Fitchburg. While the overall ridership benefit is lower than a fully developed fixed route service, these options can meet basic transit needs, offer a transit option for travel within Fitchburg, and develop a market for future transit service. Ultimately the amount and type of transit will be a local decision and dependent on what level of funding is obligated for transit projects. As the City of Fitchburg proceeds with the implementation steps outlined in Table 7 the specifics of the operating plan will be defined.

Appendix A: Demand Estimate Evaluation

Appendix A - Fitchburg Demand Methodology and Estimates

Madison MPO TAZ - Modal Split										
City of Fitchburg										
	HH Population Total	Annual Trips	Madison MPO Daily Trips	Existing Annual Madison Metro Trips Serving Fitchburg	Mode Share		Current Trip Demand	2015 Trip Demand	2020 Trip Demand	2030 Trip Demand
Current HH (2013 ACS)	9962	23634845	6.5	386204	2.00%		472697	499471	527762	589241

MN Hybrid Demand Model										
City of Fitchburg										
	Population Totals	Multiplier					Current Trip Demand	2015 Trip Demand	2020 Trip Demand	2030 Trip Demand
Population 65 years or older	4663	4.2					19585			
Population with disabilities under 65	1382	15					20730			
Low-income, non-disabled population under 65 years	1954	7					13678			
Zero-Vehicle HHs	642	547.5					351495			
P Factor	0.5									
							405488	414483	437959	488978

Service Hours and Passengers per Hour Model										
City of Fitchburg										
	Population Totals	Service Hours Target	Current Service Hours Needs	Service Hours Per Capita Ranges	Passengers Per Service Hour (Medium Urban)	Passengers Per Service Hour (Small Urban)	Current Trip Demand	2015 Trip Demand	2020 Trip Demand	2030 Trip Demand
Medium Urban Area Population (Transit Supportive)	19459	1.00	19459	Low	10	5	216130	228372	241307	269417
Small Urban Area Population	5744	0.75	4308	Medium	15	7	322041	340282	359556	401441
TOTALS	25203		23767	High	20	10	432260	456744	482614	538835

Appendix B: Notes on Transit Concepts 1/13/2015

Transit Mode

Screening Criteria

		Consistency with Regional Policy	Operating and Capital Cost	Frequency and Estimated Ridership	Administration	Markets Served
<p>Fixed Route Bus</p> <ul style="list-style-type: none"> - Most formal route and fare structure - Signed stops and shelters placed at ¼ mile distance - Minimum of hourly frequency - ADA complimentary paratransit service - Assumes bus route connecting West Transfer Point and South Transfer Point, serving key Fitchburg destinations 	<p>Option #1: Intergovernmental agreement with City of Madison for Madison Metro Transit service.</p> <p>Option #2: Fixed route bus service that is privately contracted under direct oversight of the City of Fitchburg</p>	<ul style="list-style-type: none"> • Is the transit service project specifically identified the 2013-2017 Transit Development Plan for the Madison Urban Area? Is the service consistent with recommendations for Madison’s “peripheral” areas? • Is the transit service project consistent with strategies in local comprehensive plans, long-range transportation plans, Dane County coordinated transportation plan, etc.? • How will state, federal, and local funding be invested in the service project? 	<ul style="list-style-type: none"> • Local administrative costs • Total operating cost • Total capital cost • Local share of operating cost (exclusive of fare revenue) • Local share of capital cost 	<ul style="list-style-type: none"> • Frequency • Estimated annual ridership in third year of operation (first year ridership assumed to be about 50-60% of this) • Service productivity and cost effectiveness 	<ul style="list-style-type: none"> • Contract structure (vehicle ownership, operating contract, type of agreement) • Grant applications • Applicable state/federal reporting and requirements • Marketing • City of Fitchburg oversight (customer service, contract administration, reporting, financial management) 	<ul style="list-style-type: none"> • How do ridership estimates correspond to target markets, and estimated demand? • Geographic coverage of service
<p>Flexible Bus Service</p> <ul style="list-style-type: none"> - Hybrid of demand response and fixed-route service - Curb-to-curb service in a designated zone - Scheduled time points at key Fitchburg destinations and Metro transfer points. - Assumes bus route connecting West Transfer Point and South Transfer Point, serving key Fitchburg destinations 	<p>Option #1: Intergovernmental agreement with the City of Madison for Madison Metro Paratransit Service</p> <p>Option #2: Service is privately contracted under direct oversight of the City of Fitchburg</p>					
<p>Shared-Ride-Taxi Service</p> <ul style="list-style-type: none"> - Dial-a-ride zone in Fitchburg that includes residential areas and key community destinations - Differs from RSVP/Dane County services in that it is open to general public - Serves a zone of Fitchburg with transit supportive densities and is not duplicative of Metro bus service 	<p>Service is privately contracted under direct oversight of the City of Fitchburg</p>					

Fixed Route Transit Service	Consistency with Regional Policy	Operating and Capital Cost	Frequency and Estimated Ridership	Administration	Markets Served	Notes
<p>Option#1: Intergovernmental agreement with City of Madison for Madison Metro Transit service.</p>	<p>Consistent with local and regional plans (see attached detail)</p> <p>In this arrangement the City of Fitchburg will contract for purchased transportation with the City of Madison for Metro bus service.</p> <p>The service can operate under WisDOT funding Tier A2 (City of Madison) and the City of Madison can be the grant recipient and oversight authority (as it is currently), or the service will operate under WisDOT funding Tier B (Urban Bus) and the City of Fitchburg will be the grant recipient and oversight authority.</p> <p>Fixed-route service is appropriate for Madison's peripheral areas. Productivity of each route varies, but 10-20 passengers per hour is a typical minimum.</p>	<p>DRAFT ESTIMATES:</p> <p>Administrative Cost: N/A</p> <p>Operating Cost: \$730,000-\$830,000/year</p> <p>Local Share of Operating Cost: \$220,000-\$290,000/year</p> <p>Capital Cost: Two heavy-duty transit buses, \$900,000 (unit cost \$450,000)</p> <p>Local Share of Capital Cost: \$180,000</p> <p>Figures need to be verified with Madison Metro as scope is finalized.</p>	<p>DRAFT ESTIMATES:</p> <p>Frequency: 60 minutes</p> <p>80,000-120,000 annual trips in the third year of operation. First-year of operation will be 50-60% of this.</p> <p>This assumes an hourly service that operates from 6:00a.m. to 10:00p.m. on weekdays with a productivity rate of 10-15 passengers per revenue hour.</p>	<p>Vehicles would be owned by the City of Madison, and the City of Fitchburg could contribute to the capital investments associated with their purchase and maintenance via contractual agreement.</p> <p>Grant management and reporting could be completed by the City of Madison or the City of Fitchburg depending on the arrangement.</p> <p>Marketing would be the responsibility of the City of Madison.</p>	<p>Highest level of transit service that can serve up to 20 passengers per service hour, and have ADA complimentary paratransit.</p> <p>Fixed route transit has the broadest customer base, including downtown commuters and those traveling within Fitchburg for all trip purposes. Service operated by Metro requires less effort in marketing and coordination.</p>	
<p>Option #2: Fixed route bus service that is privately contracted under direct oversight of the City of Fitchburg</p>	<p>Consistent with local and regional plans (see attached detail)</p> <p>In this arrangement the City of Fitchburg will contract for purchased transportation with a private company or local human service agency. The service will operate under WisDOT funding Tier B and the City of Fitchburg will be the grant recipient and oversight authority.</p> <p>Fixed-route service is appropriate for Madison's peripheral areas. Productivity of each route varies, but 10-20 passengers per hour is a typical minimum.</p>	<p>DRAFT ESTIMATES:</p> <p>Administrative Cost: \$10,000 - \$40,000/year</p> <p>Operating Cost: \$635,000/year</p> <p>Local Share of Operating Cost: \$190,000/year</p> <p>Capital Cost: Medium or heavy-duty transit buses, \$300,000-\$900,000</p> <p>Local Share of Capital Cost: \$60,000-\$180,000</p>	<p>DRAFT ESTIMATES:</p> <p>Frequency: 60 minutes</p> <p>80,000-120,000 annual trips in the third year of operation. First-year of operation will be 50-60% of this.</p> <p>This assumes an hourly service that operates from 6:00a.m. to 10:00p.m. on weekdays with a productivity rate of 10-15 passengers per revenue hour.</p>	<p>Vehicles owned by the City of Fitchburg and leased to an operator OR wholly owned by a contractor.</p> <p>Grant management and reporting would be completed by the City of Fitchburg.</p> <p>The City of Fitchburg could specify the degree to which marketing and promotion would be the responsibility of the contractor. Some marketing and promotion could be done by City of Fitchburg staff.</p>	<p>Highest level of transit service that can serve up to 20 passengers per service hour, and have ADA complimentary paratransit.</p> <p>Fixed route transit has the broadest customer base, including downtown commuters and those traveling within Fitchburg for all trip purposes. Service will be coordinated, and linked to Metro buses.</p>	

Flexible Bus Service	Consistency with Regional Policy	Operating and Capital Cost	Frequency and Estimated Ridership	Administration	Markets Served	Notes
<p>Option#1: Intergovernmental agreement with City of Madison or Dane County for flex-route service.</p>	<p>Consistent with local and regional plans (see attached detail)</p> <p>Under this arrangement the City of Fitchburg will contract for this service under an existing transit service project (paratransit, other demand response service, etc.) that is managed by a local government.</p> <p>The service can operate under WisDOT funding Tier A2 (City of Madison) and the City of Madison can be the grant recipient and oversight authority, or the service will operate under WisDOT funding Tier B (Urban Bus) and the City of Fitchburg will be the grant recipient and oversight authority.</p>	<p>DRAFT ESTIMATES:</p> <p>Administrative Cost: \$10,000 - \$40,000/year</p> <p>Operating Cost:</p> <p>Flexible bus service has the widest variation in overall costs. At the lowest end of the range would be a private company that would be able to provide the service using its existing fleet and labor resources: approximately \$45/hour. At the higher end of the range would be Metro's in-house paratransit service which would have a rate comparable to Metro's fixed-route service: approximately \$95/hour. Within that range there are a variety of factors (vehicle ownership, fleet requirements, scope of service, maintenance) that can affect the contract rate. It is estimated that three buses would be required to operate the service.</p> <p>\$550,000 - \$1,140,000/year</p> <p>Capital Cost:</p> <p>Three medium-duty buses: \$360,000</p> <p>Local Share of Capital Cost: \$72,000</p>	<p>DRAFT ESTIMATES:</p> <p>Frequency: 60 minutes</p> <p>50,000-70,000 annual trips in the third year of operation. First-year of operation will be 50-60% of this.</p> <p>This assumes three vehicles operating in circulation from 6:00a.m. to 10:00p.m. on weekdays with a productivity rate of about 5-7 passengers per service hour.</p>	<p>Vehicles owned by a contractor, and meet City of Fitchburg specifications.</p> <p>Grant management and reporting could be completed by the City of Madison or the City of Fitchburg depending on the arrangement.</p> <p>Marketing and promotion of the service would be shared responsibilities of the sponsoring agency and the contractor.</p>	<p>Flexible bus offers the benefits of curb-to-curb service in areas that have poor walkability, along with easy-to-understand features like bus stops and scheduled time points.</p> <p>Vehicles have a reduced capacity and travel times are longer due to indirect routing. For this reason flexible bus service does not capture as great of a market share as the fixed route service, though the geographic coverage of the public transit service can be more expansive.</p>	

Flexible Bus Service	Consistency with Regional Policy	Operating and Capital Cost	Frequency and Estimated Ridership	Administration	Markets Served	Notes
Option #2: Flexible bus service that is privately contracted under direct oversight of the City of Fitchburg	<p>Consistent with local and regional plans (see attached detail)</p> <p>In this arrangement the City of Fitchburg will contract for purchased transportation with a private company or local human service agency. The service will operate under WisDOT funding Tier B and the City of Fitchburg will be the grant recipient and oversight authority.</p>	<p>DRAFT ESTIMATES:</p> <p>Administrative Cost: \$10,000 - \$40,000/year</p> <p>Operating Cost: \$550,000</p> <p>Local Share of Operating Cost: \$190,000/year</p> <p>It is estimated that three buses would be required to operate the service.</p> <p>Capital Cost: Three medium-duty buses: \$360,000 Local Share of Capital Cost: \$72,000</p>	<p>DRAFT ESTIMATES:</p> <p>Frequency: 60 minutes</p> <p>50,000-70,000 annual trips in the third year of operation. First-year of operation will be 50-60% of this.</p> <p>This assumes three vehicles operating in circulation from 6:00a.m. to 10:00p.m. on weekdays with a productivity rate of about 5-7 passengers per service hour.</p>	<p>Vehicles owned by the City of Fitchburg and leased to an operator OR wholly owned by a contractor.</p> <p>Grant management and reporting would be completed by the City of Fitchburg.</p> <p>The City of Fitchburg could specify the degree to which marketing and promotion would be the responsibility of the contractor. Some marketing and promotion could be done by City of Fitchburg staff.</p>	<p>Flexible bus offers the benefits of curb-to-curb service in areas that have poor walkability, along with easy-to-understand features like bus stops and scheduled time points.</p> <p>Vehicles have a reduced capacity and travel times are longer due to indirect routing. For this reason flexible bus service does not capture as great of a market share as the fixed route service, though the geographic coverage of the public transit service can be more expansive.</p>	

Shared-Ride-Taxi Service	Consistency with Regional Policy	Operating and Capital Cost	Frequency and Estimated Ridership	Administration	Markets Served	Notes
Service is privately contracted under direct oversight of the City of Fitchburg	<p>Consistent with local and regional plans (see attached detail)</p> <p>In this arrangement the City of Fitchburg will contract for purchased transportation with a private company or local human service agency. The service will operate under WisDOT funding Tier B and the City of Fitchburg will be the grant recipient and oversight authority.</p>	<p>DRAFT ESTIMATES</p> <p>Administrative Cost: \$10,000-\$40,000</p> <p>Operating Cost: \$420,000</p> <p>Local Share of Operating Cost: \$126,000/year</p> <p>Capital Cost: Three medium-duty buses: \$240,000</p> <p>Local Share of Capital Cost: \$48,000</p>	<p>DRAFT ESTIMATES</p> <p>Frequency: Demand Response</p> <p>36,000-60,000 annual trips in the third year of operation. First-year of operation will be 50-60% of this.</p> <p>This assumes three vehicles in service from 6:00a.m. to 10:00p.m. on weekdays, with a productivity rate of approximately 3 to 5 passengers per hour.</p>	<p>Vehicles owned by the City of Fitchburg and leased to an operator OR wholly owned by a contractor. This would</p> <p>Grant management and reporting would be completed by the City of Fitchburg.</p> <p>The City of Fitchburg could specify the degree to which marketing and promotion would be the responsibility of the contractor. Some marketing and promotion could be done by City of Fitchburg staff.</p>	<p>A shared-ride-taxi will primarily serve a population that relies on transit, and has overlap with the human service transportation market (medical transportation, transportation for older adults, transportation for people with disabilities, people without access to vehicles, etc.). Shared-ride-taxis will also extend the range of fixed-route bus services, and are an appropriate mode of transportation for serving the rural parts of Fitchburg or guaranteed ride home programs.</p>	

Appendix C: Advisory Committee Presentations

Fitchburg Intra-City Transit Study



**CITY OF FITCHBURG TRANSIT AND
TRANSPORTATION COMMISSION**

PROJECT UPDATE

JANUARY 21, 2015



Agenda



- Overview of project
- Existing conditions and estimates of demand
- Overview of transit options and service models
- Preliminary evaluation
- Discussion

Project Overview



- Part 1: Assess Fitchburg's transit market
- Part 2: Estimate demand for transit service
- Part 3: Present and evaluate different types of transit service
- Part 4: Develop implementation plan



Existing Conditions

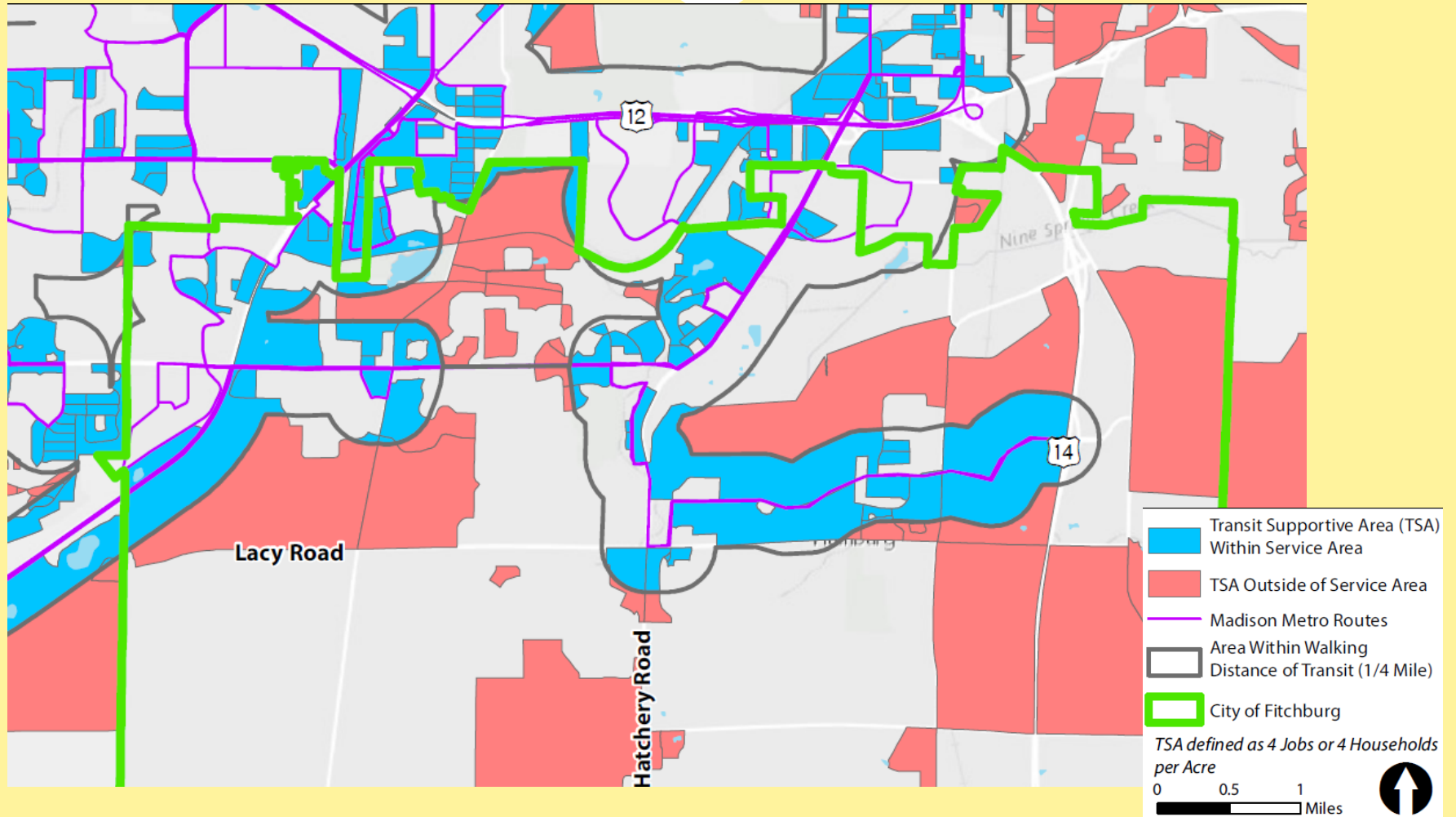


Transit Service

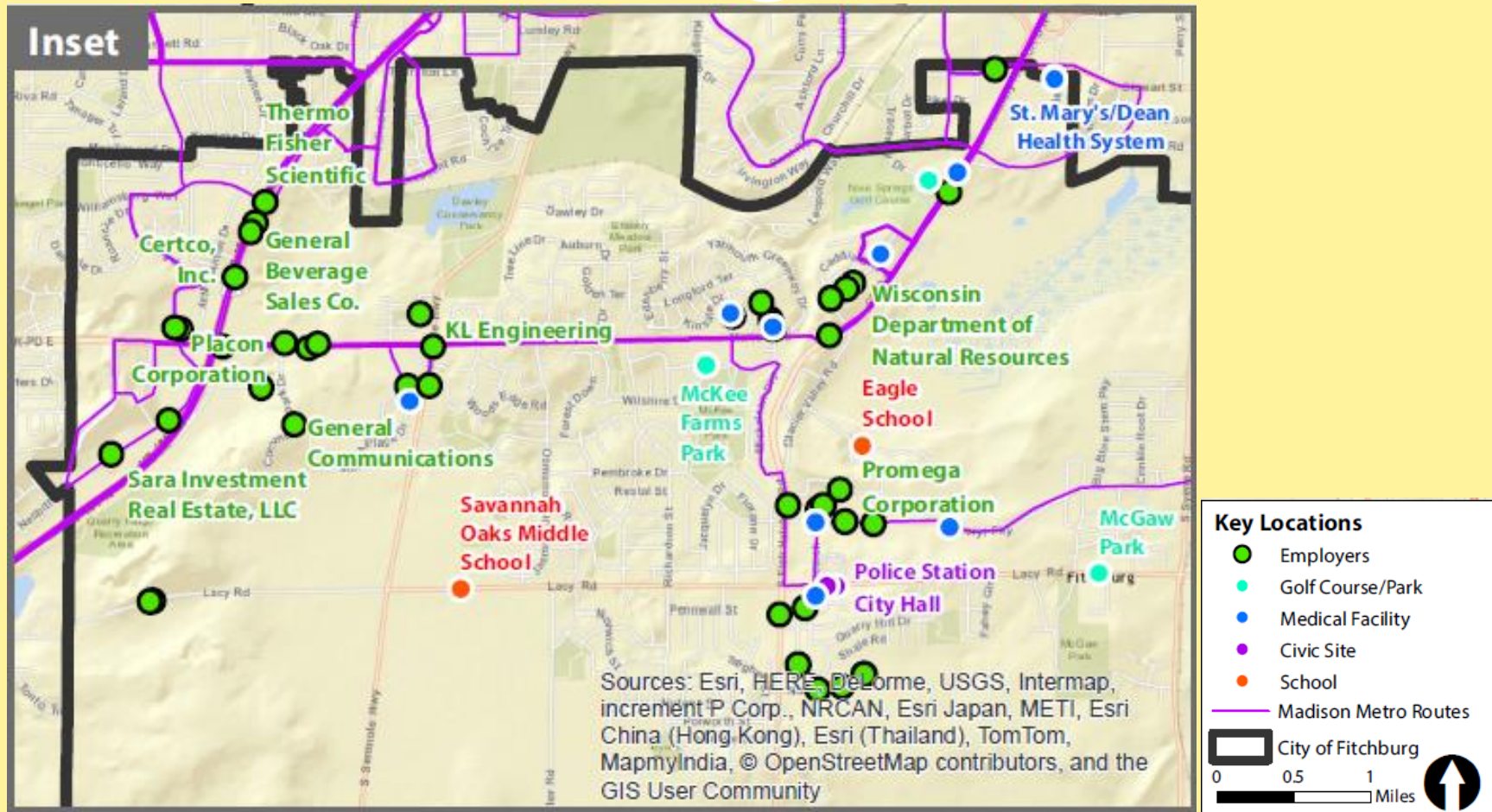


- Many options available that are oriented to downtown Madison and UW campus commuters
- Midday service offered on Metro routes 52 and 40, weekend service offered on Route 59
- Metro Paratransit service ([map](#))
- Approximately 385,000 transit trips per year that have origins and destinations in Fitchburg

Transit Service: Transit Supportive Areas/Gaps



Transit Service: Destinations



Estimates of Demand



3 Methodologies



- Entire scope of demand for transit trips
 - Market Group Model
 - ✦ Assigns trip-rates to populations of older adults, low-income population, people with disabilities, zero vehicle households.
 - Per Capita Trip Rate Model
 - ✦ Based on peer transit system data
 - TAZ-Level Mode Split
 - ✦ Uses census and long-range plan data to estimate a number of transit trips per year

Outputs



Method	Output
Market Group	405,000 annual transit trips
Per Capita	435,000 annual transit trips
Mode Split	475,000 annual transit trips

- Mode split model was selected as it uses local data and represents conditions the best.
- Figures represent theoretical demand for all of Fitchburg, in the current year. Future years will be detailed in the implementation plan.
- Indicate a latent demand of about 80,000-100,000 annual trips

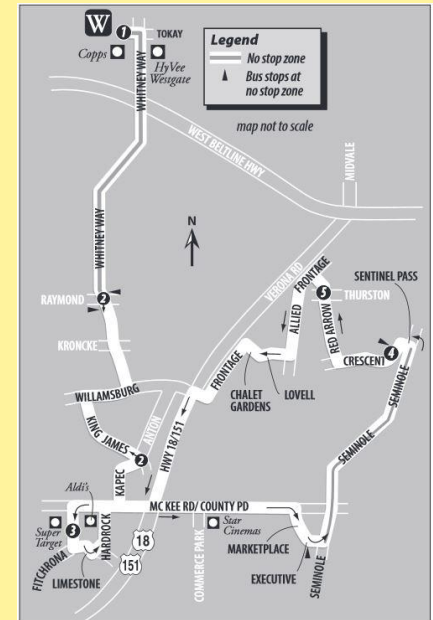
Transit Options



Fixed Route Bus



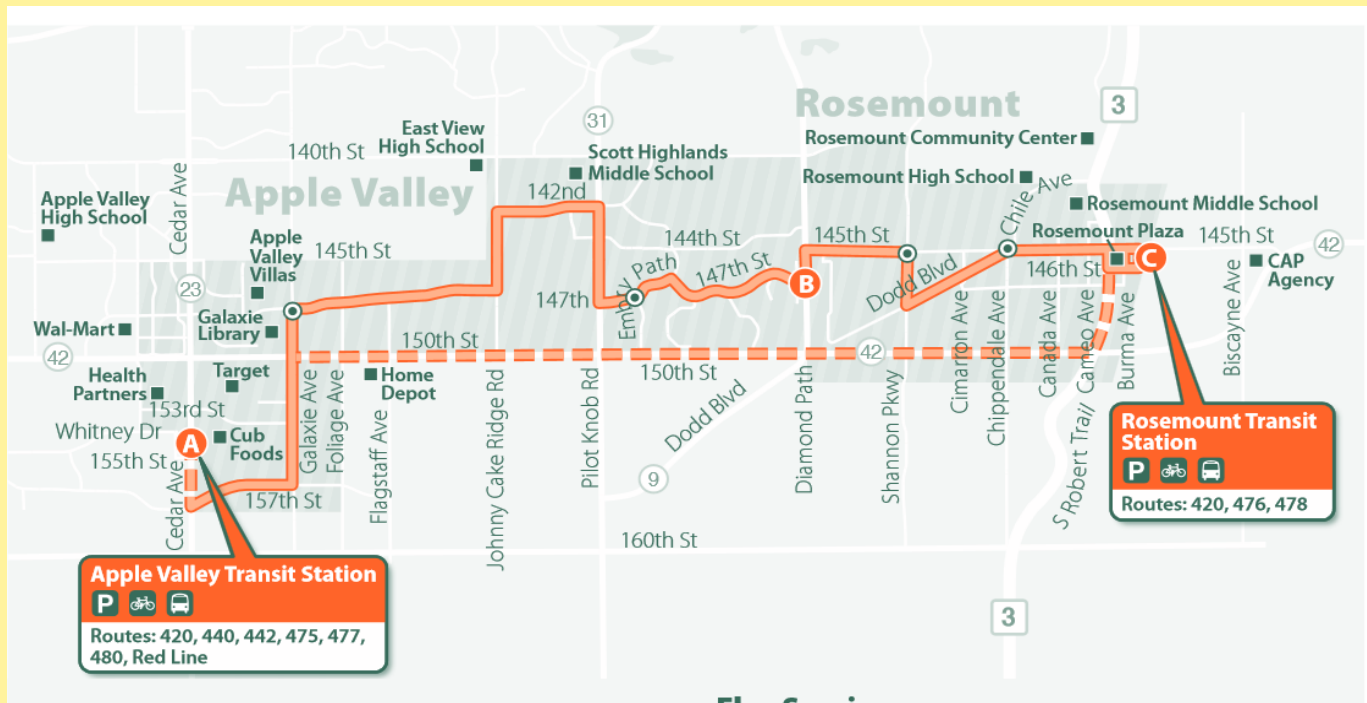
- **Definition:**
Repetitive, scheduled service along a designated route that stops to take passengers to specific locations. Trips serve the same origin and destination.
- **ADA Complimentary Paratransit Service**
- **Regional or Intracity Orientation**



Flexible Bus



- **Definition:**
A hybrid of fixed route and demand response services
Scheduled time points within a zone or corridor, curb-to-curb service



Flex Services

Demand Response or “Shared-Ride-Taxi”



- Any non-fixed route system of transporting individuals that requires advanced scheduling by the customer. Service is curb-to-curb, and does not operate on a route or schedule.



Governance



Option #1: Intergovernmental

- Service is operated and managed by a public partner such as the City of Madison or Dane County
- Not applicable to Shared-ride-taxi

Option #2: City of Fitchburg

- Service is managed by a contractor under the oversight of the City of Fitchburg

Other Parts of the Transportation Network



- Human service transportation
- Volunteer driver programs
- Private taxi service
- Ride-hailing apps
- Car sharing



U B E R



Evaluation



Evaluation Method



Criteria:



Evaluation Criteria



- **Consistency with Regional Policy**
 - Is the transit service project specifically identified in the 2013-2017 Transit Development Plan for the Madison Urban Area? Is the service consistent with recommendations for Madison's "peripheral" areas?
 - Is the transit service project consistent with strategies in local comprehensive plans, long-range transportation plans, Dane County coordinated transportation plan, etc.?
 - How will state, federal, and local funding be invested in the service project?

Evaluation Criteria



- **Operating and Capital Cost**
 - Local administrative costs
 - Total operating cost
 - Total capital cost
 - Local share of operating cost (exclusive of fare revenue)
 - Local share of capital cost

Evaluation Criteria



- Frequency and Estimated Ridership
 - Frequency
 - Estimated annual ridership in third year of operation (first year ridership assumed to be about 50-60% of this)
 - Service productivity and cost effectiveness

Evaluation Criteria



- **Administration**
 - Contract structure (vehicle ownership, operating contract, type of agreement)
 - Grant applications
 - Applicable state/federal reporting and requirements
 - Marketing
 - City of Fitchburg oversight (customer service, contract administration, reporting, financial management)

Evaluation Criteria



- **Markets Served**
 - How do ridership estimates correspond to target markets, and estimated demand?
 - Geographic coverage of service.

Assumptions

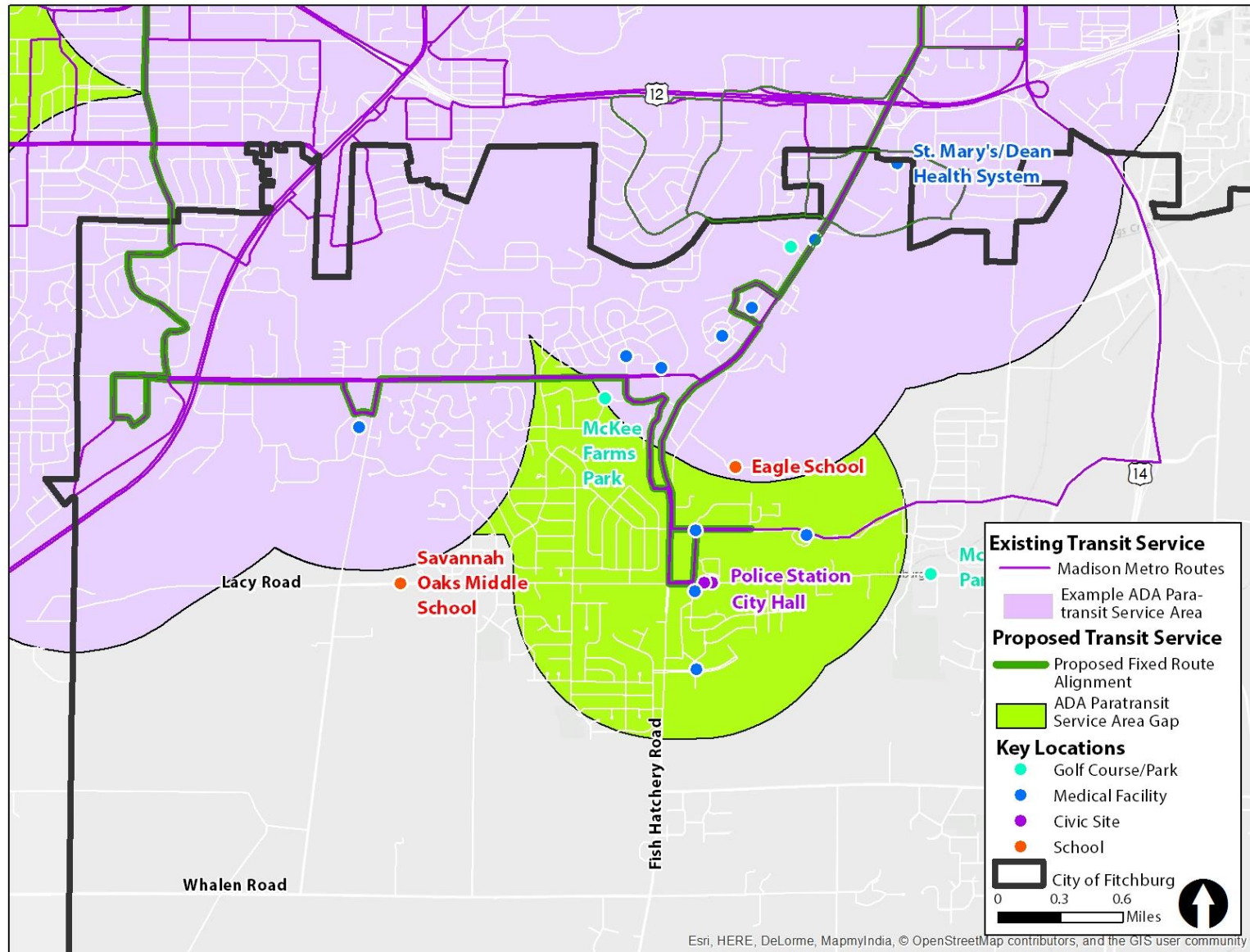


Fixed Route Bus



- Metro Transit operating cost: \$95-\$113 per hour
- Contracted operating cost: \$80 per hour
- Hourly weekday service
- Includes paratransit costs
- Metro Transit service requires 40 ft. heavy duty transit vehicles, contracted service requires large cutaway chassis vehicles
- 10-15 passengers per hour

Fixed Route Bus

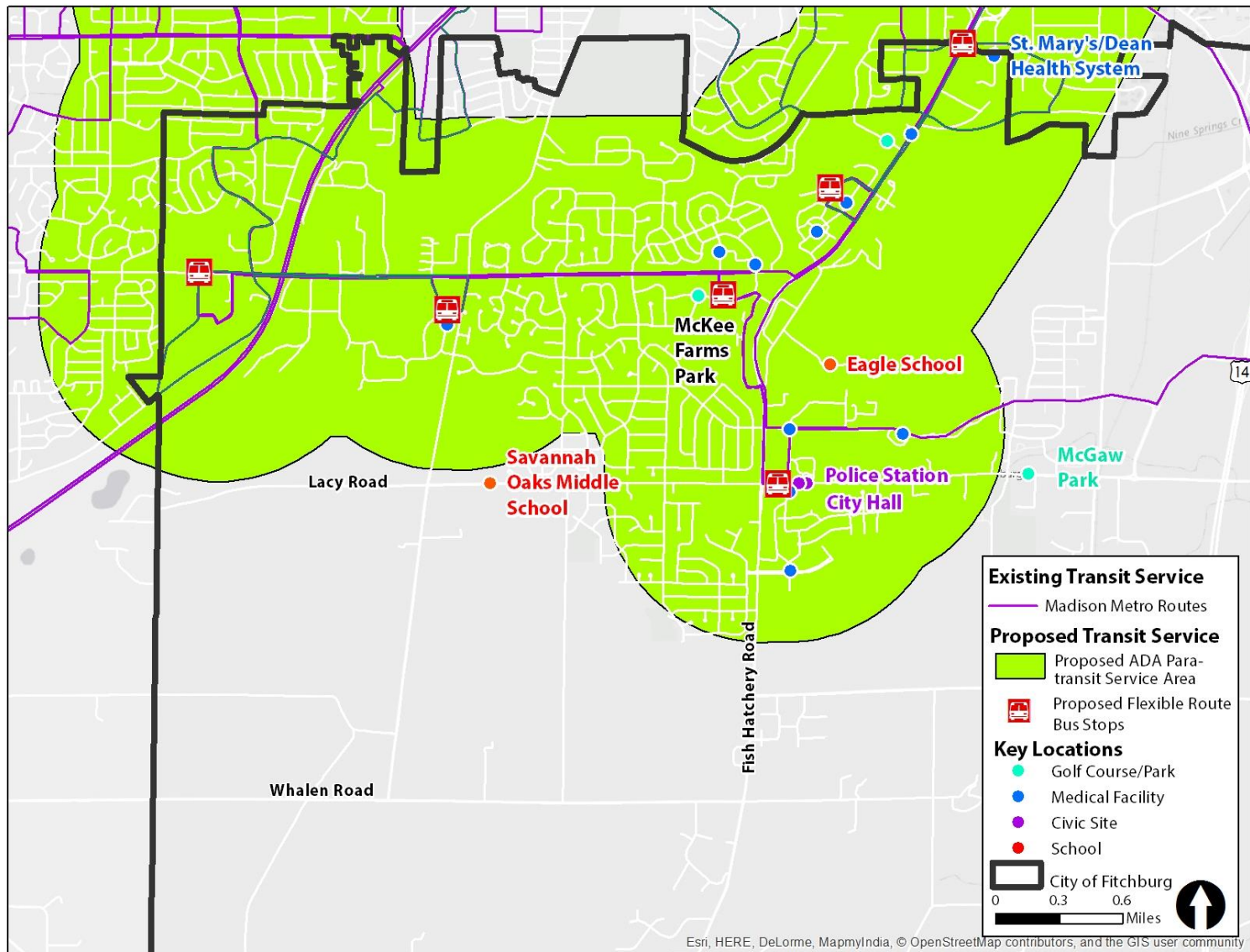


Flexible Bus



- Broad operating cost range: \$45 to \$95 per hour
- Vehicle requirement of 3 medium-duty vehicles
- Hourly weekday service
- 5-7 passengers per revenue hour

Flexible Bus

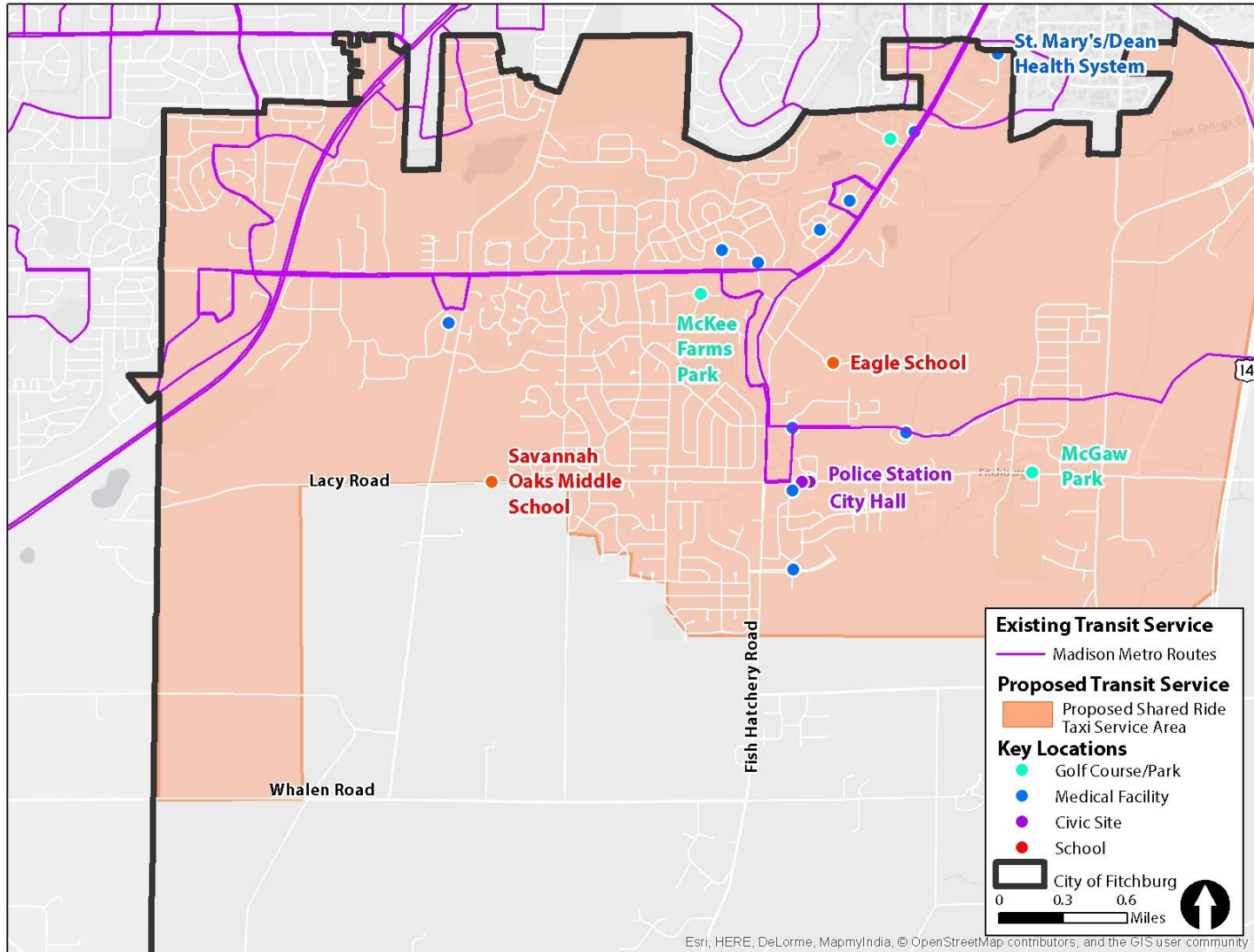


Shared-ride-taxi



- Operating cost: \$35 per revenue hour
- Vehicle requirement of 3 medium-duty vehicles, supplemented with sedans or vans
- 3-5 passengers per hour

Shared-ride-taxi



Results



Results



MODE, OPERATOR, ORIENTATION	Regional Policy	Cost	Frequency and Ridership	Admin	Markets Served
Fixed Route, Metro, Regional	●	□	●	●	●
Fixed Route, Metro, Intracity	⊙	□	⊙	●	□
Fixed Route, Private Contractor, Regional	●	⊙	●	□	●
Fixed Route, Private Contractor, Intracity	⊙	⊙	⊙	□	□
Flexible Bus, Metro or County, Regional	●	□	□	⊙	●
Flexible Bus, Metro or County, Intracity	●	□	□	⊙	●
Flexible Bus, Private Contractor, Regional	●	⊙	●	□	●
Flexible Bus, Private Contractor, Intracity	●	●	●	□	●
Shared-Ride-Taxi, Private Contractor, Intracity	●	●	□	●	⊙

Discussion



- If all evaluation criteria are weighted equally, two transit modes perform the best:
 - Regionally oriented fixed-route transit operated by Madison Metro Transit
 - Locally oriented flexible bus service operated by a private contractor
- Local service can build a market for future regionally oriented service

Discussion



- **Transit project requirements**
 - Fare and schedule coordination with Madison Metro Transit
 - Marketing plan and program, especially for new transit modes
 - Regional coordination
- **Questions**
 - Are there any service concepts that we have not discussed that should be included?
 - Are there any screening criteria that should be weighted higher?
 - Comments that can guide staff and consultant team in developing an implementation plan.

Questions and Discussion



Next Steps



- Meet with staff to outline service project that will be outlined in implementation plan
- Determine what is feasible for administration and cost
- Conduct outreach to regional partners
- Develop draft final report with detailed implementation plan
- Present to City of Fitchburg 2/25/15

Fitchburg Intra-City Transit Study



CITY OF FITCHBURG

PROJECT UPDATE

FEBRUARY 25, 2015



Project Overview



- Part 1: Assess Fitchburg's transit market
- Part 2: Estimate demand for transit service
- Part 3: Present and evaluate different types of transit service
- Part 4: Develop implementation plan
- Part 5: Submit final report



Existing Conditions

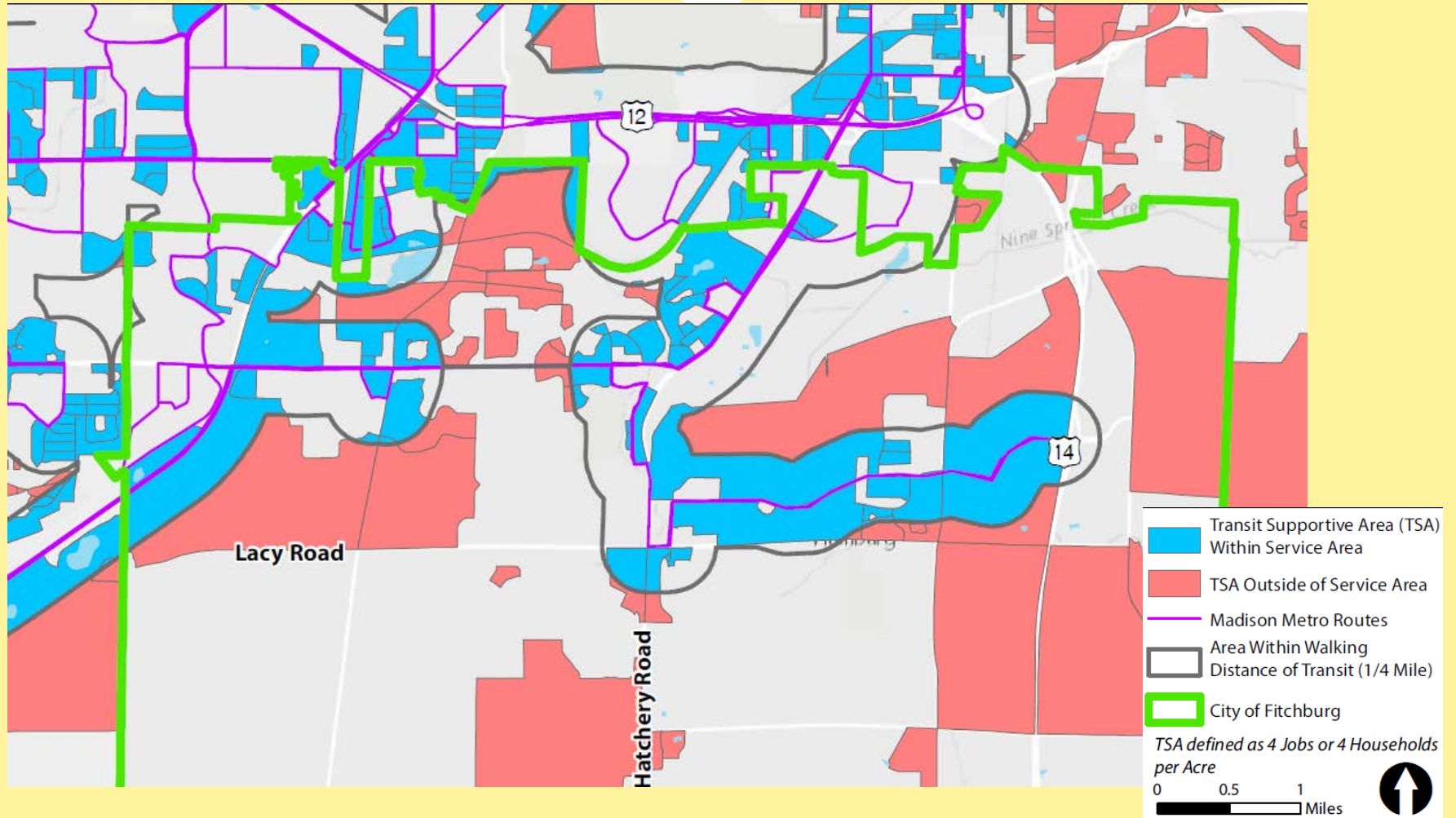


Transit Service



- Many options available that are oriented to downtown Madison and UW campus commuters
- Midday service offered on Metro routes 52 and 40, weekend service offered on Route 59
- Metro Paratransit service ([map](#))
- Approximately 385,000 transit trips per year that have origins and destinations in Fitchburg

Transit Service: Transit Supportive Areas/Gaps



Estimates of Demand



3 Methodologies



- **Entire scope of demand for transit trips**
 - **Trip Rate Hybrid Demand Model**
 - ✦ Assigns trip-rates to populations of older adults, low-income population, people with disabilities, zero vehicle households.
 - **Peer System Passengers per Hour Model**
 - ✦ Based on peer transit system data
 - **MPO Model – Mode Split**
 - ✦ Uses census and long-range plan data to estimate a number of transit trips per year

Outputs



Method	Output
Minnesota Hybrid Demand	405,000 annual transit trips
Minnesota Passenger	435,000 annual transit trips
Mode Split	475,000 annual transit trips

- Mode split model was selected
- Figures represent theoretical demand for all of Fitchburg
- Indicate a latent demand of about 80,000-100,000 annual trips

Most Promising Transit Options



Evaluation Method



Criteria:



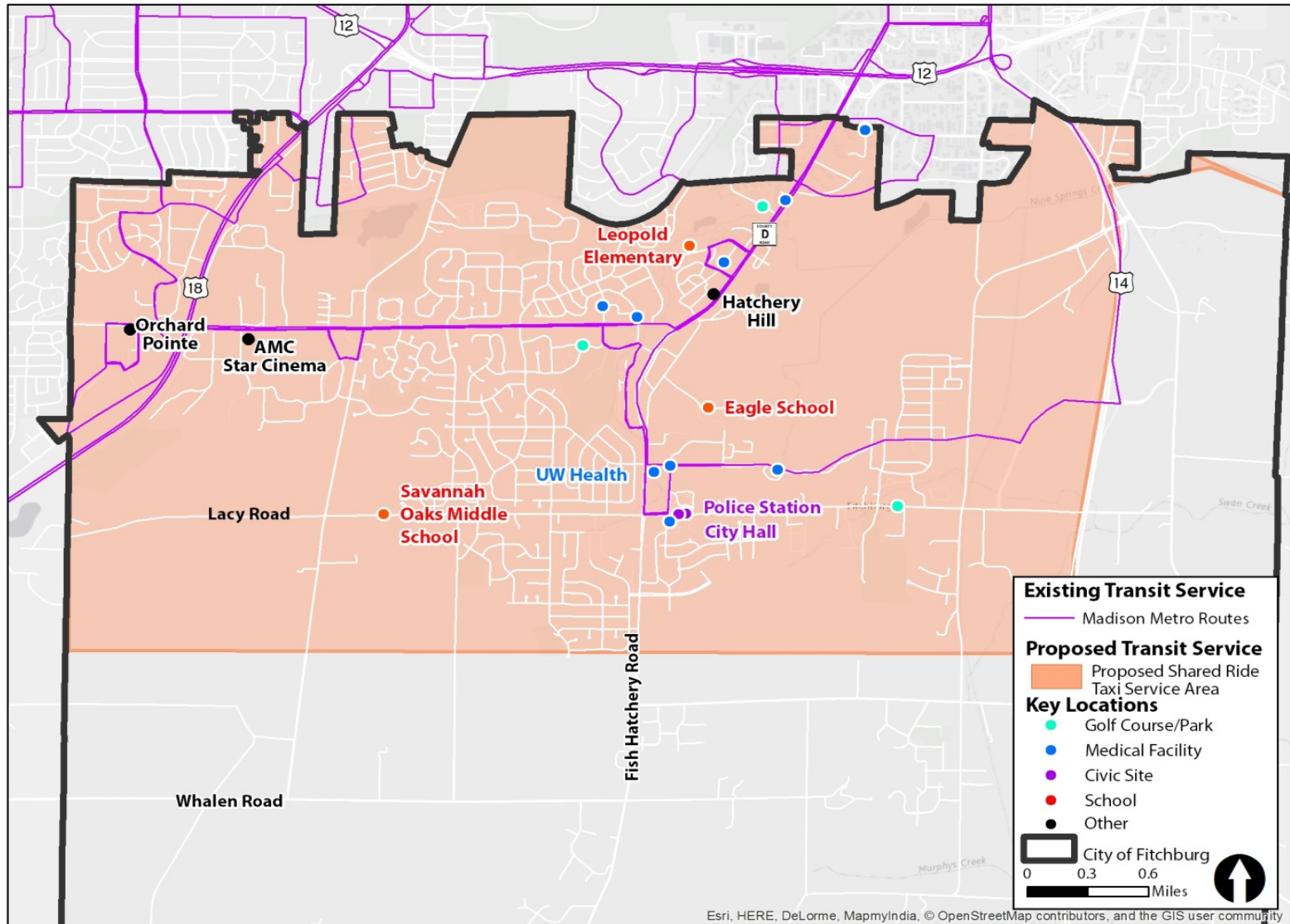
Demand Response or “Shared-Ride-Taxi”



- Any non-fixed route system of transporting individuals that requires advanced scheduling by the customer. Service is curb-to-curb, and does not operate on a route or schedule.



Demand Response or “Shared-Ride-Taxi”



Demand Response or “Shared-Ride-Taxi”



Advantages

- Lowest overall operating and capital costs
- Ability to cover a broad geographic area, areas that are difficult to serve by bus
- Develops a customer base and point of data collection
- Lowest staff administration efforts

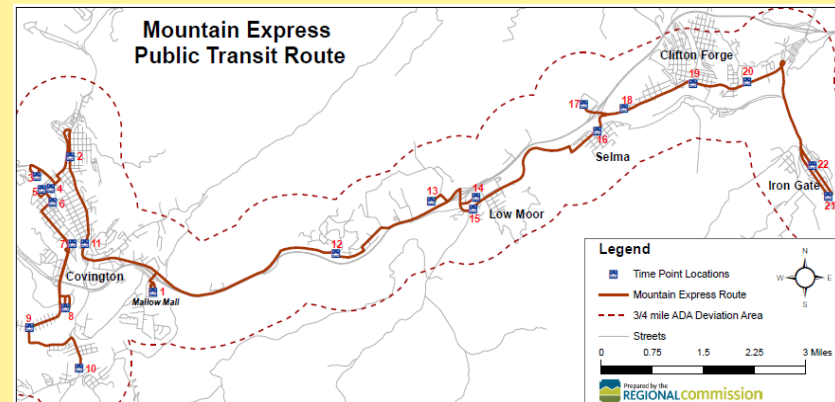
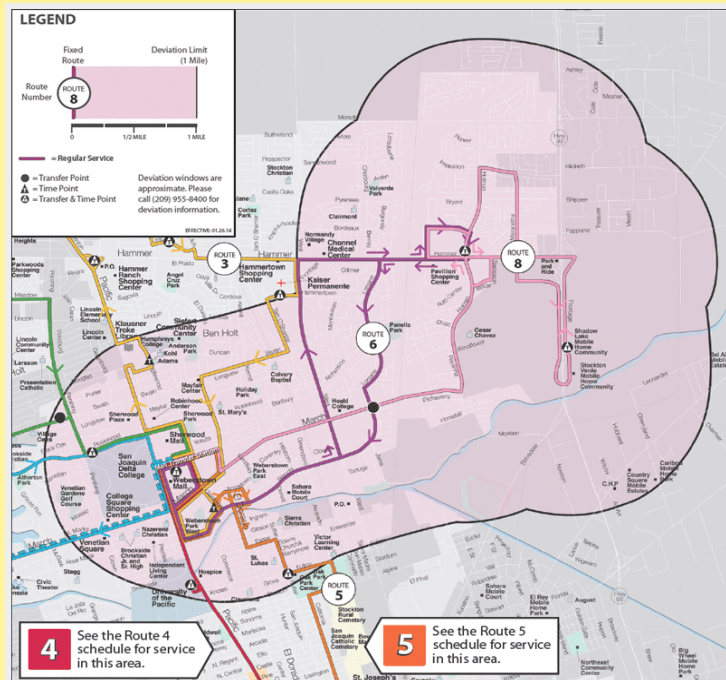
Disadvantages

- Capacity constrained, smaller vehicles and low passengers per hour
- Typically does not attract a “choice rider,” caters to people who rely on transit
- Most challenging to coordinate with Madison Metro Service
- User must always initiate pick-up

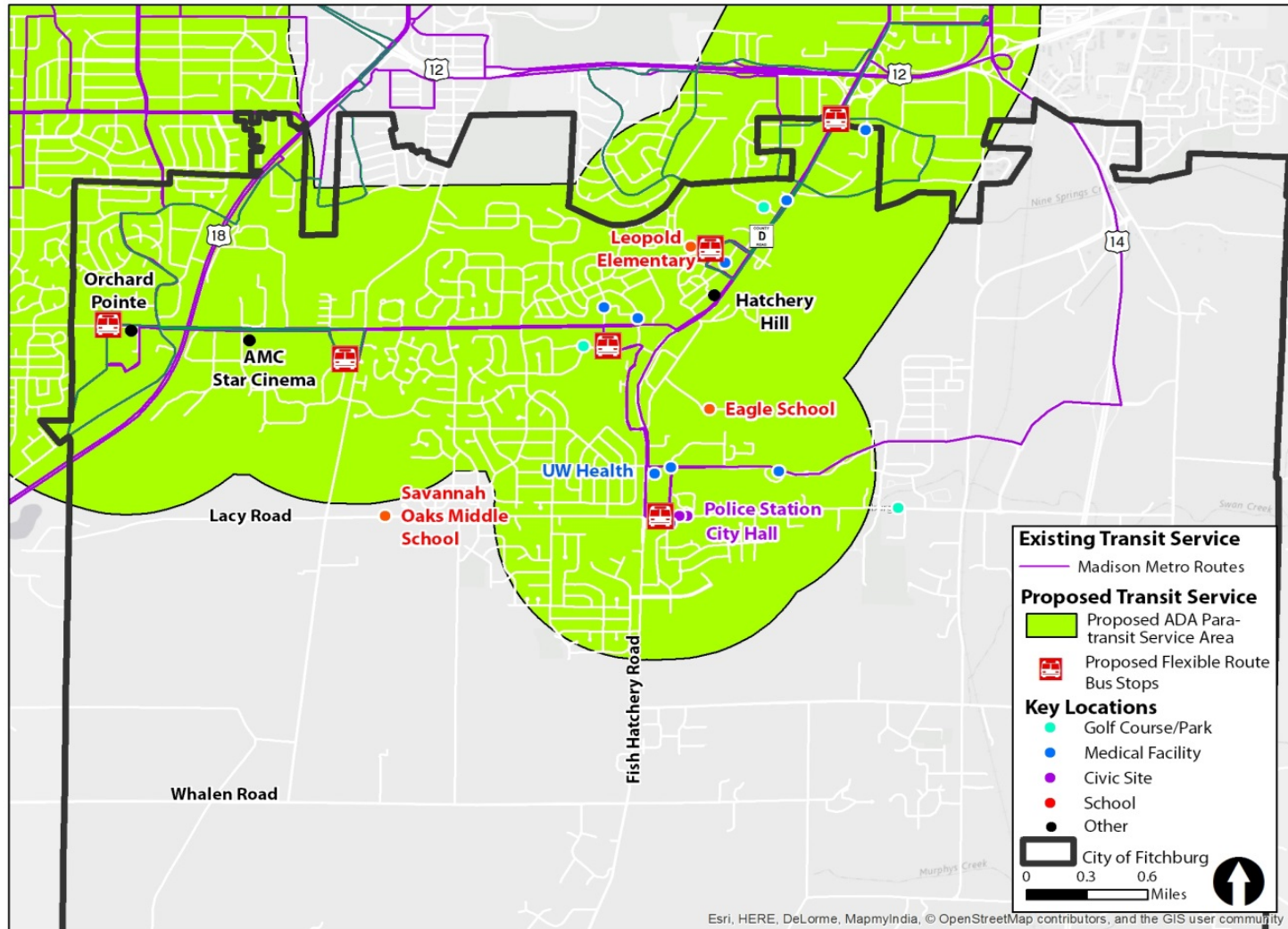
Flexible Bus – Contracted Service



- **Definition:**
A hybrid of fixed route and demand response services
Scheduled time points within a zone or corridor, curb-to-curb service



Flexible Bus – Contracted Service



Flexible Bus – Contracted Service



Advantages

- Lower cost per rider than shared-ride-taxi
- Offers more flexibility than a fixed route service
- Can serve low density development
- Transfers to Madison Metro transit are feasible
- Schedules and stops provide a visible service

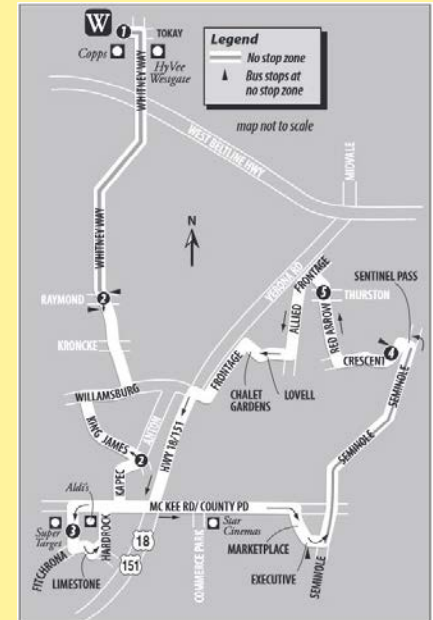
Disadvantages

- Service product is new to the region, will require the most promotion and outreach
- Limited regional connections
- City and contractor resources devoted to administration
- Potential long-term commitment to providing demand response transit

Fixed Route Bus – Madison Metro



- **Definition:**
Repetitive, scheduled service along a designated route that stops to take passengers to specific locations. Trips serve the same origin and destination.
- **ADA Complimentary Paratransit Service**



Fixed Route Bus– Madison Metro



Advantages

- Highest ridership benefit
- Technology
- Technical and administrative capacity of Madison Metro
- Ease of regional connections
- Fast east-to-west service

Disadvantages

- Greatest overall operating cost
- Depends on Madison Metro capital resources
- Cannot serve low density areas efficiently

Operating Cost Estimates

Option	Weekday Service (6:00a.m. to 6:00p.m.)	Weeknight Service (6:00p.m. – 10:00p.m.)	Saturday Service (10:00a.m. – 2:00p.m.)
Shared-Ride-Taxi Total Annual Operating Expenses (est.)	\$320,000 - \$360,000	\$70,000 - \$80,000	\$15,000 - \$17,000
Flexible Bus Total Annual Operating Expenses (est.)	\$405,000 - \$585,000	\$135,000 - \$195,000	\$18,000 - \$28,000
Fixed Route Bus Annual Operating Expenses (est.)	\$580,000 - \$680,000	\$190,000 - \$226,000	\$40,000 - \$48,000
Local Share	34 percent	39 percent	39 percent
Fare and Other Revenue	15 percent (Fixed Route = 20 percent)	10 percent	10 percent

Projected Ridership – Third Year



- Demand Response : 36,000 – 60,000 annual trips
- Flexible Bus: 60,000 – 80,000 annual trips
- Fixed Route: 80,000 + annual trips

Other Parts of the Transportation Network



- Human service transportation
- Volunteer driver programs
- Private taxi service
- Ride-hailing apps
- Car sharing



U B E R



Implementation



Implementation Steps



- **Step #1: Submit letter of intent to WisDOT**
- **Step #2: Determine preferred transit mode**
- **Step #3: Finalize transit service area**

Implementation Steps



- **Step #4: Secure local share of operating funds**
- **Step #5: Apply for state aid**
- **Step #6: Draft request for proposals, develop marketing plan**

Implementation Steps



- **Step #7: Award and negotiate contract with transit provider**
- **Step #8: Implement transit service and monitor subcontractor performance**

Additional Considerations



- Marketing, outreach, partnerships



Introducing the new Wisconsin app!

Version 2 of the university's official mobile app has undergone such a major update that it comes with a new name. "Mobile UW" is now the "Wisconsin" app, featuring a sharp interface and handful of new options. Update or install via the [iTunes App Store](#) or [Google Play](#).

[Read more about the new app >](#)



Questions and Discussion



Next Steps



- Assemble and submit final report
- Conclude project mid-March