

SECTION 4 - Transit Development Plan ▶▶▶▶

Introduction

This section describes improvements and planning activities that are planned to take place between 2013-2017. Some actions – particularly long range items like expanding the Metro Transit maintenance facility and implementing bus rapid transit – will likely extend beyond the traditional limits of the TDP planning horizon; however, specific activities are planned within the next five years that are necessary to eventually achieve those outcomes.

Transit Service Planning Guidelines and Performance Standards

Transit planning guidelines and performance standards for the fixed-route system have been developed as part of the TDP to guide short- and long-term transit planning activities and to publish expectations for transit system characteristics and performance. The guidelines are not intended to be a rigid document, and deviations from it are to be expected. However, transit planning guidelines provide direction and parameters for agency staff in designing services, making facility improvements, and identifying unmet needs. Use of performance standards ensures service is being provided as efficiently and effectively as possible. The guidelines and standards provide a consistent approach to issues, requests, and concerns that may arise with regards to service and facilities. Also, transit planning based on such guidelines has the potential to improve transparency in the decision-making process.

The transit service planning guidelines and performance standards are included in Appendix A. The planning guidelines are general in nature and mainly address basic transit planning concepts such as routing, service levels, and facilities. The chapters include:

1. Introduction
SECTION 1 – FIXED ROUTE TRANSIT SERVICE PLANNING/DESIGN GUIDELINES
2. Route Classification
3. Route Alignment
4. Service Frequency
5. Service Span
6. Bus Stops
7. Service Change Prioritization
8. Detours
- SECTION 2 – PERFORMANCE STANDARDS
9. Service Coverage / Route Justification
10. Scheduling / On-Time Performance

The performance standards in Section 2 of Appendix A detail expectations that can be reasonably met for fixed-route transit service. All new and existing service should meet, come close to meeting, or be expected in the future to meet these standards.

2013-2017 Transit Development Plan Recommendations

The TDP recommendations are outlined below. They are grouped into three areas; (a) Service Planning, Facilities, and Other Recommendations; (b) Fixed-Route Service Improvements; and (c) Regional Express Commuter Service.

Service Planning, Facilities, and Other Recommendations

Transit Planning and Service Development

1. Adopt the Transit Service Planning Guidelines and Performance Standards in Appendix A and use as a guide for annual service adjustments.
2. Continue Metro Transit staff involvement in City of Madison land use planning and development review processes to promote transit-supportive development in areas where transit service is envisioned in the future. Encourage other communities to also involve Metro staff in their planning and review processes.
3. MPO staff should work with Capital Area Regional Planning Commission (CARPC) staff to integrate transit service planning considerations into CARPC's Future Urban Development Analysis plans being developed in cooperation with local communities.
4. Improve the utility of existing transit service by improving the directness and frequency of routes where appropriate.
5. Extend service to transit supportive areas that are currently unserved by transit, including new commuter express service.
6. Improve transit service performance monitoring by maintaining area-specific ridership information and adding on-time performance as part of the monitoring program.

In addition to the monthly route productivity reports, consider publishing more detailed performance reports. These reports would

separate time of day (peak, mid-day, weekend), segment diametrical routes, and combine paired one-way routes. Update the stop-level ridership information as needed. Track and report on-time performance for fixed-route transit service system-wide and by route, as practical and appropriate.

7. Optimize transit schedules to reduce overcrowding and bus clumping while enhancing connections at the transfer points and in other places.
8. Develop and improve transfers outside the transfer point system where routes intersect or have common routing.

Coordinate schedules and provide facilities at bus stops as appropriate.

9. Explore the feasibility of point-deviation and other alternative service delivery methods.

Transit Facilities Development

10. Adopt a bus stop consolidation program to remove or relocate excessive bus stops in central Madison, particularly on the Jenifer Street, Johnson Street, Gorham Street, and Monroe Street corridors.

This project is needed to bring these corridors into compliance with the Transit Planning Guidelines of spacing bus stops, in general, between 3/16- and 1/4-mile (990 to 1,320 feet) apart. The stop consolidation program should include substantial public outreach and sufficient

data collection and analysis to identify the appropriate bus stops for removal or relocation.

11. Develop a comprehensive bus stop inventory to identify and track facilities such as boarding platforms, benches, shelters, schedule information, and signage, along with information on pedestrian access and significant nearby land uses. Use the inventory, boarding information, and socioeconomic data to help prioritize facility improvements.

This information would be used to assess the facility needs throughout the system. Existing databases track the location and presence of a shelter. This should be expanded to include the shelter type, presence of a bench, platform surface, sidewalk needs, ridership information, signage information, presence of schedule information, and other variables.

12. Add boarding platforms, shelters, benches, and other passenger facilities as appropriate given the usage characteristics at bus stops.
13. Coordinate with the City of Madison Engineering Department, City of Madison Traffic Engineering Division, and other local jurisdictions to implement pedestrian facility improvements and transit-supportive roadway changes. These include bus lanes, in-lane bus stops, relocation of near-side bus stops to far-side, and traffic signal and other operational changes to reduce unnecessary delay for buses.



A bus rapid transit operated by Community Transit in Snohomish County, WA.



A 60-foot articulated bus operated by the Chicago Transit Authority.

- 14. Work with the City of Madison, University of Wisconsin-Madison, and others to locate a new inter-city bus terminal.

The new bus terminal should be in a location that is easily serviceable by transit without adding new routes or introducing splits and deviations.

- 15. Work towards making all bus stops ADA compliant.

Install concrete boarding platforms and work with other City of Madison departments and local jurisdictions to complete the sidewalk network along transit routes, including crosswalk improvements.

- 16. Double-sign, relocate, or close near-side bus stops to improve the operating environment and reduce confusion.

Double-signing, or installing stand-alone "No Parking" signs in conjunction with the bus stop sign, allows the bus stop sign to be relocated to the boarding platform and may reduce illegal parking. Relocating or closing near-side bus stops has several benefits, including reduced conflict with right-turning traffic and crossing pedestrians.



A near-side bus stop has been "double signed," replacing the single sign with "BOARD BUS AT CORNER" This design is less confusing for passengers trying to find the correct place to wait.

Medium to Long Range Transit Planning

17. Increase the capacity of the bus garage and/or construct a new facility.

Increasing bus garage capacity is necessary for the expansion of the transit system envisioned by this Transit Development Plan. A planning effort is underway that may recommend expanding the existing facility at 1101 E. Washington Avenue and/or building one or more new facilities. Locations of new facilities should be chosen in south and/or west Madison to reduce deadheading. Pursue short-term solutions to facilitate day-to-day operations and expand the fleet to accommodate new service. Develop site analysis criteria to prioritize expansion concepts.

18. Develop concepts for bus rapid transit (BRT) and plan for its implementation in the next five to ten years pending the outcome of the Transit Corridor Study (BRT Study). See Figure 44 illustrating a potential BRT system.

The Transit Corridor Study, expected to be completed in early 2013, will likely recommend four corridors for bus rapid transit development: University Avenue to West Towne Mall, Park Street to Fitchburg, East Washington Avenue to East Towne Mall, and Sherman Avenue to north Madison. Potential future extensions (e.g., to the new UW Research Park, Middleton, and east Madison) will also be identified.

19. Expand the capacity of the park-and-ride lot at the North Transfer Point and construct additional formal park-and-ride lots near transfer points and at other locations where opportunities arise.

Plan for new owned or leased park-and-ride lots and provide new commuter service to existing under-utilized park-and-ride lots such as Lot 13-02 in east Verona and 13-04 in the American Center. New park-and-ride lots should be located in areas that can easily be served by existing routes.

Metro Paratransit Service

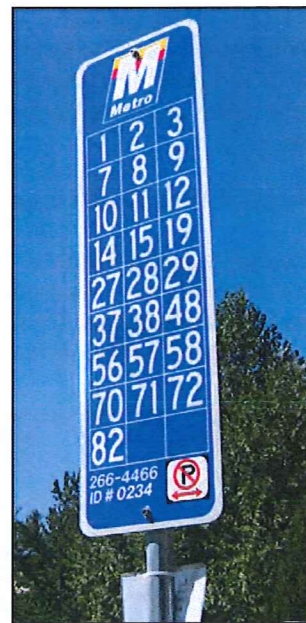
20. Continue to coordinate with other specialized transportation services to provide the best service for passengers while eliminating duplicative service.
21. Continue training programs and incentives and investigate other innovative ways to encourage the migration of passengers from paratransit to fixed-route service.

22. Continue to work with paratransit riders, employers, staff, and service agencies to efficiently schedule trips and combine rides when practical.

Metro Fleet

23. Diversify the fleet with 30-foot and 60-foot articulated buses pending the outcome of the Bus Size Study.

The Bus Size Study is expected to be completed in 2013. It may recommend diversifying the fixed-route bus fleet with smaller and larger buses to match the demand. This change could reduce Metro's costs by reducing fuel consumption and reducing the number of extra bus trips. Larger buses may reduce the number of standees and pass-ups on busy routes. Smaller buses may also improve Metro's image by having fewer empty seats on some peripheral routes.



Many overlapping routes converge in central Madison: core routes with all-day service, as well as peak-period only commuter routes, weekend-only routes, and campus circulators. Consolidating overlapping services and improving the clarity of the signage and information improves the usability of the system for new and occasional riders.



A bus, bicycle, and right-turn only lane on Mineral Point Road.

24. Reduce emissions by purchasing alternative-fueled vehicles and reducing unnecessary idling.

Hybrid-diesel buses have been shown to reduce fuel and maintenance costs. Other fuel options, such as compressed natural gas, should be explored.

25. Replace the current fare boxes with modern units.

The existing fare boxes have reached or exceeded their life expectancy. New fare boxes are expected to reduce Metro's maintenance costs and to increase its fare revenue due to fewer instances of fare boxes being out of order. Replacement fare boxes should include the ability to deploy contactless smart cards that have greater flexibility in storing monetary credit, purchased rides, passes, and transfers. New technology also could allow riders to pay fares with smart phones.

Passenger Information and Marketing

26. Improve the System Map and Ride Guide to optimize their legibility and accuracy.

Consider innovative mapping strategies like assigning colors, line types, or line weights based on the route classification and identifying a "Frequent Transit Network" consisting of transit corridors with consistent 15-minute or better service throughout the weekday.

27. Add static schedule information to unsheltered bus stops that receive moderate to heavy use, and electronic real-time arrival displays to very heavy-use bus stops.
28. Maintain, support, improve, and expand online transit tracking and trip planning data and services such as Metro Transit Tracker, Google Maps, BusRadar, and Mobile UW.

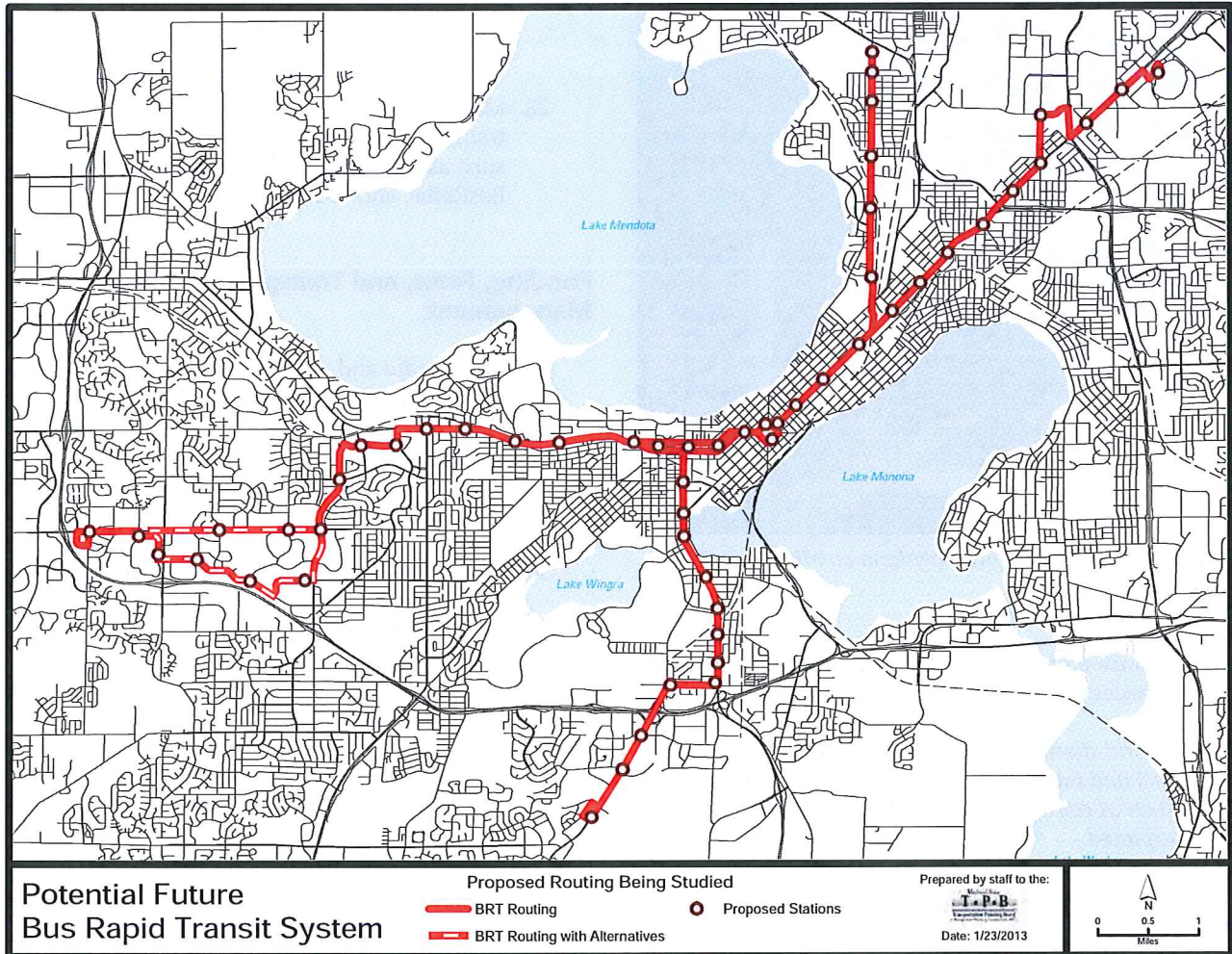
Funding, Fares, and Transportation Demand Management

29. Collaborate and negotiate with transit partners to ensure that the transit system is funded equitably. Work collaboratively with communities within and around the service area to coordinate Metro Transit's service with other transit systems and/or work to recruit them as transit partners.
30. Maintain a fare structure that is equitable, affordable, and capable of maintaining adequate service levels.
31. Continue efforts to maximize public and private funding sources.

Examples include advertising, the incorporation of transit facilities as part of new developments or impact fee/special assessment programs for roadway improvements, and the private sponsorship of bus shelters or new service to employers.

32. Continue efforts to reach regional agreement on a new finance and governance structure, such as a representative regional transit authority, for regional transit service.
33. Continue to support and expand the unlimited ride pass programs and Commute Card program, and coordinate with other alternative transportation promotion efforts by Metro, the Madison Area Transportation Planning Board (MPO), and other agencies and organizations.

Figure 44



Fixed-Route Service Improvements

The potential future service change concepts presented in this Transit Development Plan to summarize minor to moderate modifications that have been identified by staff and others to potentially address the inconsistencies between the existing transit system and the Transit Planning Guidelines. They range from small adjustments and extensions to more systematic changes that involve restructuring several different routes. Major system-wide restructuring concepts involving changes to the transfer point system and the introduction of bus or rail rapid transit systems are not anticipated to be feasible within the five year planning horizon of the TDP.

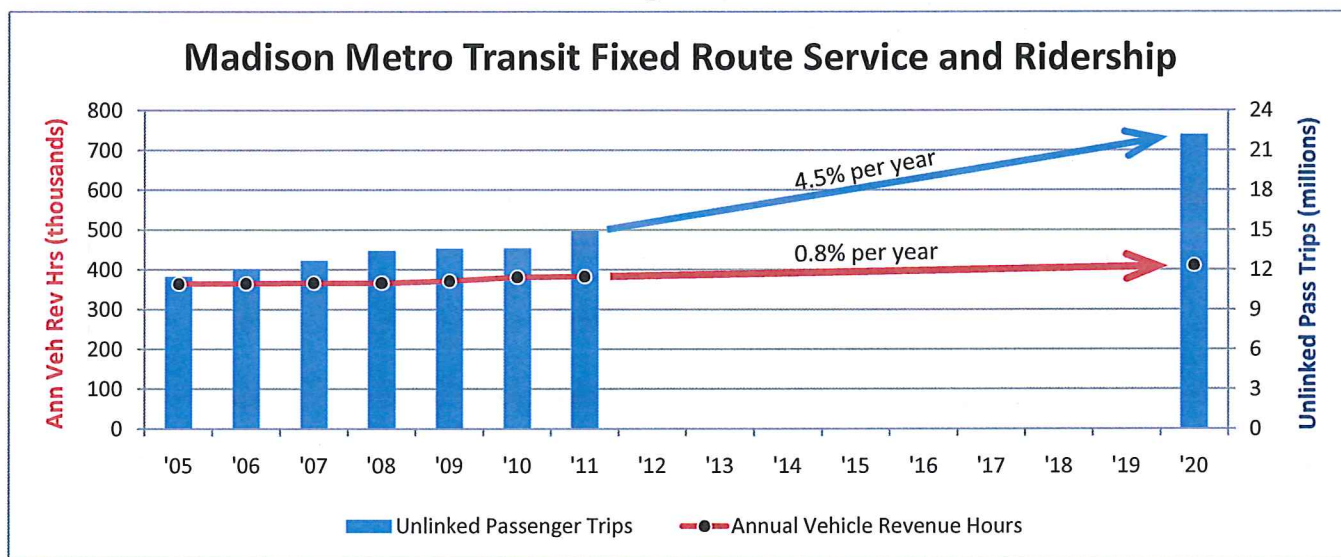
Metro Transit's fixed-route ridership has been growing at an average rate of about 4.5% per year since 2005 while revenue vehicle hours have been increasing at about 0.8% per year. With the exception of reductions to UW-Madison campus bus service in 2012 and some associated loss in ridership, these trends are generally expected to continue, with year-to-date ridership in October 2012 outpacing year-to-date October 2011 ridership for fixed-route, non-campus circulator service. At this rate, year 2020 service would consist of about 412,000 annual service hours with 22.2 million rides; ridership would double by about 2027 as shown in Figure 45. Overcrowding issues that are becoming more severe show that this disconnect between ridership growth and service growth is not ultimately sustainable. Because of this, many of the fixed-route service improvements listed in this TDP are not possible with today's funding, and are shown as potential expansions should funding become available.

Potential service changes are presented in three categories: Priority 1 (short term, 1-3 years), Priority 2 (medium term, 3-5 years), and Priority 3 (long term, new service as development and funding allow). These are not intended to be rigid categories, but they are intended to separate desirable or needed improvements to today's transit service from longer range improvements that are more conceptual in nature. Metro regularly monitors and adjusts its service through annual service changes that are vetted through the City of Madison Transit and Parking Commission, local units of government, and the public. These potential changes would need to go through the same process before implementation.

These potential future service changes were developed by Metro and MPO staff in coordination with the TDP steering committee, including representation from potentially affected municipalities. Additional details about each potential change, as well as the intent and rationale for each, are outlined in Appendix B.

The potential future service change concepts, along with their estimated annual costs, are outlined in Tables 14-16. Cost estimates are based on the number of buses in service for several different time periods, including a.m. and p.m. peaks, weekday mid-day, weekday evenings, and weekends. These time periods are estimated at 3 hours for each peak period, 6 hours for the weekday mid-day, 6 hours for the weekday evening, and 16 hours for each Saturday or Sunday. A year is estimated to have 250 weekdays and 115 weekends (Saturdays, Sundays, and holidays). The estimated cost for service is \$75 per hour – an increase over Metro's general estimates for marginal service changes of \$60-65 per hour, but less than Metro's fully allocated cost of \$110 per service hour.

Figure 45



Note: Projected annual vehicle revenue hours and unlinked passenger trips for Metro Transit, assuming service levels and ridership continue to rise at the same rate they did between 2005 and 2011.

**Table 14
Priority 1 (Short-Term) Potential Fixed-Route Transit Improvements**

Priority 1 Short-Term (1-3 years)						
Index	Routes	Action	Cost *	Goals	Annual Cost **	Annual Hrs
1-1	2, 3	Eliminate Sherman via (Route 2) and Division via (Route 3). All trips operate via Fordem and Winnebago, respectively.		4	\$0	0
1-2	6, 20	Eliminate Route 6 Hayes via, all trips operate via MATC. Reroute Route 20 via Portage and Hayes.		2, 3, 4, 5, 7, 8, 10	\$0	0
1-3	12	Eliminate routing on Lake Point and Waunona.		2, 8, 10	\$0	0
1-4	27, 29	Eliminate Route 29, extend Route 27 to Dane County Regional Airport and North Towne Center P&R.		2, 4, 7, 8, 10	\$0	0
1-5	14, 15, 25, 27	Establish an express stop pattern on East Washington Avenue from the Capitol Square to Milwaukee Street.		2, 3, 8, 10	\$0	0
1-6	11, 15, 56, 57, 71, 72, 74	Establish an express stop pattern on University Avenue from the UW to Segoe.		2, 3, 8, 10	\$0	0
1-7	2	Improve weekday peak and mid-day service to every 15 minutes between the West Transfer Point and Capitol Square.	\$\$\$ MD	3, 4, 5, 9, 10	\$337,500	4,500
1-8	9, 10, 33	Reduce the number of buses in the mid-day rotation from six to four, restructure to eliminate service west of UW campus, duplicative service on Johnson / Gorham, and Route 33.	-\$ MD	8	-\$225,000	-3,000
1-9	14, 15, West Madison	Extend a new peak-only route to Colony Drive and west Madison, similar to the peak-period Route 14 routing west of Rosa Road. Reroute the peak-period Route 14 to be similar to the mid-day Route 14, and reroute routes 14 and 15 from Sheboygan Avenue to Regent Street and Old Middleton Road, respectively.	\$\$\$ PK	2, 3, 5, 10	\$337,500	4,500
1-10	3, 6, 7	Convert Route 7 to Route 3 on weekends. Reduce Route 6 weekend headways from 60 to 30 minutes.	\$\$\$ WD	1, 2, 3, 4, 6	\$414,000	5,520
1-11	8, 78	Combine routes 8 and 78 into one route from the Capitol Square to Middleton via Bluff. Extend Middleton service to include Sundays.	\$ Sundays	2, 4, 6, 8, 9	\$69,000	920
1-12	11, 12, 39	Extend routes 11 and 12 (peak) and Route 39 (off-peak) to Owl Creek.	\$ PK, WD 0.5 \$ MD, EV	6, 9	\$225,000	3,000
1-13	16	Reduce weekday headways from 60 to 30 minutes throughout the weekday.	1.5 \$ MD, EV	1, 2, 4, 9	\$337,500	4,500
1-14	18, 40	Reroute Route 18 via Coho to the Beltline Highway between the South Transfer Point and Seminol Highway. Restructure Route 40 so that alternating trips are based out of the West Transfer Point.	0.5 \$ PK, MD \$ EV, WD		\$363,000	4,840
1-15	28	Reduce headways from 10-15 minutes to 7.5 minutes during the school year from the NTP to UW.	\$\$\$ PK	2, 3, 5, 8, 10	\$337,500	4,500
1-16	50	Reduce weekday headways from 60 to 30 minutes throughout the weekday.	0.5 \$ MD, EV	1, 2, 4, 8, 9	\$112,500	1,500
Total					\$2,308,500	30,780

Table 15
Priority 2 (Medium-Term) Potential Fixed-Route Transit Improvements

Priority 2 Medium-Term (3-5 years)						
Index	Routes	Action	Cost *	Goals	Annual Cost **	Annual Hrs
2-1	2, 6	Combine Route 2-West with Route 6-East and reduce weekday headways from 30 to 15 minutes. Combine Route 2-North with Route 6-West.	\$\$ PK \$\$\$\$ MD	2, 4, 5, 7	\$675,000	9,000
2-2	4, 5	Reduce evening and weekend headways from 60 to 30 minutes.	\$\$\$\$ EV, WD	1, 2, 4, 9	\$1,002,000	13,360
2-3	10, 38	Eliminate Oakridge via. Reroute from Jenifer and Broom/Basset to First and East Washington. Extend Route 10 span to include peaks.	\$\$ PK	2, 3, 5, 10	\$225,000	3,000
2-4	52, 55	Reroute from Beltline and Verona Road to Whitney Way, Fitchrona, and Nesbitt. Reduce Headways from 60 to 30 minutes.	\$ PK	1, 5, 7, 8, 9, 10	\$112,500	1,500
2-5	51, 56, 57	Eliminate Route 51 and operate routes 56 and 57 south of the WTP as a two-way loop.	\$ MD, EV, WD	4, 6, 9	\$363,000	4,840
2-6	3, 58	Eliminate Route 58 and reduce Route 3 peak headways from 30 to 15 minutes.	-0.5 \$ PK	4, 8	-\$56,250	-750
2-7	75	Reduce headways from 90 to 30 minutes.	\$\$\$ PK	1, 2, 7, 10	\$337,500	4,500
2-8	Grandview Commons	Restructure routes 14 and 15 east of the ETP to provide service east of I-39/90.	\$ PK	6, 10	\$112,500	1,500
2-9	Fitchburg	Introduce a new peripheral route from the WTP to STP via Red Arrow/Allied, King James, McKee, E Cheryl, and Fish Hatchery.	\$\$ PK, MD, EV \$ WD	6, 7, 9	\$813,000	10,840
2-10	West Madison	Restore a commuter loop route from the UW to Mineral Point Road and Odana.	\$ PK	2, 4, 7	\$112,500	1,500
Total					\$3,696,750	49,290

Table 16
Priority 3 (Long-Term) New Service as Development and Funding Allows

Priority 3 Long-Term (New Service as Development and Funding Allows)						
Index	Routes	Action	Cost *	Goals	Annual Cost **	Annual Hrs
3-1	Monona	Provide open-door service on Broadway and Monona Drive. Introduce a via that covers Monona Drive from Nichols/Pflaum to Buckeye		1, 4, 6, 7, 8	\$0	0
3-2	Middleton	Eliminate routes 70 and 78 and operate routes 71 and 72 off peak.	\$\$ MD, EV, WD	2, 4	\$726,000	9,680
3-3	Nine Springs	Extend routes 44 and 48 to E Cheryl and Syene.	\$ PK	6, 7, 10	\$112,500	1,500
3-4	University Research Park Ph 2	Introduce a new peripheral route from the WTP to Pleasant View via Odana and Watts.	\$ - \$\$	2, 6, 7, 10	\$713,250	9,510
3-5	Sprecher East	Extend Route 36 from High Crossing Blvd to the ETP as a two-way route via Crossroads, Lien, Reiner, Sprecher, and Milwaukee Street.	\$\$ PK \$ MD, EV, WD	6, 7	\$588,000	7,840
3-6	Sun Prairie	Extend Route 26 to serve West Sun Prairie interlined with a new route serving East Sun Prairie as a two-way loop replacing the existing shuttle service to/from East Towne.	\$ MD \$\$ EV, WD	2, 4, 6, 7, 9	\$613,500	8,180
Total					\$2,753,250	36,710

Regional Express Commuter Service

In addition to the service change recommendations listed above which are mostly within Metro's existing service area, ongoing planning work is active for a system of regional express buses, primarily serving Dane County communities that are currently unserved by transit. This service would be designed mainly to serve home-based work trips during the conventional commute hours of about 7-9 a.m. and 4-6 p.m. on weekdays. Although the largest share of employment that these routes would serve is in the Madison CBD and UW campus areas, the service would also likely serve reverse commutes to employment areas in communities outside Madison, such as the Waunakee Business Park and the proposed Nine Springs neighborhood in Fitchburg.

Several regional express commuter bus lines are already in place; future routes are intended to build on and incorporate them. Metro routes 55 and 75 are the best examples of regional express service with direct, limited-stop express service between the Epic campus in west Verona and the

West Transfer Point (Route 55) and Capitol Square (Route 75). These routes are primarily designed to serve reverse commute trips to Epic, but are also effective at serving Verona commuters who work in Madison. In addition, Monona Express provides fast, direct, express service between residential areas in Monona and the Madison CBD.

The routing for these lines was refined from past regional express bus planning efforts, in coordination with the intergovernmental coordinating committee, consisting of representation from the affected communities. In addition, several possible locations for new park-and-ride lots were identified based on routing, land uses, and highway access. The stop patterns for each line are envisioned to be local stops in the primary communities served, local stops in the Madison CBD and UW campus areas, and limited (one to two per mile) or no stops in between.

Figure 46 on the following page illustrates potential routings for such service along with potential park-and-ride facility locations.

Table 17
Potential New Planned Express Commuter Service

Line	Routing
Waunakee West	Central Madison to Waunakee via University Avenue, Allen Boulevard, Century Avenue, and CTH Q.
Waunakee East	Central Madison to Waunakee via Packers Avenue and Northport Drive.
Stoughton	Central Madison to Stoughton via John Nolen Drive, Beltline Highway, and USH 51, including a deviation to serve downtown McFarland.
McFarland	Extend Routes 11 and 12 to McFarland.
Cottage Grove	Central Madison to Cottage Grove via East Washington Avenue, Milwaukee Street, and Cottage Grove Road or via John Nolen Drive, Beltline Highway, and CTH N.
Sun Prairie East	Central Madison to Sun Prairie via East Washington Avenue, USH 151, O'Keefe Avenue, and Main Street.
Sun Prairie West	Central Madison to Sun Prairie via East Washington Avenue and Grand Avenue.
DeForest	Central Madison to DeForest via East Washington Avenue, USH 51, and CTH V.
Oregon	Central Madison to Oregon via USH 14.
Verona	Central Madison to Verona via Mineral Point Road and CTH M.

Figure 46
Potential Future Regional Express Commuter Service

