Appendices
Appendix A

Detailed Transportation Service Areas Analysis
This appendix includes an inventory of each congested transportation corridor in the Madison area. Each corridor is described based on its current traffic, transit, and bicycle facility characteristics. Currently programmed or planned improvements are noted. The corridors have been grouped into the following seven transportation service areas:

1. East Isthmus
2. Central/Near West
3. North/Northeast
4. Northwest
5. South
6. East/Southeast
7. West/Southwest

The map below shows the seven transportation corridor areas. Maps of the seven areas showing congested roadway segments and intersections are included in the main report.

Each area is comprised of several arterial corridors that have been identified as currently operating at congested or very congested traffic conditions during peak periods.
East Isthmus Transportation Service Areas

The East Isthmus Transportation Service Areas includes the following five (5) congested arterial street corridors:

1. East Johnson Street/Gorham Street – Wisconsin Avenue to E. Washington Avenue
2. E. Washington Avenue (USH 151) – Blair Street to Aberg Avenue (STH 30)
3. Williamson Street/Winnebago Street – Blair Street to Atwood Avenue
4. Atwood Avenue – Winnebago Street to Cottage Grove Road
5. Milwaukee Street – E. Washington Avenue to Fair Oaks Avenue

E. Johnson Street/E. Gorham Street - East Washington Avenue to Wisconsin Avenue

East Johnson Street and Gorham Street currently operate as a one-way street couplet that runs parallel to East Washington Avenue.

1. Traffic
   a. Traffic Volumes and Congestion: Peak period traffic operation on E. Johnson Street is congested between North Street and Baldwin Street and very congested between Baldwin Street and Wisconsin Street. Gorham Street operates at congested levels between Baldwin Street and Paterson Street and very congested conditions between Paterson Street and Wisconsin Street. Traffic volumes range between 7,100 (on the 2-lane segment east of Pennsylvania Ave.) to 32,000 vehicles per day (vpd) on E. Johnson Street and between 12,800 to 18,700 vpd on E. Gorham Street.
   b. Congestion Duration: Data is not available at this time.
   c. Travel Time: Data is not available at this time.
   d. Non-Recurring Congestion: A total of 85 crashes were reported in 2010 on the segment of E. Johnson Street between Wisconsin Avenue and E. Washington Avenue. In comparison, a total of 37 crashes were reported on Gorham Street between Wisconsin Avenue and Baldwin Street.

2. Transit
   a. Transit Frequency: During peak traffic periods Madison Metro operates 6 buses per hour between Blair Street and Baldwin Street and 4 buses per hour between Baldwin Street and North Street. See transit service frequency maps in Appendix C.
   b. Bus Ridership: Ridership is very high. There are 6 different bus routes that operate on E. Johnson Street/E. Gorham Street which include routes 2, 5, 9, 10, 27 and 28. There were 598 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.
   c. Overload/Extra Buses: Routes 2, 5, 9, 27, and 28 in this corridor have all been identified by Metro staff as having passenger overcrowding...
issues. Extra buses are routinely used for Routes 2 (p.m. peak) and 9 (a.m. peak).

d. **On-Time Performance:** Data is not available at this time.

e. **Bus Lanes:** There are no exclusive bus lanes provided for the above bus routes on E. Johnson or Gorham Streets.

3. **Bicycles**

   E. Johnson Street lacks bike lanes from E. Washington Ave. to S. Brearly Street. The section of Johnson Street west of STH 113 (Pennsylvania Ave.) is a major barrier for bicyclists due to high traffic volumes and the lack of even a wide curb lane. Mifflin and Dayton Streets provide a parallel route west of the river and connect to the Yahara River path and a bridge across the river. Improvements were recently made to the Fordham Ave. intersection with Johnson. The bridge and short path connection to the Yahara River path intersects Johnson Street at this location. Johnson and Gorham Streets have bike/parking lanes from Brearly Street west. Due to right of way constraints, the parking/bike lane is narrower than desired, but still functional. Mifflin Street provides a parallel route all the way to the Square.

4. **Corridor Improvements**

   Bike lanes may be added to the segment of E. Johnson St. between Brearly and Baldwin as part of the pavement replacement project scheduled for 2014. No other transportation improvements are currently planned for E. Johnson Street or Gorham Street. The City of Madison is planning to conduct a study to evaluate the feasibility of converting E. Johnson and Gorham Streets from their existing one-way operation to two-way street operation.

**E. Washington Avenue (USH 151) – Aberg Avenue (STH 30) to Blair Street**

1. **Traffic**

   a. **Traffic Volumes and Congestion:** Traffic operation on E. Washington Avenue (USH 151) is congested during peak periods between Aberg Avenue (STH 30) and Blair Street. Traffic volumes range between 45,100 to 51,650 vpd on E. Washington Ave (USH 151).

   b. **Congestion Duration:** Data is not available at this time.

   c. **Travel Time:** Data is not available at this time.

   d. **Non-Recurring Congestion:** A total of 90 crashes were reported on the segment of E. Washington Ave (USH 151) between Aberg Avenue (STH 30) and Blair Street in 2010.

2. **Transit**

   a. **Transit Frequency:** During peak traffic periods Madison Metro operates 12 buses per hour between Blair Street and Milwaukee Street, 4 to 6 buses per hour between Milwaukee Street and Oak Street and 4 buses per hour between Oak Street and Aberg Avenue (STH 30).

   b. **Bus Ridership:** Ridership is high. There are 10 different routes that run along E. Washington Ave (USH 151), which include routes 4, 6, 14, 15,
25, 27, 29, 37, 56 and 57. There were 722 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.

c. **Overload/Extra Buses:** Extra buses are added to Route 6 during the peak periods between the MATC Truax campus and the Square, primarily due to MATC and East High students.

d. **On-Time Performance:** Data is not available at this time.

e. **Bus Lanes:** There are no exclusive bus lanes provided for the above routes on E. Washington Ave (USH 151)

3. **Bicycles**

   Parking/bike lanes were added as part of the recent street reconstruction. The Starkweather Creek path and Capital City Trail provide a parallel route to the south with an overpass of E. Washington Ave. near STH 30. Mifflin Street also provides a parallel route west of the river.

4. **Corridor Improvements**

   E. Washington Ave. was recently reconstructed between Blair St. and Thierer Rd. with intersection and safety improvements. No additional transportation improvements are currently planned for E. Washington Ave (USH 151).

**Williamson Street/Winnebago Street – Blair Street to Atwood Avenue**

1. **Traffic**

   a. **Traffic Volumes and Congestion:** Traffic operation on Williamson Street/Winnebago Street is very congested. Traffic volumes range between 9,300 (on the one-way one-lane segment) to 21,500 vpd on Williamson Street and Winnebago Streets.

   b. **Congestion Duration:** Data is not available at this time.

   c. **Travel Time:** Data is not available at this time.

   d. **Non-Recurring Congestion:** A total of 67 crashes were reported in 2010 on the segment of Williamson Street/Winnebago Street between Blair Street and Atwood.

2. **Transit**

   a. **Transit Frequency:** During peak traffic periods Madison Metro operates 4 buses per hour between Baldwin Street and 1st Street and 6 buses per hour between 1st Street and Atwood Avenue. Most bus service in the general corridor runs on Jenifer Street one block away, a very high ridership area.

   b. **Bus Ridership:** Ridership is moderately high from Baldwin Street east. There are 4 different routes that run along Williamson Street/Winnebago Street which include routes 3, 4, 10 and 37. There were 555 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.

   c. **Overload/Extra Buses:** Extra buses are used on Routes 3 and 38 in the Jenifer Street corridor. Extra buses are also deployed on Route 4 (p.m. EB) to handle overloads from East High students.
d. **Bus Speeds:** Route 4 was analyzed for average bus travel speeds during the morning and evening peak traffic hours in both directions to and from the north and south transfer points (NTP, STP). During the morning peak hour bus speeds to the NTP ranged from 0 to 5 mph between Baldwin Street and Dickinson Street, 11 to 15 mph between Dickinson Street and Thornton Street and 6 to 10 mph between 1st Street and Atwood Avenue. In comparison, during the evening peak hour bus speeds to the NTP ranged from 6 to 10 mph between Baldwin Street and Dickinson Street, 11 to 15 mph between Rogers Street and Thornton Street, 16 to 25 mph between Riverside Street and Eastwood Street, 16 to 25 mph between 1st Street and Russell Street and 6 to 10 mph between Russell Street and Atwood Avenue.

During the morning peak hour bus speeds to the STP ranged from 6 to 10 mph between Atwood Avenue and Russell Avenue, 11 to 15 mph between Russell Street and 1st Street, 11 to 15 mph between Eastwood Street and Riverside Street, 11 to 15 mph between Thornton Street and Rogers Street, 16 to 25 mph between Rogers Street and Dickinson Street and 6 to 10 mph between Dickinson Street and Baldwin Street. In comparison, during the evening peak hour bus speeds to the STP ranged from 11 to 25 mph between Atwood Avenue and Russell Street, 0 to 5 mph between Russell Street and 1st Street, 11 to 25 mph between Riverside Street and Dickinson Street and 11 to 15 mph between Dickinson Street and Baldwin Street.

e. **On-Time Performance:** Route 4 was analyzed for on-time performance to and from the NTP and STP during the morning and evening peak hours. During the morning and evening peak hour’s buses were typically behind schedule whether it was is traveling to the NTP or to the STP. The on-time performance is summarized below for the bus stop at the intersection of Williamson Street/Winnebago Street and Atwood Avenue.

- AM Peak Hour to NTP: Behind 2.8 minutes
- PM Peak Hour to NTP: Behind 4.3 minutes
- AM Peak Hour to STP: Behind 0.8 minutes
- PM Peak Hour to STP: Behind 3.5 minutes.

f. **Bus Lanes:** There are no exclusive bus lanes provided for the above bus routes on Williamson Street/Winnebago Street.

3. Bicycles

   Williamson Street lacks bike lanes. The street is being reconstructed this year and narrowed to 44 feet to widen the sidewalk. The Isthmus segment of the Capital City Trail and Jenifer Street provide parallel routes one block away.

4. Corridor Improvements
The city of Madison has a reconstruction project planned for the year 2015 on Williamson Street/Winnebago Street between Yahara River and 1st Street. A possible two way conversion is being studied between Yahara River and 1st Street.

Atwood Avenue – Winnebago Street to Cottage Grove Road

1. Traffic
   a. Traffic Volumes and Congestion: Traffic operation on Atwood Avenue is congested between Winnebago Street and Cottage Grove Road. Traffic volumes range between 12,000 to 18,350 vpd on Atwood Avenue.
   b. Congestion Duration: Data is not available at this time.
   c. Travel Time: Data is not available at this time.
   d. Non-Recurring Congestion: There were 39 crashes reported in 2010 on Atwood Avenue.

2. Transit
   a. Transit Frequency: During peak traffic periods Madison Metro operates 6 buses per hour between Winnebago Street and Cottage Grove Road.
   b. Overload/Extra Buses: Extra buses are added to Routes 3 and 38 during the morning peak period and to Route 38 during the afternoon peak. See data attached in Appendix.
   c. On-Time Performance: Data is not available at this time.
   d. Bus Lanes: There are no exclusive bus lanes provided for the above bus routes on Atwood Avenue.

3. Bicycles
   Atwood Ave. lacks bike lanes, but the right lane serves as a de facto sub-standard parking/bike lane west of Oakridge St. except when the weekday peak period parking restriction is in effect. The Isthmus bike path and local street network provide parallel routes.

4. Corridor Improvements
   Bike lanes will be added from Walter Street to Cottage Grove Road as part of a partial street reconstruction project programmed for 2015.

Milwaukee Street – E. Washington Avenue (USH 151) to Fair Oaks Avenue

1. Traffic
   a. Congestion V/C Corridor Conditions: Traffic operation on Milwaukee Street is congested between E. Washington Avenue (USH 151) and Fair Oaks Avenue. The traffic volume on this two-lane segment of Milwaukee Street is 10,550 vpd.
   b. Congestion Duration: Data is not available at this time.
c. **Travel Time:** Data is not available at this time.
d. **Non-Recurring Congestion:** A total of 20 crashes were reported in 2010 on Milwaukee Street.

2. **Transit**
   a. **Transit Frequency:** During the peak periods Madison Metro operates 4 buses per hour between E. Washington Ave (USH 151) and Fair Oaks Avenue.
   c. **Bus Ridership:** Ridership is high. There are 4 different routes that run along this segment of Milwaukee Street, which include routes 5, 9, 14 and 15. There were 786 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.
   d. **Overload/Extra Buses:** There are no extra buses put in service during peak bus ridership periods on the above transit routes in this corridor.
   b. **On-Time Performance:** Data not available at this time.
   c. **Bus Lanes:** There are no exclusive bus lanes provided for the above bus routes on Milwaukee Street.

3. **Bicycles**
   This section of Milwaukee Street lacks bike lanes, and there is currently not a good parallel route.

4. **Corridor Improvements**
   Reconstruction of Fair Oaks Intersection, which will include the addition of turn lanes and bike lanes, is programmed for 2013.
Central/Near West Transportation Service Areas

The Central/Near West transportation service area includes the following seven (7) congested arterial street corridors:

1. Park Street – Langdon Street to Olin Avenue
2. University Avenue/W. Johnson Street/W. Gorham Street – Wisconsin Avenue to University Bay Drive/Farley Avenue
3. Campus Drive – University Avenue to University Bay Drive/Farley Avenue
4. Regent Street – Highland Avenue to W. Washington Avenue
5. Monroe Street – Odana Road to Regent Street
6. W. Washington Avenue – S. Park Street to Carroll Street
7. Speedway Boulevard – Glenway Street to Highland Avenue

Park Street – Langdon Street to Olin Avenue

1. Traffic
   a. Traffic Volumes and Congestion: Traffic is congested on Park Street between W. Johnson Street and W. Washington Avenue, very congested between W. Washington Avenue and Fish Hatchery Road and congested between Fish Hatchery Road and Olin Avenue. The intersections of Park Street with Johnson Street and Regent Street have been identified as congested. The traffic volumes on Park Street between Langdon Street and Olin Avenue range from 8,100 (on the two-lane segment between University and Langdon) to 66,500 vpd.
   b. Congestion Duration: Data is not available at this time.
   c. Travel Time: Data is not available at this time.
   d. Non-Recurring Congestion: A total of 87 crashes occurred on Park Street.

2. Transit
   a. Transit Frequency: During the peak periods Madison Metro operates 6 buses per hour between Langdon Street and Dayton Street, 6 to 12 buses per hour between Dayton Street and Regent Street, 4 buses per hour between Regent Street and W. Washington Avenue, 6 buses per hour between W. Washington Avenue and Fish Hatchery Road and 4 buses per hour between Fish Hatchery and Olin Avenue. This doesn’t include the UW campus circulator routes.
   e. Bus Ridership: Bus ridership is very high. There are 9 different routes that run along Park Street which include routes 4, 5, 6, 13, 44, 47, 48, 80 and 85. There were 1,685 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.
   b. Overload/Extra Buses: Extra buses are added to routes 4 and 44 during the morning peak periods at the intersection of Erin Street and Park Street and during the evening peak periods extra buses are added to route 6 at the intersection of Park Street and Regent Street.
c. **Bus Speeds:** During the morning peak hour to the NTP Route 4 speeds vary between 11 and 25 mph from Fish Hatchery Road to Arboretum Drive and during the evening peak hour to the NTP speeds vary between 6 and 10 mph from Fish Hatchery Road to Arboretum Drive. During the morning peak hour to the STP Route 4 speeds vary between 6 and 10 mph from Delaplaine Court to Erin Street and during the evening peak hour speeds vary between 6 and 25 mph from Delaplaine Court to Erin Street.

d. **On-Time Performance:** Route 4 was analyzed for on-time performance to and from the NTP and STP during the morning and evening peak hours. During the morning and evening peak hour buses were typically behind schedule whether it was traveling to the NTP or to the STP. The on-time performance is summarized below for the bus stop at the intersection of Park Street and Fish Hatchery Road.

- **AM Peak Hour to NTP:** Behind 2.7 minutes
- **PM Peak Hour to NTP:** Behind 2.8 minutes
- **AM Peak Hour to STP:** Behind 1.2 minutes
- **PM Peak Hour to STP:** Behind 3.7 minutes.

e. **Bus Lanes:** There are no exclusive bus lanes provided for the above bus routes on this segment of Park Street.

3. **Bicycles**

   - Park Street has bike lanes between Langdon and Fish Hatchery Road, but just a wide curb lane between Fish Hatchery Road and Olin Avenue.
   - Mills and Brooks Streets and the Wingra Creek path provide parallel routes on the west side.

4. **Corridor Improvements**

   - No transportation improvements are currently programmed or planned on Park Street.

**University Ave/W. Johnson Street/W. Gorham Street – Wisconsin Avenue to University Bay Drive/Farley Avenue**

1. **Traffic**

   a. **Traffic Volumes and Congestion:** During peak periods traffic is very congested on W. Gorham Street between Wisconsin Avenue and University Avenue. Traffic is very congested on W. Johnson Street between Wisconsin Avenue and Bassett Street and congested between Bassett Street and Randall Avenue. Traffic is very congested on University Avenue between W. Gorham Street and Randall Avenue, congested between Randall Avenue and Grand Avenue and very congested between Grand Avenue to University Bay Drive/Farley Avenue. The intersection of University Avenue with Farley Avenue and the intersection of Johnson Street with Charter Street have been identified as congested intersections. Traffic volumes along University Avenue range from 9,650 (on the two-lane segment west of Highland
Ave.) to 35,200 vpd, Traffic volumes along W. Johnson Street range from 19,555 to 35,400 vpd and traffic volumes on W. Gorham Street range from 19,650 to 36,900 vpd.

b. **Congestion Duration:** Data is not available at this time.

c. **Travel Time:** Data is not available at this time.

d. **Non-Recurring Congestion:** There were 220 crashes reported in 2010 on University Avenue/W. Johnson Street/W. Gorham Street.

2. **Transit**

a. **Transit Frequency:** During the peak periods Madison Metro operates 12 buses per hour on University Avenue between Randall Avenue and Gorham Street, 6 buses per hour between University Bay Drive/Farley Avenue and Campus Drive, 12 buses per hour along W. Johnson Street between State Street and Campus Drive and 12 buses per hour along W. Gorham Street between University Avenue and State Street.

b. **Bus Ridership:** Ridership is extremely high in this corridor. There are 29 routes that run along University Avenue, 22 routes that run along W. Gorham Street and 5 routes that run along W. Johnson Street.

University Avenue Routes: 1, 2, 3, 4, 6, 9, 10, 11, 12, 13, 14, 15, 19, 27, 28, 29, 37, 38, 47, 48, 56, 57, 58, 70, 71, 72, 74, 80 and 84.

W. Gorham Street Routes: 1, 2, 3, 9, 10, 11, 12, 14, 15, 19, 27, 28, 37, 38, 47, 56, 57, 58, 70, 71, 72 and 74.

W. Johnson Street Routes: 4, 13, 29, 48 and 80.

There were 2,476 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.

c. **Overload/Extra Buses:** Extra buses are added to routes 14 and 15 during the morning peak periods at the intersection of University Avenue and Park Street and to route 2 at the intersection of University Avenue and Highland Avenue. During the evening peak periods extra buses are added to route 15 at the intersection of University Avenue and Park Street and to route 2 at the intersection of University Avenue and Highland Avenue.

d. **Bus Speeds:** During the morning peak hour to the NTP Route 4 bus speeds vary on W. Johnson Street from 0 to 5 mph between Mills Street and Brooks Street, 6 to 10 mph between Brooks Street and Campus Mall and 16 to 25 mph from Campus Mall to Lake Street. During the evening peak hour to the NTP along W. Johnson Street Route 4 bus speeds vary from 6 to 10 mph between Mills Street and Campus Mall and 16 to 25 mph between Campus Mall and Lake Street.

During the morning peak hour to the STP Route 4 bus speeds vary on University Avenue from 11 to 15 mph between Lake Street and Campus Mall, 6 to 10 between Campus Mall and Brooks Street and 16 to 25 mph between Brooks Street and Mills Street. During the evening peak hour to the STP along University Avenue Route 4 bus speeds vary from 0 to 5 mph between Fitch Court and Campus Mall, 6 to 10 mph between
Campus Mall to Brooks Street and 11 to 15 mph between Brooks Street and Mills Street.

e. **On-Time Performance:** Route 4 was analyzed for on-time performance to and from the NTP and STP during the morning and evening peak hours. During the morning and evening peak hour buses were typically behind schedule whether it was traveling to the NTP or to the STP. The on-time performance is summarized below for the bus stop at the intersection of W. Johnson Street and Campus Mall to the NTP and at the intersection of W. Johnson Street and Brooks Street to the STP.

   - AM Peak Hour to NTP: Behind 2.0 minutes
   - PM Peak Hour to NTP: Behind 3.0 minutes
   - AM Peak Hour to STP: Behind 1.2 minutes
   - PM Peak Hour to STP: Behind 2.8 minutes.

f. **Bus Lanes:** There are exclusive bus lanes on University Avenue from Frances Street to Campus Drive.

3. **Pedestrians**

   This corridor was identified to have the highest pedestrian volumes as well as the highest pedestrian conflicts with vehicles and bicycles and pedestrians tend to ignore the pedestrian signal. Pedestrian count data is not available at this time.

4. **Bicycles**

   University Ave. has bike lanes, including a contra-flow lane through the university area. Johnson Street lacks bike lanes from Campus Drive to Bassett St., but Dayton Street has bike lanes and provides a parallel route one block to the south. Bike lanes are being added to Old University Avenue this year as part of reconstruction and conversion of the cross-section to two lanes with a center turn lane.

5. **Corridor Improvements**

   No additional transportation improvements are currently programmed or planned for University Avenue/W. Johnson Street/W. Gorham Street.

**Campus Drive - University Avenue to University Bay Drive/Farley Avenue**

1. **Traffic**

   a. **Traffic Volumes and Congestion:** Traffic is congested on Campus Drive from University Avenue to University Bay Drive/Farley Avenue. Both intersections of Campus Drive with University Avenue have been identified as congested. Traffic volumes on Campus Drive range from 33,150 to 38,550 vpd.

   b. **Congestion Duration:** Data is not available at this time.

   c. **Travel Time:** Data is not available at this time.

   d. **Non-Recurring Congestion:** There were 15 crashes reported in 2010 on Campus Drive.

2. **Transit**
a. **Transit Frequency:** During the peak periods Madison Metro operates 12 buses per hour on Campus Drive between University Avenue and University Bay Drive/Farley Avenue.

b. **Bus Ridership:** While there are no bus stops on Campus Drive, ridership through the corridor is very high. There are 10 routes that run along Campus Drive which include routes 1, 12, 15, 14, 56, 57, 70, 71, 72 and 74.

c. **Overload/Extra Buses:** Extra buses are added to Routes 14, 15, and 57 during the a.m. peak and to 14 and 15 during the p.m. peak that run in this corridor.

d. **On-Time Performance:** Data is not available at this time.

e. **Bus Lanes:** There are no exclusive bus lanes provided for the above bus routes on Campus Drive.

3. Bicycles
   
   Campus Drive has a wide paved shoulder that can accommodate bicyclists. The Campus Drive path provides a parallel route for most of its length. The path is planned to be extended east to connect to the Southwest path, but this extension has challenging design issues.

4. Corridor Improvements
   
   No transportation improvements are currently programmed for Campus Drive.

**Regent Street - Highland Avenue to W. Washington Avenue**

1. Traffic
   
a. **Traffic Volumes and Congestion:** During peak periods traffic is congested on Regent Street between Monroe Street and Randall Avenue, very congested between Randall Avenue and Park Street and congested from Park Street to W. Washington Avenue.

b. **Congestion Duration:** Data is not available at this time.

c. **Travel Time:** Data is not available at this time.

d. **Non-Recurring Congestion:** There were 87 crashes reported in 2010 on Regent Street.

2. Transit
   
a. **Transit Frequency:** During the peak periods Madison Metro operates 4 buses per hour on Regent Street from Highland Avenue to Mills Street, 6 buses per hour from Mills Street to Park Street and 2 buses per hour from Park Street to W. Washington Avenue. This excludes the UW campus routes.

f. **Bus Ridership:** Ridership is high. There are 3 routes that run along this segment of Regent Street, which include routes 6, 27, and 85 (the SE UW campus circulator). There were 797 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.
b. Overload/Extra Buses: Extra buses are added to Route 6 in both the a.m. and p.m. peak periods. The p.m. extras are due to West High students.

c. On-Time Performance: Data is not available at this time.

d. Bus Lanes: There are no exclusive bus lanes provided for the above bus routes on Regent Street.

3. Bicycles

Regent Street lacks bike lanes. For certain segments the right lane serves as a de facto sub-standard parking/bike lane except when the weekday peak period parking restriction is in effect. Pedestrian/bicyclist crossing improvements were recently made to the Regent/Monroe/Breese Terrace intersection, which focused mainly on moving bicyclists using the Southwest path through the intersection.

4. Corridor Improvements

No additional improvements are programmed at this time.

Monroe Street – Odana Road to Regent Street

1. Traffic

a. Traffic Volumes and Congestion: During peak periods traffic is very congested on Monroe Street between Odana Road and Regent Street. Traffic volumes on Monroe Street range from 13,400 to 21,000 vpd.

b. Congestion Duration: Data is not available at this time.

c. Travel Time: Data is not available at this time.

d. Non-Recurring Congestion: There were 48 crashes reported in 2010 on Monroe Street.

2. Transit

a. Transit Frequency: During the peak periods Madison Metro operates 4 buses per hour on Monroe Street (6 per hour between Odana Road and Commonwealth Ave.).

g. Bus Ridership: Ridership is moderately high, especially relative to service frequency. There are 3 routes that run along Monroe Street which include routes 3, 19 and 58. There were 498 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.

b. Overload/Extra Buses: No extra buses are deployed in this corridor.

c. On-Time Performance: Data is not available at this time.

d. Bus Lanes: There are no exclusive bus lanes provided for the above bus routes on Monroe Street.

3. Bicycles

Monroe Street lacks bike lanes. The right lane serves as a de facto sub-standard parking/bike lane except when the weekday peak period parking restriction is in effect. The Southwest path parallels Monroe Street for its entire length. There is also a mostly on-street bike route south of Monroe Street, though it is not particularly direct and has a couple of sidewalk segments.
4. Corridor Improvements
   No transportation improvements are currently programmed or planned for
   Monroe Street.

West Washington Avenue – S. Park Street to Carroll Street

1. Traffic
   a. Traffic Volumes and Congestion: During peak periods traffic is very
      congested on W. Washington Avenue between Bedford Street and
      Fairchild Street. Traffic volumes on W. Washington Avenue range from
      13,950 to 18,800 vpd.
   b. Congestion Duration: Data is not available at this time.
   c. Travel Time: Data is not available at this time.
   d. Non-Recurring Congestion: There were 38 crashes reported in 2010 on
      W. Washington Avenue.

2. Transit
   a. Transit Frequency: During the peak periods Madison Metro operates 4
      buses per hour on W. Washington Avenue from Bedford Street to
      Fairchild Street.
   b. Bus Ridership: Ridership is moderately high. There are 3 routes that run
      along W. Washington Avenue which include routes are 5, 27 and 47.
      There were 682 weekday bus boardings and alightings per mile in the
      corridor based on Fall 2005 data.
   c. Overload/Extra Buses: No extra buses are deployed in this corridor.
   d. On-Time Performance: Data is not available at this time.
   e. Bus Lanes: There are no exclusive bus lanes provided for the above bus
      routes on W. Washington Avenue.

3. Bicycles
   This section of W. Washington Avenue lacks bike lanes and is difficult for
   bicyclists as it is striped for two wide travel lanes, except at the
   intersections, but is often used by motorists as a four-lane street.  W.
   Mifflin and W. Main Streets provide parallel routes one block to the north
   and south, respectively.

4. Corridor Improvements
   No transportation improvements are currently programmed or planned for
   W. Washington Avenue.

Speedway Road – Glenway Street to Highland Avenue

1. Traffic
   a. Traffic Volumes and Congestion: During peak periods traffic is very
      congested on Speedway Road between Glenway Street and Highland
      Avenue. Traffic volumes on Speedway Road range from 16,200 to 18,500
      vpd.
   b. Congestion Duration: Data is not available at this time.
c. **Travel Time:** Data is not available at this time.
d. **Non-Recurring Congestion:** There were 10 crashes reported in 2010 on Speedway Road.

2. **Transit**
   a. **Transit Frequency:** During the peak periods Madison Metro operates 4 buses per hour on Speedway Road from Glenway Street to Highland Avenue.
   b. **Bus Ridership:** There aren’t a large number of boardings and alightings on Speedway Road, but ridership through the corridor is high. Route 6 is the only route that runs along Speedway Road. There were 211 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.
   c. **Overload/Extra Buses:** Extra buses are added to Route 6 in both the a.m. and p.m. peak periods. The p.m. extras are due to West High students.
   d. **On-Time Performance:** Data is not available at this time.
   e. **Bus Lanes:** There are no exclusive bus lanes provided for the above bus routes on Speedway Road.

3. **Bicycles**
   - Speedway lacks bike lanes, but there is a side path on the south side.
   - The Southwest path also serves as a parallel route.

4. **Corridor Improvements**
   - No transportation improvements are currently programmed or planned for Speedway Road.

**North/Northeast Transportation Service Areas**

The following nine (9) North/Northeast arterial roadways generally experience congested conditions during peak periods:

1. STH 113 (Northport Drive/Packers Avenue) – River Road to Aberg Avenue
2. CTH CV (Packers Avenue) – USH 51 to Northport Drive
3. Aberg Avenue – Sherman Avenue to E. Washington Avenue (USH 151)
4. Anderson Street – International Lane to Stoughton Road (USH 51)
5. E. Washington Avenue (USH 151) – Aberg Avenue to I-39/90/94
6. Stoughton Road (USH 51) – STH 30 to E. Washington Avenue (USH 151)
7. STH 19 – USH 51 to Bird Street
8. STH 19 – STH 113 to River Road
9. W. Main Street (STH 19/CTH N) – Bristol Street to Grove Street

**STH 113 (Northport Drive/Packers Avenue) – River Road to Aberg Avenue**

1. **Traffic**
a. **Traffic Volumes and Congestion:** During peak periods traffic is congested on STH 113 between River Road and Aberg Avenue. Traffic volumes on STH 113 range from 15,150 to 44,300 vpd.

b. **Congestion Duration:** Data is not available at this time.

c. **Travel Time:** Data is not available at this time.

d. **Non-Recurring Congestion:** There were 132 crashes reported in 2010 on STH 113 (Northport Drive/Packers Avenue).

2. Transit

a. **Transit Frequency:** During the peak periods Madison Metro operates 4 buses per hour on STH 113 from Knutson Drive to Troy Drive, 6 buses per hour from Troy Drive to Sherman Avenue, 4 buses per hour from Sherman Avenue to International Lane and 6 buses per hour from International Lane to Aberg Avenue.

b. **Bus Ridership:** Ridership is moderately high in certain portions of the Northport Drive corridor where there are some low-income and low auto ownership neighborhoods. There are 4 routes that run along STH 113. The routes are 20, 21, 22 and 29. Route 20 only travels on STH 113 from Aberg Avenue to International Lane. There were 173 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.

c. **Overload/Extra Buses:** No extra buses are deployed in this corridor.

d. **Bus Speeds:** Data is not available at this time.

e. **On-Time Performance:** Data is not available at this time.

f. **Bus Lanes:** There are no exclusive bus lanes provided for the above bus routes on STH 113.

3. Bicycles

STH 113 is six lanes, hasn’t had bike lanes, and has been a major barrier for bicyclists. The roadway is being repaved this year. Bike lanes are being added as part of the project and pedestrian crossings will also be improved. While it will still be challenging for bicyclists, addition of the bike lanes is critical for mobility in the corridor because of the lack of alternative routes, particularly north of the Sherman Ave. intersection.

4. Corridor Improvements

No additional transportation improvements are currently programmed or planned for STH 113.

**CTH CV (Packers Avenue) – Northport Drive to USH 51**

1. Traffic

a. **Traffic Volumes and Congestion:** During peak periods traffic is congested on CTH CV between Wheeler Road and Tennyson lane. Traffic volumes on this segment of CTH CV range from 12,400 to 13,750 vpd.

b. **Congestion Duration:** Data is not available at this time.

c. **Travel Time:** Data is not available at this time.
d. **Non-Recurring Congestion** There were 12 crashes reported in 2010 on CTH CV (Packers Avenue).

2. **Transit**
   a. **Transit Frequency:** During the peak periods Madison Metro operates 4 buses per hour on CTH CV from Wheeler Road to Tennyson Lane.
   b. **Bus Ridership:** Route 21 is the only route located in this corridor. There were 40 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.
   c. **Overload/Extra Buses:** No extra buses are deployed in this corridor.
   d. **On-Time Performance:** Data is not available at this time.
   e. **Bus Lanes:** There are no exclusive bus lanes provided for the above bus route on CTH CV.

3. **Bicycles**
   CTH CV has sub-standard paved shoulders for bicyclists.

4. **Corridor Improvements**
   No transportation improvements are currently planned or programmed for CTH CV.

**Aberg Avenue – Sherman Avenue to E. Washington Avenue (USH 151)**

1. **Traffic**
   a. **Traffic Volumes and Congestion:** During peak periods traffic is very congested on Aberg Avenue between STH 113 and Shopko Drive and traffic is congested between Shopko Drive and E. Washington Avenue (USH 151). The intersection of Aberg Avenue with Packers Avenue has been identified as a congested intersection. Traffic volumes on Aberg Avenue range from 7,500 (east of Sherman Ave.) to 32,850 vpd.
   b. **Congestion Duration:** Data is not available at this time.
   c. **Travel Time:** Data is not available at this time.
   d. **Non-Recurring Congestion:** There were 29 crashes reported in 2010 on Aberg Avenue.

2. **Transit**
   a. **Transit Frequency:** During the peak periods Madison Metro operates 2 buses per hour on Aberg Avenue from E. Washington Avenue to Packers Ave. (STH 113), 12 buses per hour from Packers to Huxley Street and 6 buses per hour from Huxley Street to Sherman Avenue. (Note: The large number of buses on Aberg west of Packers Ave. is because the North Transfer Point is located on Aberg Avenue)
   b. **Bus Ridership:** Routes 17 and 20 are the only routes on Aberg east of Packers Ave. There were 210 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.
   c. **Overload/Extra Buses:** No extra buses are deployed in this corridor.
   d. **On-Time Performance:** Data is not available at this time.
   e. **Bus Lanes:** There are no exclusive bus lanes provided for the above bus routes on Aberg Avenue.
3. Bicycles
   There is a bike path along Aberg Ave. between Packers and McCormick Ave. with an overpass of Aberg for the Starkweather Creek path. The Packers Ave. interchange area lacks bike lanes.

4. Corridor Improvements
   No transportation improvements are currently planned or programmed for Aberg Avenue.

**Anderson Street – International Lane to USH 51**

1. Traffic
   a. **Traffic Volumes and Congestion:** During peak periods traffic is very congested on Anderson Street between Pankratz Street and Wright Street. Traffic volumes on this two-lane segment of Anderson Street range from 17,700 to 21,050 vpd.
   b. **Congestion Duration:** Data is not available at this time.
   c. **Travel Time:** Data is not available at this time.
   d. **Non-Recurring Congestion:** There were 43 crashes reported in 2010 on Anderson Street.

2. Transit
   a. **Transit Frequency:** During the peak periods Madison Metro operates 2 buses per hour on Anderson Street between Pankratz Street and Wright Street.
   b. **Bus Ridership:** Route 20 is the only route located in this corridor. There were 48 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.
   c. **Overload/Extra Buses:** No extra buses are deployed in this corridor.
   d. **On-Time Performance:** Data is not available at this time.
   e. **Bus Lanes:** There are no exclusive bus lanes provided for the above bus route on Anderson Street.

3. Bicycles
   Anderson St. has paved shoulders or bike lanes except for the segment just east of the International Lane intersection and the four-lane segment east of Wright St.

4. Corridor Improvements
   Bike lanes will be added between Wright Street and USH 51 as part of a partial reconstruction project programmed for 2013. No other transportation improvements are currently planned or programmed for Anderson Street.

**E. Washington Avenue (USH 151) – Aberg Avenue to I-39/90/94**

1. Traffic
   a. **Traffic Volumes and Congestion:** During peak periods traffic is congested on E. Washington Avenue (USH 151) between Aberg Avenue
and I-39/90/94. The intersection of E. Washington Avenue (USH 151) with Stoughton Road (USH 51) has been identified as problem congested intersection. Traffic volumes on E. Washington Avenue (USH 151) range from 34,300 to 61,850 vpd.

b. **Congestion Duration**: Data is not available at this time.

c. **Travel Time**: Data is not available at this time.

d. **Non-Recurring Congestion**: A total of 275 crashes were reported in 2010 on the segment of E. Washington Avenue (USH 151) between Aberg Avenue and I-39/90/94.

2. **Transit**

   a. **Transit Frequency**: During the peak periods Madison Metro operates 6 buses per hour on E. Washington Avenue (USH 151) from USH 51 to Parkside Drive, 4 buses per hour from Parkside Drive to Eagan Road and 2 buses per hour from Eagan Road to I-39/90/94.

   b. **Bus Ridership**: Route 6 and 25 are the only routes located in this corridor. There were 249 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.

   c. **Overload/Extra Buses**: No extra buses are deployed in this corridor.

   d. **On-Time Performance**: Data is not available at this time.

   e. **Bus Lanes**: There are no exclusive bus lanes provided for the above bus routes on E. Washington Avenue (USH 151).

3. **Bicycles**

   Bike lanes were added up to Theirer Rd. as part of the recent reconstruction of the street. Bike lanes will also be added from there north to E. Springs Dr. in 2012 as part of repaving of the street. While the six-lane high traffic street will still be challenging for bicyclists, experienced bicyclists will be able to use the street relatively safely without impeding traffic flow. This is important as there are no good parallel routes for this stretch of E. Washington Ave. except in the East Towne area. The planned Starkweather Creek (East Branch) path will eventually provide an alternate route for through traveling bicyclists.

4. **Corridor Improvements**

   No other transportation improvements are currently programmed or planned for E. Washington Avenue (USH 151).

**Stoughton Road (USH 51) – STH 30 to E. Washington Avenue**

1. **Traffic**

   a. **Traffic Volumes and Congestion**: The Madison area segment of Stoughton Road from STH 30 north is identified as congested during peak periods, except for the E. Washington Avenue intersection. The two-lane segment north of STH 19 is very congested during weekday period periods. Average daily traffic volumes on that segment range from 13,600 to 18,000.

   b. **Congestion Duration**: Data is not available at this time.

   c. **Travel Time**: Data is not available at this time.
d. Non-Recurring Congestion: There were 110 crashes reported in 2010 on this short segment of Stoughton Road (USH 51).

2. Transit
   a. Transit Frequency: During the peak periods Madison Metro operates 4 bus per hour on Stoughton Road (USH 51) in the MATC area..
   b. Bus Ridership: Routes 6 and 34 are the only routes located in this corridor.
   c. Overload/Extra Buses: No extra buses are deployed in this corridor.
   d. On-Time Performance: Data is not available at this time.
   e. Bus Lanes: There are no exclusive bus lanes provided for the above bus route on Stoughton Road (USH 51).

3. Bicycles
   There are no parallel routes for the Stoughton Rd. corridor. The only alternate routes would be Wright St/Fair Oaks and the Marsh View path, which connects to local streets north of STH 30.

4. Corridor Improvements
   No transportation improvements are currently planned or programmed on Stoughton Road (USH 51) in the Madison area. The very congested two-lane segment of USH 51 from north of STH 19 to CTH V is programmed to be reconstructed and expanded to a 4 lane freeway with interchanges at Windsor Road and CTH V. Construction is expected to be completed in 2014.

**STH 19 – USH 51 to Bird Street**

1. Traffic
   a. Traffic Volumes and Congestion: During peak periods traffic is congested on STH 19 between USH 51 and USH 151 and very congested between USH 151 and Bird Street. The average daily traffic volume on STH 19 in the corridor is 17,100 vpd.
   b. Congestion Duration: Data is not available at this time.
   c. Travel Time: Data is not available at this time.
   d. Non-Recurring Congestion: There were 70 crashes reported in 2010 on this segment of STH 19.

2. Transit
   a. Transit Frequency: There is no bus service in the corridor. Sun Prairie does have a shared-ride taxi system.
   b. Bus Ridership: N/A

3. Bicycles
   STH 19 has paved shoulders, but is still least suitable for bicycling due to high traffic volumes and speeds. A side path exists on the south side of the roadway from N. Heatherstone Dr. in the Town of Sun Prairie east through the USH 151 interchange area to N. Bird Street. There is also a path on the north side from Thompson to Broadway Drive. The street
network within the developed area of the corridor does not provide a parallel route.

4. Corridor Improvements
   No transportation improvements are currently programmed or planned for STH 119.

**STH 19 – STH 113 to River Road**

1. Traffic
   a. **Traffic Volumes and Congestion:** During peak periods traffic is congested on STH 19 between STH 113 and River Road. The average daily traffic volume on STH 19 in the corridor is 16,500 vpd.
   b. **Congestion Duration:** Data is not available at this time.
   c. **Travel Time:** Data is not available at this time.
   d. **Non-Recurring Congestion:** There were 41 crashes reported in 2010 on this segment of STH 19.

2. Transit
   a. **Transit Frequency:** There is no bus service in the corridor.
   b. **Bus Ridership:** N/A

3. Bicycles
   There is a sub-standard paved shoulder for bicycling on this segment of STH 19 and it is least suitable for bicycling. Easy Street to the north and Bong Road to the south do provide parallel routes to Waunakee, but with considerable indirection.

4. Corridor Improvements
   No transportation improvements are currently planned or programmed for STH 119.

**W. Main Street (STH 19/CTH N) – Bristol Street to Grove Street**

1. Traffic
   a. **Traffic Volumes and Congestion:** During peak periods traffic is congested on W. Main Street in Sun Prairie between Bristol Street and Grove Street. Average daily traffic volume on W. Main Street in the corridor is 11,400 vpd.
   b. **Congestion Duration:** Data is not available at this time.
   c. **Travel Time:** Data is not available at this time.
   d. **Non-Recurring Congestion:** There were 14 crashes reported in 2010 on W. Main Street (STH 19/CTH N).

2. Transit
   a. **Transit Frequency:** There is no bus transit service in this corridor. Sun Prairie does have shared-ride taxi service.
   b. **Bus Ridership:** N/A

3. Bicycles
   This section of Main Street in downtown Sun Prairie does not have bicycle facilities, but the two-lane street with parking does have extra wide
travel lanes. That combined with the slow traffic speeds makes it suitable for bicycling. The street network does not provide any parallel routes. No improvements are planned.

4. Corridor Improvements
   No transportation improvements are currently programmed or planned for W. Main Street.

Northwest Transportation Service Areas

Seven (7) Northwest arterial street corridors experience congested traffic conditions during peak periods. They consist of the following:

1. University Avenue – University Bay Drive/Farley Avenue to W. Beltline (USH 12/14)
2. Old Sauk Road/Old Middleton Road – University Avenue to Pleasant View Road
3. USH 14 – W. Beltline (USH 12/14) to CTH P
4. Century Avenue (CTH M) – CTH Q to USH 12 Bypass
5. CTH M – CTH Q to STH 113
6. CTH Q – STH 113 (Main Street) to CTH K
7. STH 19 (Main Street) – CTH Q to Division Street

University Avenue – University Bay Drive/Farley Avenue to W. Beltline (USH 12/14)

1. Traffic
   a. Traffic Volumes and Congestion: During peak periods traffic is congested on University Avenue between University Bay Drive/Farley Avenue and Whitney Way, very congested between Whitney Way and CTH Q and congested between CTH Q and W. Beltline (USH 12/14). Traffic volumes on University Avenue in the corridor range from 21,500 to 52,000 vpd.
   b. Congestion Duration: Data is not available at this time.
   c. Travel Time: Data is not available at this time.
   d. Non-Recurring Congestion: There were 199 crashes reported in 2010 on University Avenue.

2. Transit
   a. Transit Frequency: During the peak traffic periods Madison Metro operates 12 buses per hour on University Avenue between University Bay Drive/Farley Avenue and Midvale Boulevard, 6 buses per hour between Midvale Boulevard and Old Middleton Road, 4 buses per hour between Old Middleton Road and Branch Street and 2 buses per hour between Branch Street and Parmenter Street.
   b. Bus Ridership: There are 13 routes that run along STH 113. Routes 2, 11, 12, 14, 28, 37, 38, 56, 57, 70, 71, 72, and 74 run from University Bay Drive/Farley Avenue to Whitney Way, routes 70, 71, 72 and 74 continue on University Avenue from Whitney Way to Branch Street and route 74 continues on University Avenue to Parmenter Street. There were 449
weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.

c. **Overload/Extra Buses:** Route 2 uses extra buses during the morning peak hour and route 15 uses extra buses during the morning and evening peak hour.

d. **On-Time Performance:** Data is not available at this time.

e. **Bus Lanes:** There are no exclusive bus lanes provided for the above bus routes on University Avenue.

3. **Bicycles**

Only one section (Segoe to Shorewood) of this segment of University Avenue currently has bike lanes. Old Middleton Road, Elmwood Ave. and the Black Hawk path provide a parallel route, except for a gap between Shorewood Blvd. and Farley. Bike lanes will be added on University Ave. between Sego and Allen (except for the bridge over Old Middleton Rd.). A side path will be constructed from Springs Road to Allen Blvd.

4. **Corridor Improvements**

University Avenue will be reconstructed to an urban cross-section from Sego Road to Allen Boulevard in 2012.

### Old Sauk Road/Old Middleton Road – University Avenue to Pleasant View Road

1. **Traffic**

   a. **Traffic Volumes and Congestion:** During peak periods traffic is very congested on Old Sauk Road/Old Middleton Road between University Avenue and Whitney Way, congested between Whitney Way and Everglade Drive, very congested between Everglade Drive to Westfield Road. Traffic volumes on Old Sauk Road/Old Middleton Road in the corridor range from 10,350 to 11,900 vpd.

   b. **Congestion Duration:** Data is not available at this time.

   c. **Travel Time:** Data is not available at this time.

   d. **Non-Recurring Congestion:** There were 62 crashes reported in 2010 on Old Sauk Road/Old Middleton Road.

2. **Transit**

   a. **Transit Frequency:** During the peak traffic periods Madison Metro operates 2 buses per hour on Old Sauk Road/Old Middleton Road between University Avenue and Westfield Road.

   b. **Bus Ridership:** Route 15 is the only route located in this corridor. There were 143 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.

   c. **On-Time Performance:** Data is not available at this time.

   d. **Bus Lanes:** There are no exclusive bus lanes provided for the above bus routes on Old Sauk Road/Old Middleton Road.

3. **Bicycles**

   Old Middleton and Old Sauk Roads have bike lanes.

4. **Corridor Improvements**
No transportation improvements are currently planned or programmed for Old Sauk Road/Old Middleton Road.

**USH 14 – W. Beltline (USH 12/14) to CTH P**

1. Traffic
   a. **Traffic Volumes and Congestion**: Traffic is congested on USH 14 between W. Beltline (USH 12/14) and CTH P. Traffic volumes on Old Sauk Road/Old Middleton Road in the corridor range from 11,000 to 26,500 vpd.
   b. **Congestion Duration**: Data is not available at this time.
   c. **Travel Time**: Data is not available at this time.
   d. **Non-Recurring Congestion**: A total of 39 crashes occurred on USH 14 between W. Beltline (USH 12/14) and CTH P.

2. Transit
   a. **Transit Frequency**: There is no bus service on USH 14.
   b. **Bus Ridership**: N/A

3. Bicycles
   USH 14 has paved shoulders, but is least suitable for bicycling due to high traffic volumes and speeds. W. Old Sauk Rd., other town roads, and CTH KP provide a parallel route for most of the corridor, except for a short stretch in the Cross Plains area. There is interest in constructing a trail in the corridor, most likely along the rail line that parallels the roadway.

4. Corridor Improvements
   A corridor study is underway focusing on safety and operational improvements to this 2-Lane facility.

**Century Avenue (CTH M) – CTH Q to USH 12 Bypass**

1. Traffic
   a. **Traffic Volumes and Congestion**: Traffic is congested on Century Avenue (CTH M) between CTH Q and USH 12 bypass. The intersection of Century Avenue (CTH M) and USH 12 has been identified as a congested intersection. Traffic volumes on Century Avenue (CTH M) in the corridor ranges from 12,700 to 21,300 vpd.
   b. **Congestion Duration**: Data is not available at this time.
   c. **Travel Time**: Data is not available at this time.
   d. **Non-Recurring Congestion**: There were 54 crashes reported in 2010 on Century Avenue.

2. Transit
   a. **Transit Frequency**: During the peak traffic periods Madison Metro operates 2 buses per hour on Century Avenue (CTH M) between CTH Q and USH 12.
a. **Bus Ridership:** Routes 70 and 72 are the routes that run along this corridor. There were 119 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.

b. **Overload/Extra Buses:** No extra buses.

c. **On-Time Performance:** Data is not available at this time.

d. **Bus Lanes:** There are no exclusive bus lanes provided for the above bus routes on Century Avenue (CTH M).

3. **Bicycles**

   Century Ave. has low suitability for bicyclists due to lack of bike lanes, traffic volumes, and numerous curb cuts. It also lacks a good parallel route. The Pheasant Branch Creek (Main Branch) path and Donna Drive provide alternative routes to the south, but there is no direct route from Branch Street east.

4. **Corridor Improvements**

   No transportation improvements are currently planned or programmed for Century Avenue (CTH M).

**CTH M – CTH Q to STH 113**

1. **Traffic**

   a. **Traffic Volumes and Congestion:** Traffic is very congested on CTH M between CTH Q and Willow Road. Traffic volumes on CTH M in the corridor ranges from 12,700 to 21,300 vpd.

   b. **Congestion Duration:** Data is not available at this time.

   c. **Travel Time:** Data is not available at this time.

   d. **Non-Recurring Congestion:** There were 43 crashes reported in 2010 on CTH M.

2. **Transit**

   a. **Transit Frequency:** There are no bus routes on CTH M

   b. **Bus Ridership:** N/A

3. **Bicycles**

   CTH M has wide paved shoulders, but is still least suitable for bicycling due to high traffic volumes and speeds. There are no parallel routes. A path in the corridor is planned, but is likely a long-term project.

4. **Corridor Improvements**

   CTH M was recently resurfaced with some intersection improvements. No additional transportation improvements are currently programmed or planned.

**CTH Q – STH 113 (Main Street) to CTH M/Century Avenue**

1. **Traffic**

   a. **Traffic Volumes and Congestion:** Traffic is congested on CTH Q between STH 113 (Main Street) and CTH K. Traffic volumes on CTH Q in the corridor ranges from 11,000 to 11,400 vpd.

   b. **Congestion Duration:** Data is not available at this time.
c. **Travel Time:** Data is not available at this time.
d. **Non-Recurring Congestion:** There were 16 crashes reported in 2010 on CTH Q.

2. **Transit**
a. **Transit Frequency:** There are no bus routes on CTH Q.
b. **Bus Ridership:** N/A

3. **Bicycles**

CTH Q lacks marked bike lanes for most of its length, but does have wide pavement width north of 8th Street. Parallel on-street routes exist on both sides of the roadway. Bike lanes are proposed to be added as part of reconstruction of the roadway. The project is planned, but not yet programmed.

4. **Corridor Improvements**

Reconstruction planned for the north segment of the roadway but it is not programmed.

**STH 19 (Main Street) – CTH Q to Division Street**

1. **Traffic**
a. **Traffic Volumes and Congestion:** Traffic is congested on STH 19 (Main Street) between CTH Q and Division Street. Traffic volumes on STH 19 (Main Street) in the corridor range from 14,300 to 15,900 vpd.
b. **Congestion Duration:** Data is not available at this time.
c. **Travel Time:** Data is not available at this time.
d. **Non-Recurring Congestion:** There were 5 crashes reported in 2010 on STH 19 (Main Street).

2. **Transit**
a. **Transit Frequency:** There are no bus routes in Waunakee.
b. **Bus Ridership:** N/A

3. **Bicycles**

Main St. lacks bicycle accommodations. A parallel on-street route exists to the south (2nd, 3rd Streets) for most of this segment of roadway.

**Corridor Improvements**
The street is being reconstructed from Klein Drive to Division Street in 2014 and a roundabout installed at the STH 113/CTH Q intersection.

**South Transportation Corridors**

The congested South corridors consist of the following seven (7) arterial roadways:

1. S. Beltline (USH 12/14/18/151) – USH 51 to Verona Road (USH 18/151)
2. John Nolen Drive – Broom Street to S. Beltline
3. USH 51 (Stoughton Road) – S. Beltline to CTH B
4. S. Park Street – Olin Avenue to S. Beltline
5. Fish Hatchery Road (CTH D) – Park Street to McKee Road (CTH PD)
6. McKee Road (CTH PD) – Verona Road (USH 18/151) to Seminole Highway
7. Seminole Highway – Nakoma Road to McKee Road (CTH PD)

**S. Beltline (USH 12/14/18/151) – USH 51 to Verona Road (USH 18/151)**

1. Traffic
   - **Traffic Volumes and Congestion:** Traffic is congested on the S. Beltline (USH 12/14/18/151) between USH 51 and Monona Drive, very congested between Monona Drive and John Nolen Drive, congested between John Nolen Drive and CTH MM and very congested from CTH MM to Verona Road (USH 18/151). The segment from Rimrock Road to Seminole Highway has been identified as a congested bus corridor. The traffic volume on S. Beltline (USH 12/14/18/151) in the corridor is 116,450 vpd.
   - **Congestion Duration:** Data is not available at this time.
   - **Travel Time:** Data on travel time is provided from HNTB in the “Madison Beltline Operational Needs Study” completed in October 2007. Average travel time from USH 51 to Verona Road (USH 18/151) on S. Beltline (USH 12/14/18/151) is summarized below.

   **Table 1 – Average Travel Time in Minutes on S. Beltline**

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Direction</th>
<th>No Incidents</th>
<th>Wet/Ice/Snow/Fog</th>
<th>Disabled Vehicle</th>
<th>Slow Down</th>
<th>Stop and Go</th>
<th>Crash</th>
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<td>Eastbound</td>
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<td>8.35</td>
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</tr>
<tr>
<td>PM Peak Hour</td>
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<td>---</td>
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<td>16.33</td>
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<td></td>
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<td>13.55</td>
<td>---</td>
<td>8.95</td>
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</tr>
</tbody>
</table>

d. **Non-Recurring Congestion:** A total of 272 crashes were reported in 2010 on the segment of S. Beltline (USH 12/14/18/151) from USH 51 to Verona Road (USH 18/151).

2. Transit
   - **Transit Frequency:** During the peak traffic periods Madison Metro operates 2 buses per hour between S. Towne Drive and Seminole Highway.
   - **Bus Ridership:** Routes 12, 16 and 18 run along the Beltline or the frontage roads. Route 12 runs from S. Towne Drive to John Nolen Drive, route 16 runs from Rimrock Road to Park Street and route 18 runs from Park Street to Seminole Highway. There were 91 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.
   - **On-Time Performance:** Data is not available at this time.
   - **Bus Lanes:** There are no exclusive bus lanes provided for the above bus routes on the Beltline.

3. Bicycles
There is no direct parallel route to the Beltline for bicyclists. Crossings are the most important issue. The Fish Hatchery Road interchange is the largest barrier. It is being reconstructed to a diamond style, removing the weaving movements. This will improve bicyclist safety. More importantly, a new ped/bike overpass of the Beltline is being constructed to the west of this interchange as part of the Cannonball Trail being built in the abandoned rail corridor. Another overpass exists just east of the Park Street/USH 14 interchange. Another one to the west of this interchange at Perry Street is in the current bicycle plan.

4. Corridor Improvements

The Beltline and Fish Hatchery Road interchange is programmed for reconstruction in 2012. The remaining loop ramp will be removed, the ramps will be aligned and the bridges will be widened to accommodate dual left turn lanes. The Beltline/Verona Road interchange is being reconstructed to a single point interchange with construction expected to be completed in 2015.

John Nolen Drive – Broom Street to S. Beltline (USH 12/14/18)

1. Traffic
   a. Traffic Volumes and Congestion: Traffic is very congested on John Nolen Drive between S. Beltline (USH 12/14/18/151) and Rimrock Road and congested between Lakeside Street to Broom Street. Traffic volumes on John Nolen Drive in the corridor range from 35,400 to 50,450 vpd.
   b. Congestion Duration: Data is not available at this time.
   c. Travel Time: Data is not available at this time.
   d. Non-Recurring Congestion: There were 106 crashes reported in 2010 on John Nolen Drive.

2. Transit
   a. Transit Frequency: During the peak traffic periods Madison Metro operates 2 buses per hour between Broom Street and Olin Avenue, 4 buses per hour between Olin Avenue and Rimrock Road and 2 buses per hour between Rimrock Road and S. Beltline (USH 12/14/18/151).
   b. Bus Ridership: Routes 11 and 12 run along John Nolen Drive. There were 23 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.
   c. On-Time Performance: Data is not available at this time.
   d. Bus Lanes: There are no exclusive bus lanes provided for the above bus routes on John Nolen Drive.

3. Bicycles
   The Capital City Trail parallels John Nolen Drive and includes an underpass of the Beltline in the rail corridor.

4. Corridor Improvements
   No transportation improvements are currently planned or programmed for John Nolen Drive.
**USH 51 – S. Beltline (USH 12/18) to CTH B**

1. Traffic
   a. **Traffic Volumes and Congestion:** Traffic is very congested on USH 51 between S. Beltline (USH 12/18) and Voges Road and congested between Voges Road and CTH B. Traffic volumes on USH 51 in the corridor range from 27,650 to 36,000 vpd.
   
   b. **Congestion Duration:** Data is not available at this time.
   
   c. **Travel Time:** Data is not available at this time.
   
   d. **Non-Recurring Congestion:** There were 108 crashes reported in 2010 on USH 51.

2. Transit
   a. **Transit Frequency:** There are no bus routes on USH 51.
   
   b. **Bus Ridership:** N/A

3. Bicycles
   USH 51 lacks bike lanes on many stretches, including through the McFarland area. The Beltline interchange area is very problematic for bicyclists despite a path through the area on the east side. The recently built Marsh Road overpass of the Beltline provides an alternative to the east. The first phase of the Lower Yahara River Trail—programmed for construction in 2013—will provide another alternative. It will be constructed in the rail corridor with a bike bridge across Upper Mud Lake and connect to the Capital City Trail. It will provide a direct route between central McFarland and south Madison. Later phases of the trail will connect McFarland to Stoughton.

4. Corridor Improvements
   No transportation improvements are currently programmed or planned for this segment of USH 51.

**S. Park Street – Olin Avenue to S. Beltline (USH 12/14/18/151)**

1. Traffic
   a. **Traffic Volumes and Congestion:** Traffic is congested on S. Park Street between Olin Avenue and Buick Street and very congested between Buick Street and S. Beltline (USH 12/14/18/151). Traffic volumes on S. Park Street range from 22,500 to 32,250 vpd.
   
   b. **Congestion Duration:** Data is not available at this time.
   
   c. **Travel Time:** Data is not available at this time.
   
   d. **Non-Recurring Congestion:** There were 75 crashes reported in 2010 on S. Park Street.

2. Transit
   a. **Transit Frequency:** During the peak traffic periods Madison Metro operates 4 buses per hour between Olin Avenue and Wingra Drive, 2 buses per hour between Wingra Drive and Badger Road and 4 buses per hour between Badger Road and S. Beltline (USH 12/14/18/151).
b. **Bus Ridership:** Routes 5, 44 and 48 run along S. Park Street. There were 270 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.

c. **Overload/Extra Buses:** None

d. **On-Time Performance:** Data is not available at this time.

e. **Bus Lanes:** Bus lanes are provided on S. Park Street between Wingra Drive and S. Beltline (USH 12/14/18/151).

3. **Bicycles**

   There is a bus/bike lane from Badger Rd. to the rail line. From there north to Fish Hatchery Road there is just a wide curb lane. A bike route exists to the east, but it is not very direct. It connects to an overpass of the Beltline.

4. **Corridor Improvements**

   No transportation improvements are currently programmed or planned for S. Park Street.

**Fish Hatchery Road (CTH D) – Park Street to McKee Road (CTH PD)**

1. **Traffic**

   a. **Congestion V/C Corridor Conditions:** Traffic is congested on Fish Hatchery Road (CTH D) between Park Street and Wingra Drive, very congested between Wingra Drive and High Ridge Trail and congested between High Ridge Trail and McKee Road (CTH PD). The intersections of Fish Hatchery Road (CTH D) with Greenway Crossing and Badger Road have been identified as congested intersections. Traffic volumes on Fish hatchery Road (CTH D) in the corridor ranges from 27,650 to 43,800 vpd.

   b. **Congestion Duration:** Data is not available at this time.

   c. **Travel Time:** Data is not available at this time.

   d. **Non-Recurring Congestion:** There were 252 crashes reported in 2010 on Fish Hatchery Road (CTH D).

2. **Transit**

   a. **Transit Frequency:** During the peak traffic periods Madison Metro operates 4 buses per hour between Park Street and Badger Road, 2 buses per hour between Badger Road and Greenway Crossing, 4 buses per hour between Greenway Crossing and High Ridge Trail and 2 buses per hour between High Ridge Trail and McKee Road (CTH PD).

   b. **Bus Ridership:** There are 6 routes that run along Fish Hatchery Road which include routes 4, 18, 40, 44, 47 and 48. There were 268 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.

   b. **Overload/Extra Buses:** None

   c. **Bus Speeds:** Route 4 was analyzed for average bus travel speeds during the morning and evening peak traffic hours in both directions to and from the north and south transfer points (NTP, STP). During the
morning peak hour bus speeds to the NTP ranged from 6 to 10 mph between Badger Road and Catalpa Road, 11 to 25 mph between Catalpa Road and Carver Street, 16 to 25 mph between Carver Street and Plaenert Drive, 6 to 10 mph between Plaenert Drive and Wingra Drive, 11 to 25 mph between Wingra Drive and Midland Street and 16 to 25 mph between Midland Street and Park Street. During the evening peak hour bus speeds to the NTP varied from 11 to 15 mph between Badger Road and Catalpa Road, 16 to 25 mph between Carver Street and Midland Street, 11 to 15 mph between Midland Street and Brooks Street and 16 to 25 mph between Brooks Street and Park Street.

During the morning peak hour bus speeds to the STP ranged from 16 to 25 mph between Midland Street and Appleton Road, 11 to 15 mph between Wingra Drive and Plaenert Drive, 16 to 25 mph between Plaenert Drive and south of Catalpa Road, 0 to 5 mph at Catalpa Road and 16 to 25 mph between Catalpa Road and Badger Road. During the evening peak hour bus speeds to the STP ranged from 16 to 25 mph between High Street and Appleton Road, 0 to 5 mph between Appleton Road and Plaenert Road and 16 to 25 mph between Plaenert Road and Badger Road.

d. **On-Time Performance:** Route 4 was analyzed for on-time performance to and from the NTP and STP during the morning and evening peak hours. During the morning and evening peak hour buses were typically behind schedule whether it was traveling to the NTP or to the STP. The on-time performance is summarized below for the bus stop at the intersection of Park Street and Fish Hatchery Road.

- **AM Peak Hour to NTP:** Behind 2.7 minutes
- **PM Peak Hour to NTP:** Behind 2.8 minutes
- **AM Peak Hour to STP:** Behind 1.2 minutes
- **PM Peak Hour to STP:** Behind 3.7 minutes.

e. **Bus Lanes:** Bus lanes are provided on Fish Hatchery Road (CTH D) between Emil Street and High Ridge Trail.

3. **Bicycles**

   Fish Hatchery Rd. has bike lanes or bus/bike lanes. There is also a path on the west side from High Ridge Trail south. The pavement quality of the street north of the Beltline is in poor shape, including the bike lanes, but a pavement replacement project programmed for 2012 will fix that. The bike lanes will also be widened and a median installed on the southern part. The Fish Hatchery Road interchange area is a large barrier. It is being reconstructed in 2012 to a diamond style, removing the free-flow weaving movements, which will improve bicyclist safety. More importantly, a bike path (Cannonball Trail) with an overpass of the Beltline is being constructed in 2013 in the abandoned rail corridor west of the roadway. The path will extend southwest to McKee Road just east of Verona Road connecting to the Military Ridge Trail.

4. **Corridor Improvements**
The Beltline interchange is programmed to be reconstructed to a diamond style in 2012.

**McKee Road (CTH PD) – Verona Road (USH 18/151) to Fish Hatchery Road (CTH D)**

1. Traffic
   a. **Traffic Volumes and Congestion**: Traffic is congested on McKee Road (CTH PD) between Verona Road (USH 18/151) and Seminole Highway. Traffic volumes on McKee Road (CTH PD) range from 19,900 to 26,300 vpd.
   b. **Congestion Duration**: Data is not available at this time.
   c. **Travel Time**: Data is not available at this time.
   d. **Non-Recurring Congestion**: There were 5 crashes reported in 2010 on McKee Road (CTH PD).

2. Transit
   a. **Transit Frequency**: There are currently no bus routes on CTH PD, except just west of the Fish Hatchery Road intersection.
   b. **Bus Ridership**: N/A

3. Bicycles
   McKee Road is a divided street with bike lanes and therefore moderately suitable for bicycling despite the high traffic volumes and speeds. The Verona Road intersection is difficult. Carrying the bike lanes through the intersection would help. The intersection is planned to be converted to an interchange in the next 5-10 years. Another issue is the close proximity of the Military Ridge Trail crossing of McKee Road to the intersection. The construction of the Cannonball Trail in the former rail corridor, which crosses McKee Road further east of the intersection, and relocation of the Military Ridge Trail to the rail corridor south of McKee Road will help this situation. The long-term plan is to construct a grade-separated crossing of McKee Road for the path.

4. Corridor Improvements
   Turn lanes are being added at the CTH PD/Verona Road intersection in 2012. There are plans to construct a diamond interchange at the intersection of Verona Road (USH 12/18) and McKee Road (CTH PD), but the project is not currently programmed.

**Seminole Highway – Nakoma Road to McKee Road (CTH PD)**

1. Traffic
   a. **Traffic Volumes and Congestion**: Traffic is congested on Seminole Highway between Mohawk Drive and S. Beltline (USH 12/14/18/151), very congested between S. Beltline (USH 12/14/18/151) and Crescent Road and congested between Crescent Road and McKee Road (CTH PD). Traffic volumes on Seminole Highway range from 9,700 to 14,400 vpd.
   b. **Congestion Duration**: Data is not available at this time.
   c. **Travel Time**: Data is not available at this time.
d. **Non-Recurring Congestion:** There were 80 crashes reported in 2010 on Seminole Highway.

2. **Transit**
   a. **Transit Frequency:** There are no bus routes on Seminole Highway, except for a short segment north of the Beltline.
   b. **Bus Ridership:** N/A

3. **Bicycles**
   Seminole Highway has bike lanes and is a popular bicycling route despite the relatively high amount of traffic, particularly weekday commuter traffic diverted from Verona Road. The facilities in the Beltline interchange area were recently upgraded. The new Badger State Trail parallels somewhat the roadway and offers an alternative route.

4. **Corridor Improvements**
   No transportation improvements are currently programmed or planned for Seminole Highway.

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**East/Southeast Transportation Service Areas**

The congested East/Southeast Transportation Service Areas consist of the following nine (9) arterial streets:

1. I-39/90/94 – E. Washington Avenue (USH 151) to CTH N
2. Stoughton Road (USH 51) – STH 30 to S. Beltline (USH 12/18)
4. Monona Drive – Cottage Grove Road to S. Beltline (USH 12/18)
5. Cottage Grove Road – Stoughton Road (USH 51) to Vondron Road
6. E. Buckeye Road (CTH AB) – Stoughton Road (USH 51) to Vondron Road
7. Pflaum Road – Monona Drive to Stoughton Road (USH 51)
8. S. Beltline (USH 12/18) – I-39/90/94 to USH 51
9. N. Thompson Drive – STH 30 to Lien Road

**I-39/90/94 – E. Washington Avenue (USH 151) to CTH N**

1. **Traffic**
   a. **Traffic Volumes and Congestion:** Traffic is congested on I-39/90/94 between USH 151 and CTH N. Traffic volumes on I-39/90/94 on this segment of the Interstate range from 49,100 to 89,600 vpd.
   b. **Congestion Duration:** Data not available at this time.
   c. **Travel Time:** Data is not available at this time.
   d. **Non-Recurring Congestion:** A total of 85 crashes were reported in 2010 on the segment of I-39/90/94 from E. Washington Avenue (USH 151) to CTH N.

2. **Transit**
   a. **Transit Frequency:** There are no bus routes on the Interstate.
   b. **Bus Ridership:** N/A
3. Bicycles

An on-street bike route exists west of the Interstate from the East Towne area south to McFarland. There are currently no ped/bike crossings of the interstate. Building one (e.g., between Cottage Grove Rd. and Milwaukee St.) would be desirable but difficult and very expensive. Bike paths are planned in the two rail corridors between USH 151 and the Beltline, which provide crossings of the interstate. Both are high priority projects. The City of Madison has programmed construction of initial short segments of both paths.

4. Corridor Improvements

None programmed at this time. Design work has started on the planned expansion of I-39/90/94 from the Beltline to the Rock County Line, but construction is not anticipated for some time.

Stoughton Road (USH 51) – STH 30 to S. Beltline (USH 12/18)

1. Traffic

   a. Traffic Volumes and Congestion: Traffic is congested on Stoughton Road (USH 151) between Milwaukee Street and S. Beltline (USH 12/14/18/151). Traffic volumes on Stoughton Road (USH 51) in the segment range from 40,500 to 65,000 vpd.

   b. Congestion Duration: Data not available at this time.

   c. Travel Time: Data is not available at this time.

   d. Non-Recurring Congestion: A total of 193 crashes were reported in 2010 on the segment of Stoughton Road (USH 51) from STH 30 to the S. Beltline (USH 12/18).

2. Transit

   a. Transit Frequency: During the peak traffic periods Madison Metro operates 1 bus per hour on Stoughton Road (USH 51) between STH 30 and Milwaukee Street, 2 buses per hour between Milwaukee Street and E. Buckeye Road, 4 buses per hour between E. Buckeye Road and Helgesen Drive and 2 buses per hour between Helgesen Drive and S. Thompson Drive.

   b. Bus Ridership: Route 30 and 39 are the only two bus routes on Stoughton Road (USH 51). Route 30 runs from Commercial Avenue to Milwaukee Street and route 39 runs from Milwaukee Street to E. Buckeye Road. There were 3 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.

   b. On-Time Performance: Data not available at this time.

   c. Bus Lanes: None

3. Bicycles

An on-street bike route exists between Stoughton Rd. and the interstate. West of Stoughton Rd., local streets provide parallel routes for most of the length of the roadway, including a crossing of STH 30 via the Marsh View path. A ped/bike overpass of Stoughton Rd. exists south of
Milwaukee Street. The rail corridor also provides a grade-separated crossing near Cottage Grove Rd., but squeezing in a bike path along the rail corridor will be difficult. A potential ped/bike crossing connecting the east and west segments of Femrite Drive has also been identified in the bicycle plan.

4. Corridor Improvements
      Improvements are planned at the Pflaum Road and Buckeye Road intersections. These include reconfiguration with channelized islands and addition of monotube signal arms and detection loops. However, these projects are not yet programmed.

**Milwaukee Street – Fair Oaks Avenue to Sprecher Road**

1. Traffic
   a. **Traffic Volumes and Congestion:** Traffic is congested on Milwaukee Street between Fair Oaks Avenue and Stoughton Road (USH 51), very congested between Stoughton Road and Swanton Road and congested between Swanton Road and I-39/90/94. Traffic volumes on Milwaukee Street in the corridor range from 4,800 to 21,450 vpd.
   b. **Congestion Duration:** Data not available at this time.
   c. **Travel Time:** Data is not available at this time.
   d. **Non-Recurring Congestion:** There were 94 crashes reported in 2010 on Milwaukee Street.

2. Transit
   a. **Transit Frequency:** During the peak traffic periods Madison Metro operates 6 buses per hour between Fair Oaks Avenue and Walter Street, 12 buses per hour between Walter Street and Schenk Street (ETP located off Milwaukee Street) and 4 buses per hour between Schenk Street and Swanton Road.
   c. **Bus Ridership:** Routes 3, 5, 9, 16, 17 and 34 run along Milwaukee Street from Fair Oaks Avenue to Walter Street, most of the buses go to the ETP, which include routes 14, 15, 30, 32, 33 and 29 run along Milwaukee Street. There were 465 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.
   b. **Overload/Extra Buses:** None
   c. **On-Time Performance:** Data not available at this time.
   d. **Bus Lanes:** None

3. Bicycles
   Milwaukee St. has bike lanes for most of its length. They need to be added on the western end and on the bridge and approaches over the interstate. Bike facilities will be added to the Interstate overpass when it is replaced in 2019 or possibly earlier. Bike facilities were added to the Stoughton Rd. interchange area when that was reconstructed. There is also a ped/bike overpass of Stoughton Rd. with a connecting path south of Milwaukee St. East of the Interstate, Milwaukee St. is planned to be extended to CTH TT with an underpass of Interstate 94. The underpass is
currently being built as part of the I-94 expansion project. This will increase its attractiveness as a bike corridor.

4. Corridor Improvements
Milwaukee Street is planned to be reconstructed with bike lanes and sidewalks from N. Thompson to east of the Interstate in conjunction with the reconstruction of the Interstate bridge in 2019 or possibly earlier.

Monona Drive – Cottage Grove Road to S. Beltline (USH 12/14/18/151)

1. Traffic
   a. Traffic Volumes and Congestion: Traffic is congested on Monona Drive between Cottage Grove Road and S. Beltline (USH 12/14/18/151). Traffic volumes on Monona Drive in the corridor ranges from 17,500 to 28,350 vpd.
   b. Congestion Duration: Data not available at this time.
   c. Travel Time: Data is not available at this time.
   d. Non-Recurring Congestion: There were 77 crashes reported in 2010 on Monona Drive.

2. Transit
   a. Transit Frequency: During the peak traffic periods Madison Metro operates 2 buses per hour between Cottage Grove Road and Dean Avenue and offers a limited service route between Pflaum Road and Broadway. The routes operate closed door on the Monona side of the street because Monona does not contract for service. Monona has its own downtown commuter route that operates on parts of Monona Drive.
   d. Bus Ridership: Route 16 is the only route that runs along Monona Drive. There were 60 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.
   b. On-Time Performance: Data not available at this time.
   c. Bus Lanes: None

3. Bicycles
Bike lanes and a median were added to the segment of Monona Dr. between Pflaum/Nichols Rd. and Broadway as part of the recent roadway reconstruction. The segment from Pflaum to just south of Winnequah Dr. will be built with the same cross-section, while the short segment from Winnequah to Cottage Grove Road will have bike lanes, but no median. Construction of these two segments will occur in 2012-2013. Driveway curb cuts are being consolidated as part of the project to improve safety, though many still remain. There isn’t a close parallel route to the roadway, but one exists through Monona closer to the lake.

4. Corridor Improvements
As noted above, Monona Drive will be reconstructed in 2012-’13 between Pflaum Road and Cottage Grove Road with bike lanes and a median between Pflaum and just south of Winnequah at the high school.
Cottage Grove Road – Monona Drive to Sprecher Road

1. Traffic
   a. **Traffic Volumes and Congestion:** Traffic is congested on Cottage Grove Road between Stoughton Road (USH 51) and Acewood Boulevard and congested again between S. Thompson Drive and Sprecher Road. Traffic volumes on Cottage Grove Road in the corridor range from 9,750 to 26,600 vpd.
   b. **Congestion Duration:** Data not available at this time.
   c. **Travel Time:** Data is not available at this time.
   d. **Non-Recurring Congestion:** There were 93 crashes reported in 2010 on Cottage Grove Road.

2. Transit
   a. **Transit Frequency:** During the peak traffic periods Madison Metro operates 2 buses per hour between Maryturn Road and S. Thompson Drive.
   b. **Bus Ridership:** Routes 14 and 32 briefly run along Cottage Grove Road from Inwood Way to S. Thompson Drive.
   c. **Overload/Extra Buses:** None
   d. **On-Time Performance:** Data not available at this time.
   e. **Bus Lanes:** None

3. Bicycles
   Cottage Grove Rd. has bike lanes and a median. The local street network does not provide any parallel routes.

4. Corridor Improvements
   The Cottage Grove Road bridge over the Interstate is programmed to be reconstructed to accommodate 4 lanes and the roadway is programmed to be reconstructed and expanded to a 4-Lane divided cross-section between I-39/90/94 and Sprecher Road in 2016.

E. Buckeye Road (CTH AB) – Monona Drive (USH 51) to Sprecher Road

1. Traffic
   a. **Traffic Volumes and Congestion:** Traffic is congested on E. Buckeye Road (CTH AB) between Stoughton Road (USH 51) and Vondron Road. Traffic volumes on E. Buckeye Road (CTH AB) in the corridor range from 10,150 to 20,950 vpd.
   b. **Congestion Duration:** Data not available at this time.
   c. **Travel Time:** Data is not available at this time.
   d. **Non-Recurring Congestion:** There were 64 crashes reported in 2010 on E. Buckeye Road (CTH AB).

2. Transit
   a. **Transit Frequency:** During the peak traffic periods Madison Metro operates 4 buses per hour between Stoughton Road (USH 51) and Stoughton Road Service Road.
a. **Bus Ridership:** Route 39 is the only bus route that runs along E. Buckeye Road in this corridor. There were 63 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.

b. **Overload/Extra Buses:** None

c. **On-Time Performance:** Data not available at this time.

d. **Bus Lanes:** None

3. **Bicycles**

   Buckeye Road has bike lanes. The Capital City Trail in the rail corridor to the south is programmed to be extended to Wagon Trail just west of the Interstate in the next few years.

4. **Corridor Improvements**

   Buckeye Road is programmed to be reconstructed to an urban cross section with bike lanes, parking and sidewalk between Monona Drive and Stoughton Road (USH 51).

### Pflaum Road – Monona Drive to Stoughton Road (USH 51)

1. **Traffic**

   a. **Traffic Volumes and Congestion:** Traffic is congested on Pflaum Road between Monona Drive and Stoughton Road (USH 51). Traffic volumes on Pflaum Road in the corridor range from 10,300 to 14,600 vpd.

   b. **Congestion Duration:** Data not available at this time.

   c. **Travel Time:** Data is not available at this time.

   d. **Non-Recurring Congestion:** There were 71 crashes reported in 2010 on Pflaum Road.

2. **Transit**

   a. **Transit Frequency:** During the peak traffic periods Madison Metro operates 2 buses per hour between Alder Street and Groveland Terrace, 4 buses per hour between Groveland Terrace and Turner Avenue and offers a limited service route between Monona Drive and Alder Street.

   b. **Bus Ridership:** Routes 16 and 38 are the bus routes that run along Pflaum Road between Monona Drive and Turner Avenue. There were 293 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.

   c. **Overload/Extra Buses:** An extra bus is added to route 16 during the morning peak hour to the ETP and at Lafollette High School to the STP.

   d. **Bus Speeds:** Data not available at this time.

   e. **On-Time Performance:** Data not available at this time.

   f. **Bus Lanes:** None

3. **Bicycles**

   Pflaum Rd. only has bike lanes for a segment in the area of LaFollette High School. Bike lanes should be added when the street is reconstructed in the future. However, the wide pavement width with little parking makes it still relatively suitable for bicycling now despite fairly high traffic volumes. Bike lanes were added at the Pflaum/Stoughton Rd.
intersection, but it is still difficult due to the close proximity of the frontage roads to the intersection.

4. Corridor Improvements
No transportation improvements are currently planned or programmed for Pflaum Road.

**S. Beltline (USH 12/18) – I-39/90/94 to Stoughton Road (USH 51)**

1. Traffic
   a. **Traffic Volumes and Congestion:** The Beltline is not identified as having a significant congestion issue on the segment between I-39/90/94 and Stoughton Road (USH 51). The traffic volume on S. Beltline (USH 12/18) in the corridor is 73,800 vpd.
   b. **Congestion Duration:** Data is not available at this time.
   c. **Travel Time:** Data is not available at this time.
   d. **Non-Recurring Congestion:** There were 62 crashes reported in 2010 on this segment of the S. Beltline (USH 12/18).

2. Transit
   a. **Transit Frequency:** There are no bus routes on this section of the Beltline
   b. **Bus Ridership:** N/A

3. Bicycles
Dutch Mill Rd./Femrite Rd. has bike lanes, including at the Stoughton Rd. intersection. That intersection is still difficult for bicyclists due to its size, turning movements, and proximity to the Beltline interchange. A grade separated crossing (street or ped/bike only) at Femrite Dr. would be desirable.

4. Corridor Improvements
No transportation improvements are currently programmed or planned for S. Beltline (USH 12/14/18/151).

**N. Thompson Drive – Milwaukee Street to Lien Road**

1. Traffic
   a. **Traffic Volumes and Congestion:** Traffic is very congested on N. Thompson Drive between STH 30 and Lien Road. Traffic volumes on N. Thompson Drive range from 15,300 to 16,350 vpd. It is a “back door” entrance to the East Towne area.
   b. **Congestion Duration:** Data is not available at this time.
   c. **Travel Time:** Data is not available at this time.
   d. **Non-Recurring Congestion:** There were 49 crashes reported in 2010 on N. Thompson Drive.

2. Transit
   a. **Transit Frequency:** During the peak periods Madison Metro operates 2 buses per hour on N. Thompson Drive from STH 30 to Lien Road.
b. **Bus Ridership:** Route 30 is the only route located in this corridor. There were 310 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.

c. **Overload/Extra Buses:** None

d. **On-Time Performance:** Data is not available at this time.

e. **Bus Lanes:** None

3. **Bicycles**

   - This segment of N. Thompson Dr. was restriped with parking and bike lanes a while back, improving conditions on this street for which there are no alternate routes.

4. **Corridor Improvements**

   - A roundabout was recently constructed at the N. Thompson Drive/Lien Road/Zeier Road intersection. No additional transportation improvements are currently programmed or planned.

**West/Southwest Transportation Service Areas**

The congested West/Southwest Transportation Service Areas consist of the following ten (10) arterial roadways:

1. W. Beltline (USH 12/14) – Verona Road (USH 18/151) to Old Sauk Road
2. Verona Road (USH 18/151) – W. Beltline (USH 12/14) to McKee Road (CTH PD)
3. CTH M (S. Pleasant View Road) – Mineral Point Road (CTH S) to Paoli Street
4. Mineral Point Road (CTH S) – Pioneer Road to Glenway Street/Speedway Road
5. Gammon Road/McKenna Boulevard – Odana Road to Hammersley Road
6. Nakoma Road – Hammersley Road to Odana Road
7. Midvale Boulevard – Tokay Boulevard to Nakoma Road
8. Odana Road – Whitney Way to Midvale Boulevard
9. Schroeder Road – Rayovac Drive to Whitney Way
10. Whitney Way – Schroeder Road to Odana Road

**W. Beltline (USH 12/14) – Verona Road (USH 18/151) to Old Sauk Road**

1. **Traffic**

   a. **Traffic Volumes and Congestion:** Traffic is very congested on W. Beltline (USH 12/14) between Verona Road (USH 18/151) and Whitney Way and congested between Whitney Way and Old Sauk Road. Traffic volumes on W. Beltline (USH 12/14) in the corridor ranges from 49,100 to 89,600 vpd.

   b. **Congestion Duration:** Data is not available at this time.

   c. **Travel Time:** Data on travel time is provided from HNTB in the “Madison Beltline Operational Needs Study” completed in October 2007. Average travel time from Verona Road (USH 18/151) to Old Sauk Road on W. Beltline is summarized below.
Table 2 – Average Travel Time in Minutes on W. Beltline

<table>
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<th>Time Period</th>
<th>Direction</th>
<th>No Incidents</th>
<th>Wet/Ice/Snow/Fog</th>
<th>Disabled Vehicle</th>
<th>Slow Down</th>
<th>Stop and Go</th>
<th>Crash</th>
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<tr>
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<td>5.11</td>
<td>---</td>
<td>5.06</td>
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</tr>
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</table>

d. **Non-Recurring Congestion:** A total of 129 crashes were reported in 2010 on the segment of W. Beltline (USH 12/14) between Verona Road (USH 18/151) and Old Sauk Road.

2. Transit
   a. **Transit Frequency:** During peak traffic periods Madison Metro Transit offers limited service on Route 55.
   b. **Bus Ridership:** Route 55 is the only route that runs along W. Beltline (USH 12/14) between Verona Road (USH 18/151) and Whitney Way.
   c. **On-Time Performance:** Data is not available at this time.
   d. **Bus Lanes:** None

3. Bicycles
   Reasonably direct suitable parallel routes exist south, north, and west of the Beltline, except for a portion of CTH M and the CTH M/Mineral Point intersection, which will be addressed as part of the CTH M reconstruction project. Both on-street bike lanes and an off-street path with several grade-separated crossings will constructed as part of the CTH M reconstruction and expansion project programmed for 2012-2015. The path north of the Beltline between Grand Canyon Dr. and Medical Circle will be extended a short distance east to Whitney Way.

4. Corridor Improvements
   Eastbound and westbound auxiliary lanes are planned between Old Sauk Road and Mineral Point Road interchanges on W. Beltline (USH 12/14).

**Verona Road (USH 18/151) – W. Beltline (USH 12/14) to McKee Road (CTH PD)**

1. Traffic
   a. **Traffic Volumes and Congestion:** Traffic is congested on Verona Road (USH 18/151) between W. Beltline (USH 12/14) and Raymond Road and very congested between Raymond Road and McKee Road (CTH PD). Traffic volumes on Verona Road (USH 18/151) in the corridor range from 50,750 to 56,400 vpd.
   b. **Congestion Duration:** Data not available at this time.
   c. **Travel Time:** Data not available at this time.
d. **Non-Recurring Congestion**: A total of 94 crashes were reported in 2010 on the segment of Verona Road (USH 18/151) between W. Beltline (USH 12/14) and McKee Road (CTH PD).

2. **Transit**
   a. **Transit Frequency**: During peak traffic periods Madison Metro Transit operates 4 buses per hour between W. Beltline (USH 12/14) and Service Lane, 2 buses per hour between Service lane and Chalet Gardens Road and offers a limited service route from Chalet Gardens Road to McKee Road (CTH PD).
   b. **Bus Ridership**: Routes 19 and 55 are the routes that run along Verona Road (USH 18/151). There were 37 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.
   c. **On-Time Performance**: Data is not available at this time.
   d. **Bus Lanes**: None

3. **Bicycles**
   The Southwest path and Badger State Trail and Seminole Highway, which has bike lanes, generally parallel Verona Road to the east. The Southwest path provides a grade-separated crossing of Verona Road and the Beltline. There is also a safe crossing of the Beltline east of the Verona Road interchange via an on-street bike route. Pedestrian and bicycle improvements to the Verona Road frontage roads and two new grade-separated crossings of Verona Road will be constructed as part of the Verona Road/West Beltline interchange area improvements programmed for 2013-2015.

4. **Corridor Improvements**
   As part of the Verona Road/West Beltline interchange reconstruction, Verona Road will be expanded to 8 lanes from the Beltline to Summit Road and the Summit Road intersection redesigned to eliminate left turns from Verona Road. The Verona Road (USH 18/151) intersections with Williamsburg Way and Raymond Road will be reconstructed and reconfigured in 2015.

**CTH M (S. Pleasant View Road) – Mineral Point Road (CTH S) to Paoli Street**

1. **Traffic**
   a. **Traffic Volumes and Congestion**: Traffic is very congested on CTH M (S. Pleasant View Road) between Mineral Point Road (CTH S) to McKee Road (CTH PD) and congested between McKee Road (CTH PD) and Paoli Street. Traffic volumes on CTH M (S. Pleasant View Road) in the corridor range from 19,160 to 21,900 vpd.
   b. **Congestion Duration**: Data not available at this time.
   c. **Travel Time**: There were 20 crashes reported in 2010 on CTH M (S. Pleasant View Road).
   d. **Non-Recurring Congestion**: There were 20 crashes reported in 2010 on CTH M (S. Pleasant View Road).
2. Transit
   a. **Transit Frequency**: During peak traffic periods Madison Metro Transit operates 2 buses per hour between Mineral Point Road (CTH S) and Watts Road.
   b. **Bus Ridership**: Routes 73 is the only route that runs along CTH M (S. Pleasant View Road).
   c. **On-Time Performance**: Data is not available at this time.
   d. **Bus Lanes**: None

3. Bicycles
   The recently constructed segment of the Ice Age Junction path from McKee Rd. (CTH PD) south to the Military Ridge Trail provides a parallel route to the east for part of the corridor. High Point Road will complete this route once the missing segment between Raymond Rd. and Mid-Town Rd. is constructed and the bike lanes are added to the segment south of Watts Rd. The CTH M reconstruction and expansion project programmed for 2012-2015 includes bike lanes, a parallel off-street path to the west, and graded-separated crossings of Mineral Point Road, Pleasant View Road extension, and CTH M. The CTH M underpass will connect to a planned connection to the Ice Age Junction path.

4. Corridor Improvements
   CTH M (Mineral Point Road to north of Cross Country) is programmed for reconstruction and expansion to a 4-Lane divided street with bike lanes in 2012-2015. Improvements will be made at the major intersections, including a partially grade separated intersection at Mineral Point Road.

**Mineral Point Road (CTH S) – Pioneer Road to Glenway Street/Speedway**

1. Traffic
   a. **Traffic Volumes and Congestion**: Traffic is congested on Mineral Point Road (CTH S) between Pioneer Road to Pleasant View Road, very congested between Pleasant View Road and W. Beltline (USH 12/14) and congested between W. Beltline (USH 12/14) and Glenway Stet/Speedway. The intersections of Mineral Point Road (CTH S) with Gammon Road and Midvale Road have been identified as congested intersections. Traffic volumes on CTH M (S. Pleasant View Road) in the corridor range from 13,050 to 37,500 vpd.
   b. **Congestion Duration**: Data not available at this time.
   c. **Travel Time**: Data not available at this time.
   d. **Non-Recurring Congestion**: There were 241 crashes reported in 2010 on Mineral Point Road (CTH S).

2. Transit
   a. **Transit Frequency**: During peak traffic periods Madison Metro Transit operates 2 buses per hour between CTH M and S. High Point Road, 4 buses per hour between Westward Way to Segoe Road and 2 buses per hour between Segoe Road and Glenway Street/Speedway.
b. **Bus Ridership:** There are 5 different routes that run along Mineral Point Road (CTH S) in the corridor which are 11, 14, 15 and 67. There were 147 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.

c. **Overload/Extra Buses:** None

d. **On-Time Performance:** Data is not available at this time.

e. **Bus Lanes:** There are reserved bus lanes on Mineral Point Road (CTH S) between S. High Point Road and Whitney Way.

3. **Bicycles**

   Mineral Point Road has a reserved lane for buses, bikes, and right-turning traffic from Whitney Way west. The right-turning traffic and higher traffic speeds still make this segment of Mineral Point Rd. only moderately suitable for bicycling. The roadway east of Whitney Way is a barrier for bicyclists due to the lack of bike lanes or complete parallel on-street route. The path connection to Science Dr. recently built did help fill one of the major gaps. A path through the UW Research Park is recommended in the Bicycle Plan.

4. **Corridor Improvements**

   A roundabout was added to the Pleasant View Road intersection as part of the extension of Pleasant View south to CTH M. The intersection with CTH M/Junction will be reconstructed and expanded to a partially grade separated intersection with a jug handle. As part of this project, Mineral Point Road will be expanded to six lanes between the Beltline and CTH M and four lanes from CTH M to Pleasant View Road.

**Gammon Road/McKenna Boulevard – Mineral Point Road to Raymond Road**

1. **Traffic**

   a. **Traffic Volumes and Congestion:** Traffic is very congested on Gammon Road/McKenna Boulevard between Odana Road to Watts Road and congested between Watts Road and Hammersley Road. The intersections of Gammon Road with Odana Road and Watts Road have been identified as congested. Traffic volumes on Gammon Road/McKenna Boulevard in the corridor range from 17,300 to 46,250 vpd.

   b. **Congestion Duration:** Data not available at this time.

   c. **Travel Time:** Data not available at this time.

   d. **Non-Recurring Congestion:** There were 44 crashes reported in 2010 on Gammon Road/McKenna Boulevard.

2. **Transit**

   a. **Transit Frequency:** During peak traffic periods Madison Metro Transit operates 2 buses per hour between Odana Road and Schroeder Road and 4 buses per hour between Schroeder Road and Hammersley Road.

   b. **Bus Ridership:** There are 3 different routes that run along Gammon Road/McKenna Boulevard. Route 73 runs between Odana Road and Watts Road, route 50 runs between Watts Road and Hammersley Road.
and route 58 runs between Schroeder Road and Hammersley Road. There were 180 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.

c. Overload/Extra Buses: None
d. On-Time Performance: Data is not available at this time.
e. Bus Lanes: There are reserved bus lanes on Gammon Road between Tree Lane and the Beltline.

3. Bicycles

The Gammon Rd./Beltline interchange area lacks bicycle accommodations and the 6-lane high traffic area with numerous turning movements creates problems for bicyclists. However, a grade-separated crossing of the Beltline exists just to the east of the interchange. To the west, the High Point Road Bridge over the Beltline will be replaced and widened with bike lanes in 2016. Also, a potential new street crossing west of the interchange has been identified, which would provide a direct route to the West Towne Mall area. Completion of the bikeway link south to the Ice Age Junction path will increase use of this corridor.

4. Corridor Improvements

Improvements are programmed in 2012 for the interchange of Gammon Road with W. Beltline (USH 12/14) by constructing turn lanes and extending auxiliary lanes.

Nakoma Road – Hammersley Road to Odana Road

1. Traffic

   a. Traffic Volumes and Congestion: Traffic is congested on Nakoma Road between W. Beltline (USH 12/14) and Odana Road. Traffic volumes on Nakoma Road in the corridor range from 9,300 to 16,450 vpd.

   b. Congestion Duration: Data not available at this time.

   c. Travel Time: Data not available at this time.

   d. Non-Recurring Congestion: There were 13 crashes reported in 2010 on Nakoma Road.

2. Transit

   a. Transit Frequency: During peak traffic periods Madison Metro Transit operates 2 buses per hour between Odana Road and Hammersley Road.

   b. Bus Ridership: Route 19 is the only route that runs along Nakoma Road in the corridor. There were 147 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.

   c. On-Time Performance: Data is not available at this time.

   d. Bus Lanes: None

3. Bicycles

   Nakoma Road lacks bike lanes, but is a wide (42’) two-lane street with parking. The Southwest path and Manitou Way bike route provide parallel facilities on both sides of the street, including crossings of the Beltline to the south.
4. Corridor Improvements

No transportation improvements are currently planned or programmed for Nakoma Road.

Midvale Boulevard – Regent Street to Nakoma Road

1. Traffic

a. Traffic Volumes and Congestion: Traffic is congested on Midvale Boulevard between Tokay Boulevard and Nakoma Road. Traffic volumes on Midvale Road in the corridor range from 18,700 to 21,750 vpd.

b. Congestion Duration: Data not available at this time.

c. Travel Time: Data not available at this time.

d. Non-Recurring Congestion: There were 14 crashes reported in 2010 on Midvale Boulevard.

2. Transit

a. Transit Frequency: During peak traffic periods Madison Metro Transit operates 2 buses per hour between Tokay Boulevard and Nakoma Road.

b. Bus Ridership: Route 18 is the only route that runs along Midvale Road in the corridor and is a via route. There were 176 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.

c. On-Time Performance: Data is not available at this time.

d. Bus Lanes: None

3. Bicycles

Midvale Blvd. has bike lanes between Hammersley and Mineral Point Rd. The Southwest path and short path connection to Odana Rd. provide a parallel route to the west. Bike lanes will be added to Midvale Blvd. between Nakoma Rd. and the Beltline interchange as part of the Verona Rd./West Beltline interchange project programmed for construction in 2013-15.

4. Corridor Improvements

No other transportation improvements are currently programmed or planned for Midvale Road.

Odana Road – Gammon Road to Nakoma Road/Monroe Street

1. Traffic

a. Traffic Volumes and Congestion: Traffic is congested on Odana Road between Whitney Way and Midvale Boulevard. Traffic volumes on Odana Road in the corridor range from 8,300 to 13,900 vpd.

b. Congestion Duration: Data not available at this time.

c. Travel Time: Data not available at this time.

d. Non-Recurring Congestion: There were 94 crashes reported in 2010 on Odana Road.

2. Transit
a. **Transit Frequency:** During peak traffic periods Madison Metro Transit operates 4 buses per hour between Whitney Way and Odana Road.
b. **Bus Ridership:** Routes 3 and 58 are the routes that run along Odana Road in the corridor. There were 436 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.
c. **On-Time Performance:** Data is not available at this time.
d. **Bus Lanes:** None

3. **Bicycles**
   Odana Road has bike lanes between Segoe Road and Midvale Boulevard. Tokay Blvd. provides a parallel route to the north. The path on the north side of the Beltline is programmed to be extended from Medical Circle east to Whitney Way with an extra wide sidewalk on the east side of Whitney Way connecting to Odana Lane.

4. **Corridor Improvements**
   No other transportation improvements are currently programmed or planned for Midvale Road.

**Schroeder Road – Gammon Road to Whitney Way**

1. **Traffic**
   a. **Traffic Volumes and Congestion:** Traffic is congested on Schroeder Road between Rayovac Drive and Whitney Way. Traffic volumes on Schroeder Road in the corridor are 12,300 vpd.
   b. **Congestion Duration:** Data not available at this time.
   c. **Travel Time:** Data not available at this time.
   d. **Non-Recurring Congestion:** There were 44 crashes reported in 2010 on Schroeder Road.

2. **Transit**
   a. **Transit Frequency:** During peak traffic periods Madison Metro Transit operates 4 buses per hour between Rayovac Drive and Whitney Way.
   b. **Bus Ridership:** Routes 50 and 58 are the routes that run along Schroeder Road in the corridor. There were 169 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.
   c. **On-Time Performance:** Data is not available at this time.
   d. **Bus Lanes:** None

3. **Bicycles**
   Schroeder Road has bike lanes. There are no close parallel routes.

4. **Corridor Improvements**
   No transportation improvements are currently planned or programmed for
Whitney Way – Regent Street to Raymond Road

1. Traffic
   a. Traffic Volumes and Congestion: Traffic is very congested on Whitney Way between Schroeder Road and Odana Road. Traffic volumes on Whitney Way in the corridor are 39,500 vpd.
   b. Congestion Duration: Data not available at this time.
   c. Travel Time: Data not available at this time.
   d. Non-Recurring Congestion: There were 140 crashes reported in 2010 on Whitney Way.

2. Transit
   a. Transit Frequency: During peak traffic periods Madison Metro Transit operates 6 buses per hour between Schroeder Road and Odana Road due to West Transfer Point located at Tokay Boulevard.
   b. Bus Ridership: There are four main routes that run along Whitney Way in the corridor. The four routes are 18, 50, 51 and 52. There were 237 weekday bus boardings and alightings per mile in the corridor based on Fall 2005 data.
   c. On-Time Performance: Data is not available at this time.
   d. Bus Lanes: None

3. Bicycles
   The Whitney Way interchange area lacks bike lanes. The path on the north side of the Beltline is programmed to be extended from Medical Circle east to Whitney Way with an extra wide sidewalk on the east side of Whitney Way connecting to Odana Lane and the bike route network.

4. Corridor Improvements
   No other transportation improvements are currently planned or programmed for Whitney way.
Appendix B

Congested Roadways, Hourly Traffic Volumes on Selected Roadways and Beltline and Interstate Travel Speeds
Congested V/C Corridor Conditions

The congested transportation corridors are shown in more detail at the end of this section on the 2006 Arterial Roadway Congestion Levels Map.

Principal Arterials - Interstate Congested Corridors

The Madison MPO identified volume to capacity ratios on the IH-39/90/94 system based on the AADT and capacity of the system. Interstate segments operating at a v/c ratio of 0.65 to 0.89 has been identified as ‘congested’ operation and a v/c ratio of 0.90 or greater has been identified as ‘very congested’ operation. Table 2 identifies the congested interstate corridors. Only the Interstate corridors that were identified by the Madison MPO as ‘congested’ or ‘very congested’ were included in the table below.

Table B1: Principal Arterials - Interstate Congested Corridors

<table>
<thead>
<tr>
<th>PRINCIPAL ARTERIALS - INTERSTATE</th>
<th>CONGESTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>IH 39/90/94 from E. Washginton Ave (USH 151) to IH 94/WS 30</td>
<td>Congested</td>
</tr>
<tr>
<td>IH 39/90 from IH 94/WS 30 to S. Beltline (USH 12/14/18/151)</td>
<td>Congested</td>
</tr>
<tr>
<td>IH 39/90 from S. Beltline (USH 12/14/18/151) to Buckeye Road (CTH AB)</td>
<td>Congested</td>
</tr>
</tbody>
</table>

Congested = 0.65 to 0.89     Very Congested = 0.90 or greater

These corridors are congested because traffic demand is beginning to approach or in some cases for the ‘very congested’ category exceeds the capacity of the roadway, non-recurring incidents and bottlenecks.

Principal Arterials – Other Freeway

Volume to Capacity Analysis

The Madison MPO identified volume to capacity ratios on the area freeway system and major roadways based on the AADT and capacity of the system. Segments operating at a v/c ratio of 0.65 to 0.89 have been identified as ‘congested’ operation and a v/c ratio of 0.90 or greater has been identified as ‘very congested’ operation. Table 3 identifies the congested freeway corridors. Only the freeway corridors that were identified by the Madison MPO as ‘congested’ or ‘very congested’ were included in the table below.

Table B2: Principal Arterials - Other Freeway Congested Corridors

<table>
<thead>
<tr>
<th>PRINCIPAL ARTERIALS - OTHER FREEWAY</th>
<th>CONGESTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>W. Beltline (USH 12/14) from Verona Road (USH 151/18) to Odana Road</td>
<td>Very Congested</td>
</tr>
<tr>
<td>W. Beltline (USH 12/14) from Odana Road to Old Sauk Road</td>
<td>Congested</td>
</tr>
<tr>
<td>S. Beltline (USH 12/14/18/151) from Verona Road (USH 18/151) to Rimrock Road</td>
<td>Very Congested</td>
</tr>
<tr>
<td>S. Beltline (USH 12/14/18/151) from Rimrock Road to John Nolen Drive</td>
<td>Congested</td>
</tr>
<tr>
<td>S. Beltline (USH 12/14/18/151) from John Nolen Drive to Monona Drive</td>
<td>Very Congested</td>
</tr>
<tr>
<td>S. Beltline (USH 12/14/18/151) from Monona Drive to Stoughton Road (USH 51)</td>
<td>Congested</td>
</tr>
<tr>
<td>Verona Road (USH 18/151) from McKee Road (CTH PD) to Raymond Road</td>
<td>Very Congested</td>
</tr>
<tr>
<td>Verona Road (USH 18/151) from Raymond Road to W. Beltline (USH 12/14)</td>
<td>Congested</td>
</tr>
</tbody>
</table>

Congested = 0.65 to 0.89     Very Congested = 0.90 or greater
These corridors are congested because traffic demand exceeds the capacity of the roadway. Additional congestion may be caused by non-recurring incidents which include crashes, weather, work zones, and special events. The v/c calculations and congestion categories do not factor in the impact on capacity and congestion of non-recurring incidents. They also don’t factor in potential location-specific bottlenecks resulting from roadway geometry, typically at interchanges.

**Principal Arterials – Other**

*Volume to Capacity Analysis*

The Madison MPO also identified volume to capacity ratios on the principal arterials based on AADT and capacity of the system. Principal Arterials operating at a v/c ratio of 0.65 to 0.89 has been identified as ‘congested’ operation and a v/c ratio of 0.90 or greater has been identified as ‘very congested’ operation. Table 4 identifies the congested principal arterial corridors and identifies if a congested intersection lies within the corridor. Only the principal arterial corridors that were identified by the Madison MPO as ‘congested’ or ‘very congested’ were included in the table below.
Table B3: Principal Arterials - Other Congested Corridors

<table>
<thead>
<tr>
<th>PRINCIPAL ARTERIALS - OTHER</th>
<th>CONGESTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTH M from CTH S to McKee Road</td>
<td>Very Congested</td>
</tr>
<tr>
<td>CTH M from McKee Road (CTH PD) to CTH MV</td>
<td>Congested</td>
</tr>
<tr>
<td>CTH S from Pleasant View Road to USH 12/14</td>
<td>Very Congested</td>
</tr>
<tr>
<td>CTH S from USH 12/14 to Midvale Boulevard</td>
<td>Congested</td>
</tr>
<tr>
<td>Midvale Boulevard from Tokay Boulevard to Nakoma Road</td>
<td>Congested</td>
</tr>
<tr>
<td>Verona Road (USH 18/151) from Beltline (USH 12/14/18) to Raymond Road</td>
<td>Congested</td>
</tr>
<tr>
<td>Verona Road (USH 18/151) from Raymond Road to McKee Road</td>
<td>Very Congested</td>
</tr>
<tr>
<td>McKee Road from USH 151/18 to Seminole Highway</td>
<td>Congested</td>
</tr>
<tr>
<td>Fish Hatchery Road (CTH D) from McKee Road (CTH PD) to Breckenridge Court</td>
<td>Congested *</td>
</tr>
<tr>
<td>Fish Hatchery Road (CTH D) from Breckenridge Court to Wingra Drive</td>
<td>Very Congested</td>
</tr>
<tr>
<td>Fish Hatchery Road (CTH D) from Wingra Drive to Park Street</td>
<td>Congested</td>
</tr>
<tr>
<td>Park Street from University Avenue to W. Washington Avenue</td>
<td>Congested</td>
</tr>
<tr>
<td>Park Street from W. Washington Avenue to Fish Hatchery Road (CTH D)</td>
<td>Very Congested</td>
</tr>
<tr>
<td>Park Street from Fish Hatchery Road (CTH D) to Buick Street</td>
<td>Congested</td>
</tr>
<tr>
<td>Park Street from Buick Street to S. Beltline (USH 12/14/18/151)</td>
<td>Very Congested</td>
</tr>
<tr>
<td>John Nolen Drive from N. Shore Drive to CTH MM</td>
<td>Congested *</td>
</tr>
<tr>
<td>John Nolen Drive from CTH MM to S. Beltline (USH 12/14/18/151)</td>
<td>Very Congested</td>
</tr>
<tr>
<td>Stoughton Road (USH 51) from Milwaukee Street to S. Beltline (USH 12/14/18/151)</td>
<td>Congested</td>
</tr>
<tr>
<td>Stoughton Road (USH 51) from S. Beltline (USH 12/14/18/151) to Voges Road</td>
<td>Very Congested</td>
</tr>
<tr>
<td>Stoughton Road (USH 51) from Voges Road to Mahoney Road</td>
<td>Congested</td>
</tr>
<tr>
<td>Stoughton Road (USH 51) from STH 60 to Windsor Road</td>
<td>Very Congested</td>
</tr>
<tr>
<td>STH 19 from CTH Q to CTH I</td>
<td>Congested *</td>
</tr>
<tr>
<td>STH 19 from Portage Road to Stoughton Road (USH 151)</td>
<td>Congested</td>
</tr>
<tr>
<td>STH 19 from Stoughton Road (USH 151) to Bird Street</td>
<td>Very Congested</td>
</tr>
<tr>
<td>STH 113 from River Road to Aberg Avenue</td>
<td>Congested</td>
</tr>
<tr>
<td>Aberg Avenue from Sherman Avenue to Shopko Drive</td>
<td>Very Congested</td>
</tr>
<tr>
<td>Aberg Avenue from Shopko Drive to Stoughton Road (USH 151)</td>
<td>Congested</td>
</tr>
<tr>
<td>E. Johnson Street from Baldwin Street to Bassett Street</td>
<td>Very Congested</td>
</tr>
<tr>
<td>E. Gorham Street from Baldwin Street to Bassett Street</td>
<td>Very Congested</td>
</tr>
<tr>
<td>University Avenue from Bassett Street to Campus Drive</td>
<td>Very Congested</td>
</tr>
<tr>
<td>Johnson Street from Bassett Street to Campus Drive</td>
<td>Very Congested</td>
</tr>
<tr>
<td>Campus Drive from University Avenue to University Avenue</td>
<td>Congested</td>
</tr>
<tr>
<td>University Avenue from Campus Drive to Old Middleton Road</td>
<td>Congested</td>
</tr>
<tr>
<td>CTH MS from Old Middleton Road to Allen Boulevard</td>
<td>Congested</td>
</tr>
<tr>
<td>USH 14 from CTH P to Allen Boulevard</td>
<td>Congested *</td>
</tr>
<tr>
<td>CTH M from USH 12 to CTH Q</td>
<td>Congested *</td>
</tr>
<tr>
<td>CTH M from CTH Q to Woodland Lane</td>
<td>Very Congested</td>
</tr>
<tr>
<td>E. Washington Avenue (USH 151) from I-39/90/94 to Blair Street</td>
<td>Congested *</td>
</tr>
</tbody>
</table>

* Additional congested locations identified by the CMP Committee Members

These corridors are congested due to inadequate intersection capacity, non-recurring incidents, signal timing and vehicle to pedestrian conflicts.

**Minor Arterials**

**Volume to Capacity Analysis**

The Madison MPO identified the volume to capacity ratios on the minor arterials based on AADT and capacity of the system. Minor Arterials operating at a v/c ratio of 0.65 to
0.89 has been identified as ‘congested’ operation and a v/c ratio of 0.90 or greater has been identified as ‘very congested’ operation. Table 5 identifies the congested minor arterial corridors and identifies if a congested intersection lies within a congested corridor. Only the minor arterial corridors that were identified by the Madison MPO as ‘congested’ or ‘very congested’ were included in the table below.

Table B4 – Minor Arterials Congested Corridors

<table>
<thead>
<tr>
<th>PRINCIPAL ARTERIALS - OTHER</th>
<th>CONGESTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTH M from CTH S to McKee Road</td>
<td>Very Congested</td>
</tr>
<tr>
<td>CTH M from McKee Road (CTH PD) to CTH MV</td>
<td>Congested</td>
</tr>
<tr>
<td>CTH S from Pleasant View Road to USH 12/14</td>
<td>Very Congested</td>
</tr>
<tr>
<td>CTH S from USH 12/14 to Midvale Boulevard</td>
<td>Congested</td>
</tr>
<tr>
<td>Midvale Boulevard from Tokay Boulevard to Nakoma Road</td>
<td>Congested</td>
</tr>
<tr>
<td>Verona Road (USH 18/151) from Beltline (USH 12/14/18) to Raymond Road</td>
<td>Congested</td>
</tr>
<tr>
<td>Verona Road (USH 18/151) from Raymond Road to McKee Road</td>
<td>Very Congested</td>
</tr>
<tr>
<td>McKee Road from USH 151/18 to Seminole Highway</td>
<td>Congested</td>
</tr>
<tr>
<td>Fish Hatchery Road (CTH D) from McKee Road (CTH PD) to Breckenridge Court</td>
<td>Congested *</td>
</tr>
<tr>
<td>Fish Hatchery Road (CTH D) from Breckenridge Court to Wingra Drive</td>
<td>Very Congested</td>
</tr>
<tr>
<td>Fish Hatchery Road (CTH D) from Wingra Drive to Park Street</td>
<td>Congested</td>
</tr>
<tr>
<td>Park Street from University Avenue to W. Washington Avenue</td>
<td>Congested</td>
</tr>
<tr>
<td>Park Street from W. Washington Avenue to Fish Hatchery Road (CTH D)</td>
<td>Very Congested</td>
</tr>
<tr>
<td>Park Street from Fish Hatchery Road (CTH D) to Buick Street</td>
<td>Congested</td>
</tr>
<tr>
<td>Park Street from Buick Street to S. Beltline (USH 12/14/18/151)</td>
<td>Very Congested</td>
</tr>
<tr>
<td>John Nolen Drive from N. Shore Drive to CTH MM</td>
<td>Congested *</td>
</tr>
<tr>
<td>John Nolen Drive from CTH MM to S. Beltline (USH 12/14/18/151)</td>
<td>Very Congested</td>
</tr>
<tr>
<td>Stoughton Road (USH 51) from Milwaukee Street to S. Beltline (USH 12/14/18/151)</td>
<td>Congested</td>
</tr>
<tr>
<td>Stoughton Road (USH 51) from S. Beltline (USH 12/14/18/151) to Voges Road</td>
<td>Very Congested</td>
</tr>
<tr>
<td>Stoughton Road (USH 51) from Voges Road to Mahoney Road</td>
<td>Congested</td>
</tr>
<tr>
<td>Stoughton Road (USH 51) from StH 60 to Windsor Road</td>
<td>Very Congested</td>
</tr>
<tr>
<td>STH 19 from CTH Q to CTH I</td>
<td>Congested *</td>
</tr>
<tr>
<td>STH 19 from Portage Road to Stoughton Road (USH 151)</td>
<td>Congested</td>
</tr>
<tr>
<td>STH 19 from Stoughton Road (USH 151) to Bird Street</td>
<td>Very Congested</td>
</tr>
<tr>
<td>STH 113 from River Road to Aberg Avenue</td>
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<tr>
<td>Aberg Avenue from Sherman Avenue to Shopko Drive</td>
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</tr>
<tr>
<td>Aberg Avenue from Shopko Drive to Stoughton Road (USH 151)</td>
<td>Congested</td>
</tr>
<tr>
<td>E. Johnson Street from Baldwin Street to Bassett Street</td>
<td>Very Congested</td>
</tr>
<tr>
<td>E. Gorham Street from Baldwin Street to Bassett Street</td>
<td>Very Congested</td>
</tr>
<tr>
<td>University Avenue from Bassett Street to Campus Drive</td>
<td>Very Congested</td>
</tr>
<tr>
<td>Johnson Street from Bassett Street to Campus Drive</td>
<td>Very Congested</td>
</tr>
<tr>
<td>Campus Drive from University Avenue to University Avenue</td>
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</tr>
<tr>
<td>University Avenue from Campus Drive to Old Middleton Road</td>
<td>Congested</td>
</tr>
<tr>
<td>CTH MS from Old Middleton Road to Allen Boulevard</td>
<td>Congested</td>
</tr>
<tr>
<td>USH 14 from CTH P to Allen Boulevard</td>
<td>Congested *</td>
</tr>
<tr>
<td>CTH M from USH 12 to CTH Q</td>
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</tr>
<tr>
<td>CTH M from CTH Q to Woodland Lane</td>
<td>Very Congested</td>
</tr>
<tr>
<td>E. Washington Avenue (USH 151) from IH 39/90/94 to Blair Street</td>
<td>Congested *</td>
</tr>
</tbody>
</table>

* Additional congested locations identified by the CMP Committee Members.

These corridors are congested due to inadequate intersection capacity, non-recurring incidents, signal timing and vehicle to pedestrian conflicts.
Intersection Capacity Analysis

The City of Madison Traffic Engineering Division determined the intersection capacity and operating conditions during the peak hours based on existing peak hour traffic volumes at certain current congested intersections. The LOS was determined using the methodologies described in the *Highway Capacity Manual (HCM2000)*.

The LOS of the following intersections have been provided by the City of Madison and a matrix summarizing the operating conditions can be seen at the end of this section:

**Table B5 - Intersection Level-of-Service**

<table>
<thead>
<tr>
<th>INTERSECTION</th>
<th>AM</th>
<th>PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midvale Road and Mineral Point Road</td>
<td>---</td>
<td>LOS D</td>
</tr>
<tr>
<td>East Washington Avenue and Mendota Street</td>
<td>LOS A</td>
<td>LOS C</td>
</tr>
<tr>
<td>University Avenue and Farley Avenue/University Bay Drive</td>
<td>---</td>
<td>LOS F</td>
</tr>
<tr>
<td>John Nolen Drive and Blair Street</td>
<td>---</td>
<td>LOS D</td>
</tr>
<tr>
<td>CTH D/Fish Hatchery Road and Greenway Cross</td>
<td>LOS E</td>
<td>LOS F</td>
</tr>
</tbody>
</table>

These intersections are congested because of inadequate intersection capacity and vehicle to pedestrian conflicts.
Figure B1 - 2006 Congestion Levels

2006 Congestion Levels
Madison Area, Dane County

Arterial Roadway Congestion Levels
- Congested
- Very Congested

Very Congested Problem Intersections
- For Auto Traffic
- For Transit
- For Auto Traffic and Transit

Prepared by staff to the:

NAME: pldms
FILE: \FPS2\DATA2\Users\pldms\ArcMapPrj\Trans\CMP2011\Congestion_Madison_2006_CMP.mxd
PRINTED: 8/12/11
Congestion Duration – Hourly Traffic Flows

Beltline Hourly Traffic Flows

Figure B2 – Weekday Traffic Volumes on USH 12/14 Between Old Sauk Road and Greenway

USH 12/14 Between Old Sauk Road and Greenway

April - Typical Wednesday

Total Number of Vehicles per Hour

Time of Day

Eastbound
Westbound
Figure B3 – Weekend Traffic Volumes on USH 12/14 Between Old Sauk Road and Greenway (Eastbound)

Figure B4 – Weekend Traffic Volumes on USH 12/14 Between Old Sauk Road and Greenway (Westbound)
Figure B5 – Weekday Traffic Volumes on USH 12/14 West of High Point Road

Figure B6 – Weekend Traffic Volumes on USH 12/14 West of High Point Road (Eastbound)
Figure B7 – Weekend Traffic Volumes on USH 12/14 West of High Point Road (Westbound)

Figure B8 – Weekday Traffic Volumes on Beltline 1.0 Mile East of S. Towne Drive/CTH BW
Figure B9 – Weekend Traffic Volumes on Beltline 1.0 Mile East of S. Towne Drive/CTH BW (Eastbound)

Figure B10 – Weekend Traffic Volumes on Beltline 1.0 Mile East of S. Towne Drive/CTH BW (Westbound)
IH 39/90 Hourly Traffic Flows

Figure B11 – Weekday Traffic Volumes on I-39/90 at Cottage Grove Road/CTH BB

Figure B12 – Weekend Traffic Volumes on I-39/90 at Cottage Grove Road/CTH BB (Northbound)
Figure B13 – Weekend Traffic Volumes on I-39/90 at Cottage Grove Road/CTH BB (Southbound)

I-39/90 at Cottage Grove Road/CTH BB

August - Southbound

IH 39/90/94 Hourly Traffic Flows

Figure B14 – Weekday Traffic Volumes on I-39/90/94 North of USH 151

I-39/90/94 North of USH 151

April - Typical Thursday
Figure B15 - Weekend Traffic Volumes on I-39/90/94 North of USH 151 (Northbound)

Figure B16 - Weekend Traffic Volumes on I-39/90/94 North of USH 151 (Southbound)
Local Arterial Hourly Traffic Flows

Figure B17 – Weekday Traffic Volumes on Park Street

Traffic Count Location - S. Park Street (Station # : 3004)

April - Thursday

Time of Day

Total Number of Vehicles per Hour

Northbound

Southbound

Figure B18 – Weekday Traffic Volumes on Fish Hatchery Road

Traffic Count Location - Fish Hatchery Road (Station # : 3360)

October - Thursday

Time of Day

Total Number of Vehicles per Hour

Northbound

Southbound
Figure B19 – Weekday Traffic Volumes on Williamson Street

Traffic Count Location - Williamson Street (Station #: 290990)

April - Thursday

Figure B20 – Weekday Traffic Volumes on Monroe Street

Traffic Count Location - Monroe Street (Station #: 3003)

April - Thursday
Figure B21 – Weekday Traffic Volumes on E. Johnson St./E. Gorham St.

Traffic Count Location - E. Johnson St./E. Gorham St. (Station # : 3215)

June - Wednesday

- E. Johnson Street
- E. Gorham Street

Time of Day

Total Number of Vehicles per Hour

June 1 - Wednesday 3000

- 0 500 1000 1500 2000 2500

Traffic Volumes on E. Johnson St./E. Gorham St.
Congestion Duration – Travel Speeds
Figure B22 – Eastbound Beltline Travel Speed

Figure showing Eastbound Beltline Travel Speed between Mineral Point Road and IH 39/90 in April 2011.
Figure B24 – Northbound IH 39/90 Travel Time between IH 94/WIS 30 and USH 151

Post Speed Limit

65 MPH POSTED SPEED LIMIT
Figure B25 – Southbound IH 39/90 Travel Time between IH 94/WIS 30 and USH 151
Figure B26 – Northbound IH 39/90 Travel Speed between USH 12/18 and IH 94/WIS 30 in April 2011
Figure B27 – Southbound IH 39/90 Travel Speed between USH 12/18 and IH 94/WIS 30 in April 2011

65 MPH POSTED SPEED LIMIT
Appendix C

Metro Transit Service Frequencies (Headways)
Metro Transit Service Frequency

Figure C1 provides detailed information on the service frequencies for those route segments with less than 15-minute peak period headways and Figures C2 through C4 show average headways. Headway is important because it provides a measure of rider satisfaction and service. For example, when a route has 5 minute headways missing a bus or not being able to board because of crowding has less serious consequences than if the headway is 30 minutes.
2010 Transit Service
Average Peak Headways
Less than 15 Minutes

10 to 14 Minutes
5 to 9 Minutes
< 5 Minutes

Transfer Point
Incorporated Area (2010)
Figure C3 - 2010 Average Midday Headways Less than 15 Minutes
2010 Transit Service
Average Midday Headways

- < 15 Minutes
- 15 Minutes
- > 60 Minutes
- 30 Minutes
- Limited Service
- Incorporated Area (2010)
- Transfer Point

Prepared by staff to the: Madison Area Transportation Planning Board

Printed: 12/2/2010
Appendix D

Metro Transit – Scheduled Extra Buses
<table>
<thead>
<tr>
<th>AM Extras List</th>
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<tr>
<td>185</td>
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<td>117</td>
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</table>

Load data is an average of all trips operated between November 1 and December 23, 2010.

"Corridor Extras" are used to significantly improve frequency in a specific corridor and are not tied to a specific trip that's either overloaded or for which the schedule has become unmanageable due to varied circumstances.
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<tr>
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<th>Load</th>
<th>Route</th>
<th>Helps Run</th>
<th>Load</th>
<th>Start</th>
<th>End</th>
<th>Origin</th>
<th>Destination</th>
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<td>605</td>
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<td>741</td>
<td>47</td>
<td>504p</td>
<td>536p</td>
<td>Observatory &amp; Highland to NTP</td>
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<td>38</td>
<td>550</td>
<td>39</td>
<td>419p</td>
<td>513p</td>
<td>Babcock &amp; Linden to Frontage &amp; Pflaum</td>
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Appendix E

Metro Transit On-Time Performance – Pilot Project for Route 4
Pilot Metro Transit Bus Arrival Data

Figures E1 through E6 illustrate the on-time performance of the route at each time point in each direction for the morning peak, midday, and evening peak periods. The data is from a single weekday in 2011 and thus is not necessarily representative of typical operating performance. Overall, the on-time performance was good for this sample day with buses reaching almost all time points within 3 minutes of the scheduled time. The northbound p.m. peak period created the most problems with buses averaging 4.3 and 5.5 minutes late to the last two time points before the transfer point. A large sample size and further analysis, including a comparison to boarding and alighting data, would be needed to draw any conclusions from the data. Metro and MPO staff agreed that such a data compilation and mapping exercise would be helpful for analyzing patterns or issues with a single route or on a single corridor (e.g., a problem intersection turning movement), but not for a system wide analysis. The most logical system wide analysis would be to calculate the percentage of times buses reach each time point “on time”. This would probably also be more meaningful for a route analysis since averaging of on-time arrival data could be affected by a small number of very late bus trips due to unusual circumstances (e.g., multiple wheelchair trips).
Figure E1 - Northbound AM Peak Hour On-Time Performance

On-Time Performance
Metro Transit Route 4*
Peak AM (6 AM to 9 AM)
To North Transfer Point

Prepared by staff to the:

TRANSPORTATION PLANNING BOARD
Metropolitan Planning Organization (MPO)

PRINTED: 4/18/2011

FILE: C:\ArcMapPrj\Trans\Metro\RouteSpeed\Route4TimePoint_115_PeakAM.mxd

NAME: pkdms
On-Time Performance
Metro Transit Route 4*
Peak AM (6 AM to 9 AM)
To South Transfer Point

Timepoint Crossing with Adherence to Schedule in Minutes.
On-Time Performance
Metro Transit Route 4*
Midday (9 AM to 3 PM)
To South Transfer Point

Timepoint Crossing with
Adherence to Schedule in Minutes.
On-Time Performance
Metro Transit Route 4*
Peak PM (3 PM to 6 PM)
To North Transfer Point

Prepared by staff to the:
Transportation Planning Board
Madison Metropolitan Planning Organization (MPO)

Printed: 4/18/2011

NAME: pldms
FILE: C:\ArcMapPrj\Trans\Metro\RouteSpeed\Route4TimePoint_121_PeakPM.mxd
Figure E6 - Southbound PM Peak Hour On-Time Performance

On-Time Performance
Metro Transit Route 4*
Peak PM (3 PM to 6 PM)
To South Transfer Point
Appendix F

2010 Bicycle Volumes at City of Madison Multi-Use Path Count Locations
City of Madison - Traffic Engineering
Bicycle Station Counts - Daily Traffic

Bicycle Stations

B1) John Nolen Dr Bike Path (by the station cabinet)
B2) John Nolen Dr Bike Path (by the bridge)
B3) Brittingham Bay Bike Path
B4) Wingra Creek Bike Path Loops @ Park St.
B5) University Ave @ Mills St Bike Lanes
B6) East Rail Isthmus Loops
B7) Southwest Bike Path @ Breese Terrace (July 2009)
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<tr>
<th>Station No.</th>
<th>Location</th>
<th>Year 2010 Monthly Counts</th>
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<td>John Nolen Dr. Bike Path (by the bridge)</td>
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<td>East Rail Isthmus Loops (between Winnebago and Yahara bridge)</td>
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Appendix G

Report of 2010 Madison Area Interstate Incidents
### Summary of Incident Management Reports from State Patrol

#### I-39/90 CORRIDOR

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<th>Avg. Duration</th>
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Not included in Avg. Duration
## Summary of Incident Management Reports from State Patrol

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<td>3:03</td>
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<td>42893</td>
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<td>INTID</td>
<td>TMDDSTARTTIME</td>
<td>MAINSTREET</td>
<td>CROSSSTREET</td>
<td>Dur</td>
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Appendix H

Planned Intelligent Transportation Systems Improvement Projects in the Madison Area
System Wide Planned Intelligent Transportation System Projects/Improvements

WisDOT has identified ITS deployment locations throughout Dane County which include the following ITS Elements: Traffic detection, CCTV Surveillance (Closed Circuit Television), Ramp Metering, Ramp Closure Gates, Dynamic Message Sign, Portable Changeable Message Sign, Crash Investigation Sites. These ITS Elements are planned to be implemented at the following locations by the year 2013:

Northwest Madison/Middleton

- W. Beltline (USH 12/14) at Terrace Avenue (?)
  - Dynamic Message Sign
- W. Beltline (USH 12/14) at Greenway Boulevard
  - Traffic Detection
  - CCTV Surveillance
  - Ramp Metering
- W. Beltline (USH 12/14) at Old Sauk Road
  - Traffic Detection
  - CCTV Surveillance
  - Ramp Metering
- W. Beltline (USH 12/14) at Mineral Point Road
  - Traffic Detection
  - CCTV Surveillance
  - Ramp Metering
- W. Beltline (USH 12/14) at Gammon Road
  - Traffic Detection
  - CCTV Surveillance
  - Ramp Metering
- W. Beltline (USH 12/14) at Tokay Boulevard (?)
  - Dynamic Message Sign
- W. Beltline (USH 12/14) at Whitney Way
  - Traffic Detection
  - CCTV Surveillance
  - Ramp Metering
- W. Beltline (USH 12/14) at Verona Road (USH 18/151)
  - Traffic Detection
  - CCTV Surveillance

South and East Madison/Monona

- S. Beltline (USH 12/14/18/151) at Seminole Highway
  - Traffic Detection
  - CCTV Surveillance
- S. Beltline (USH 12/14/18/151) at Todd Drive
  - Traffic Detection
  - CCTV Surveillance
  - Ramp Metering
- S. Beltline (USH 12/14/18/151) at Fish Hatchery Road/CTH D
- S. Beltline (USH 12/18) at Park Street
  - Traffic Detection
  - CCTV Surveillance
  - Ramp Metering
- S. Beltline (USH 12/18) at Rimrock Road
  - Traffic Detection
- S. Beltline (USH 12/18) at S. Towne Drive
  - Traffic Detection
- S. Beltline (USH 12/18) East of Bridge between S. Towne Dr. and Monona Dr.
  - Portable Changeable Message Sign
- S. Beltline (USH 12/18) at Monona Drive
  - Traffic Detection
- S. Beltline (USH 12/18) at Stoughton Road/USH 51
  - Traffic Detection
  - CCTV Surveillance
- USH 51/Stoughton Rd. at Stoughton Road (?)
  - CCTV Surveillance
- USH 51/Stoughton Rd. at STH 30
  - Traffic Detection
  - CCTV Surveillance
- IH 39/90 South of the IH 94 Interchange
  - Traffic Detection
- IH 39/90 at Cottage Grove Rd./CTH BB
  - Traffic Detection
  - CCTV Surveillance
- IH 39/90 at Buckeye Rd./CTH AB
  - Traffic Detection
  - CCTV Surveillance
- IH 39/90 at S. Beltline (USH 12/18) Interchange
  - Traffic Detection
- IH 39/90 at Siggelkow Road
  - Traffic Detection

**Northeast Madison, DeForest, Sun Prairie Area**

- IH 39/90/94 at CTH DM
  - Traffic Detection
- IH 39/90/94 at CTH V
  - Traffic Detection
  - CCTV Surveillance
  - Ramp Metering
- IH 39/90/94 at River Road
  - Dynamic Message Sign
- IH 39/90/94 at STH 19
  - Traffic Detection
- CCTV Surveillance

- IH 39/90/94 at USH 51
  - Traffic Detection
  - CCTV Surveillance
  - Ramp Metering

- IH 39/90/94 at USH 151
  - Traffic Detection
  - CCTV Surveillance

- USH 151 at CTH C/Reiner Rd.
  - Traffic Detection
  - CCTV Surveillance

- USH 151 at Main Street
  - Traffic Detection
  - CCTV Surveillance

The figures on the next pages show the TOIP Based ITS Deployment throughout Dane County and the locations circled in pink are planned to be implemented by year 2013.
Map Legend
ITS Elements
- Automatic Traffic Recorder
- Traffic Detection
- Traffic Signal Improvements
- CCTV Surveillance
- Ramp Metering
- Ramp Closure Gates
- Dynamic Message Sign
- Portable Changeable Message Sign
- Crash Investigation Site
- Law Enforcement Pad
- Fiber Optic Cable

Figure H2 - Southeast Madison TOIP Based ITS Deployment

DRAFT Southeast Madison – TOIP Based ITS Deployment
Appendix I

Roadway Levels of Service for Motorists
Roadway Levels of Service for Motorists

Introduction

Roadway level of service (LOS) is a standard concept used by transportation engineers and planners to define different roadway traffic operating conditions and the perception of those conditions by motorists when accommodating various traffic volume levels. While the Congestion Management Process for the Madison Area will be using other measures that are more easily understood by the traveling public, LOS will continue to be used as a “bridge” measure to supplement other measures of congestion. This appendix describes LOS for motorists in more detail.

Nationally recognized LOS concepts have also been developed for public transit, pedestrians, and bicyclists operating conditions. The various transportation modes interact with each other such that LOS improvements for one mode may improve or lower the LOS for other modes. Reflecting this, a multi-modal LOS concept has also been developed. The Madison Area TPB (MPO) has used the bicycle LOS in the past and will be investigating the use of others such as the multi-modal LOS for future planning efforts. For now, LOS for motorists is the only one that will be used for the Congestion Management Process, in large part due to the lack of data for other modes.

Data Used to Calculate LOS for Motorists

The Highway Capacity Manual (HCM) uses data on the characteristics and geometrics of a roadway to determine the amount of traffic a roadway can carry per hour. Traffic volume and composition (i.e., % of trucks, buses, etc.) data is compared with this defined roadway capacity. HCM computational methods are then used to estimate the roadway LOS. LOS and capacity of roadways are defined differently for uninterrupted and interrupted flow roadway facilities which are described below.

Uninterrupted flow LOS is defined by the density of vehicles per lane, travel speed and volume to capacity ratio. The data used to calculate the LOS for non-signalized, uninterrupted flow (i.e. interstate, freeway, and expressway) roadways includes, but is not limited to the following:

- Number of roadway travel lanes;
- Lane widths;
- Roadway shoulders (presence, size, and whether paved or unpaved);
- Presence, density, and design of on- and off-ramps;
- Roadway terrain and grade percentage;
- Posted speed limits;
- Presence of a median or lack thereof;
- Traffic volume and hourly flow patterns; and
- Traffic composition (percentage of trucks, buses, and recreational vehicles)

It is noted that the operation of uninterrupted flow facilities are also affected by the LOS at ramp merge/diverge points and along traffic weaving sections. For regional planning
For signalized urban streets, LOS is defined by the average delay experienced by motorists at an intersection. However, it can also be calculated for street segments based on congested versus free-flow travel speeds. In addition to the data set listed above, the LOS for interrupted flow on signalized arterial streets and at signalized intersections includes, but is not limited to the following:

- Presence of turn lanes (exclusive or shared);
- Density and timing/coordination of traffic signals;
- Phasing, cycle lengths, etc. of traffic signals;
- Density of driveways;
- Presence of on-street parking and bus stops;
- Presence of bike lanes or lack thereof;
- Bicyclist and pedestrian volumes; and
- Traffic volume and hourly flow patterns.

**LOS for the Different Roadway Facilities**

LOS is the measure by which a motorist perceives traffic flow conditions, and these perceived measures include travel time, freedom to maneuver, travel delay, comfort, and ease of use or convenience. The HCM rates traffic flows from a LOS ‘A’ to ‘F’, where LOS ‘A’ represents the best operating conditions and free-flow movement from a motorist’s perspective. At the opposite end of the spectrum, LOS ‘F’ represents the worst operating conditions with extreme congestion and stop-and-go conditions. A definition of each level of service is described below for three (3) types of facilities: freeway segments; arterial streets; and intersections.

**Freeway Segments**

The 2010 HCM uses three performance measures for freeway segments: (1) density in passenger cars per mile per lane (pc/mi/ln); (2) average speed in miles per hour (mi/h); and (3) traffic flow rate to capacity (v/c). Each of these measures is an indication of how well traffic is being accommodated. The LOS is determined from these performance measures with particular threshold values leading to a corresponding LOS. These quantitative measures are very difficult for a motorist to recognize, so each service level describes maneuverability and comfort level. These are much easier concepts for the motorist to understand and recognize, yet they still correspond with hard data.

**LOS A** represents free-flow conditions. Individual motorists are virtually unaffected by the presence of others in the traffic stream.

**LOS B** also allows travel speeds at or near free-flow speeds, but the presence of other users begins to be noticeable. There is a slight decline in the freedom to maneuver within the traffic stream relative to LOS ‘A’.
LOS C occurs when the freedom to maneuver is noticeably restricted. The general level of comfort and convenience declines significantly at this level. Crashes or incidents can result in significant queue formation and vehicular delay. **LOS D** represents the conditions where speeds begin to decline slightly. The freedom to maneuver becomes more restricted, and drivers experience reductions in physical and psychological comfort. Crashes or incidents can generate lengthy queues. **LOS E** represents operating conditions at or near the roadway’s capacity. Even minor disruptions to the traffic stream, such as vehicles entering from a ramp or vehicles changing lanes, can cause delays as other vehicles give way to allow such maneuvers. In general, maneuverability is extremely limited, and drivers experience considerable physical and psychological discomfort. **LOS F** describes a complete breakdown in vehicular flow. Long queues form quickly because of incidents and at on- and off-ramps. Vehicles typically operate at low speeds and under stop-and-go conditions.

### Level of Service Criteria for Freeway Segments

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<tr>
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<td>&lt;= 11</td>
</tr>
<tr>
<td>B</td>
<td>&gt; 11 – 18</td>
</tr>
<tr>
<td>C</td>
<td>&gt; 18 – 26</td>
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<tr>
<td>D</td>
<td>&gt; 26 – 35</td>
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<tr>
<td>E</td>
<td>&gt; 35 – 45</td>
</tr>
<tr>
<td>F</td>
<td>Volume-to-Capacity &gt; 1.0</td>
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</table>

### Arterial Streets

For arterial streets the HCM uses the travel speed of through vehicles to quantify the LOS. The travel speed value considers both the travel time between signalized intersections and the delay incurred at each boundary intersection, indicating the overall degree of mobility provided by the facility. Similar to freeway segments, but with slight differences due to the facility type, the HCM describes the service levels for arterial streets as follows:

- **LOS A** describes free-flow conditions.
- **LOS B** describes reasonably unimpeded travel, with the ability to maneuver only slightly affected.
- **LOS C** describes stable operations with some difficulty maneuvering at midpoint locations, and longer queues at intersections.
- **LOS D** indicates less than stable operating conditions with increased traffic flow contributing to substantial increases in delay. This may be due to adverse signal progression, high traffic volumes, and/or poor signal timing.
**LOS E** describes unstable conditions and significant delay, with larger traffic volumes than LOS D. This is also caused by the same factors as LOS D. **LOS F** is characterized by flows at extremely low speeds. Extreme congestion is likely occurring at the intersections with large delays and extensive queues. LOS F also occurs whenever the through movement at an intersection has a volume-to-capacity ratio of greater than 1.00.

<table>
<thead>
<tr>
<th>Level of Service</th>
<th>Travel Speed as a Percentage of Base Free-Flow Speed (%)</th>
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<td>A</td>
<td>&gt; 85</td>
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<tr>
<td>B</td>
<td>&gt; 67 - 85</td>
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<tr>
<td>C</td>
<td>&gt; 50 - 67</td>
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<tr>
<td>D</td>
<td>&gt; 40 - 50</td>
</tr>
<tr>
<td>E</td>
<td>&gt; 30 - 40</td>
</tr>
<tr>
<td>F</td>
<td>&lt;= 30 (Volume-to-Capacity &gt; 1.0)</td>
</tr>
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</table>

**Signalized Intersections**

At signalized intersections control delay is used to characterize level of service and is calculated as the average seconds delayed per vehicle. According to the 2010 HCM, “Delay quantifies the increase in travel time due to traffic signal control. It is also a surrogate measure of driver discomfort and fuel consumption.” Delay parameters are longer at signalized intersections than at non-signalized intersections (stop sign-controlled), because motorists accept longer delays at signalized intersections knowing that they provide a regular expected green cycle for them to travel through the intersection. The HCM describes the service levels for signalized intersections as follows:

**LOS A** describes operations where motorists experience minimal delay, and with favorable signal timing and progression, most vehicles will travel through the intersection without stopping. Traffic signal cycle lengths are generally very short. **LOS B** indicates operations where motorists experience relatively short delays, although motorists are more likely to be stopped at the intersection. Cycle lengths are still relatively short. **LOS C** describes longer delays, favorable progression, but moderately longer cycle lengths. Individual movements may experience a failed cycle, where a motorist is not able to clear the intersection during their supplied green time. The number of vehicles required to stop is significant. **LOS D** conditions occur with a high volume-to-capacity (v/c) ratio and when the signal progression is ineffective or the cycle length is long. Many vehicles are required to stop and individual cycle failures are noticeable. **LOS E** describes conditions with long delays, a high v/c ratio (although still less than 1.0), poor progression, and long cycle lengths. Individual cycle failures are frequent.
**LOS F** describes conditions with delays of longer than 80 seconds per vehicle, or a v/c ratio greater than 1.0. Motorists experience very poor signal progression, long cycle lengths, and most cycles fail to clear the queue.

### Level of Service Criteria for Signalized Intersections

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<td>&gt; 10 – 20</td>
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<td>C</td>
<td>&gt; 20 – 35</td>
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<td>D</td>
<td>&gt; 35 – 55</td>
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<tr>
<td>E</td>
<td>&gt; 55 – 80</td>
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<tr>
<td>F</td>
<td>&gt; 80</td>
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**Volume-to-Capacity > 1.0**

### References
