

DRAFT

Report

**Hill Farms Site
Redevelopment
Traffic Impact
Analysis**

**Wisconsin
Department of
Administration**

4

May 2007

1.01 INTRODUCTION

The Wisconsin Department of Administration (WDOA) is investigating redevelopment of the Hill Farms State Office Complex site in Madison, Wisconsin. The redevelopment will replace an approximately 400,000-square-foot office complex with approximately 1.6-million square feet (sq ft) of office space, 130,000 sq ft of retail space, and about 375 residential units. Construction of the development will occur in three phases with completion anticipated to occur by 2025. Figure 1.01-1 shows the proposed development location.

This Traffic Impact Analysis (TIA) is specifically for the General Development Plan of the Hill Farms site redevelopment proposal. This TIA acknowledges the anticipated changes in traffic from the Hilldale redevelopment phases I, II, and III and treats them as an existing condition in the 2015 and 2025 horizon years. This TIA also acknowledges internal circulation between the Hilldale Shopping Center and the Hill Farms site.

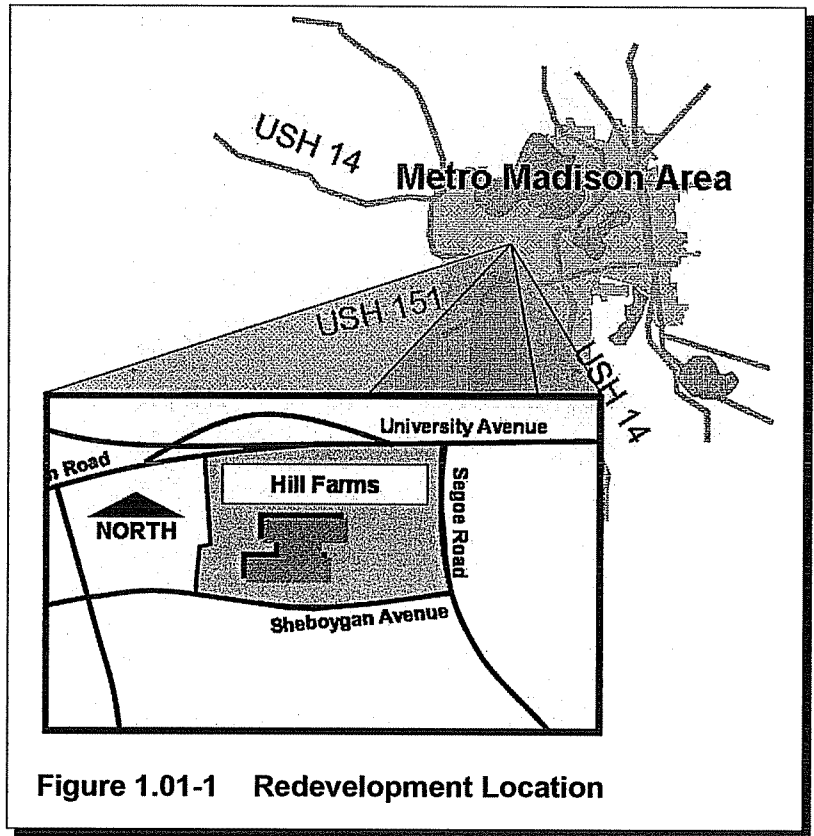


Figure 1.01-1 Redevelopment Location

1.02 EXECUTIVE SUMMARY

A. Transportation Demand Management

Transportation Demand Management (TDM) is a general term for strategies that result in more efficient use of transportation resources. TDM emphasizes the movement of people and goods, rather than motor vehicles, by giving priority to nonmotorized travel, ridesharing, and public transit.

A number of TDM strategies have already been implemented through the Hill Farms redevelopment site plan including:

- Mixed-use development that encourages linked trips.
- Higher density development that provides clustered activities and increases transit service efficiency.

- Specific accommodations designed to encourage bicycle, pedestrian, and transit modes of travel.

In addition to these TDM strategies already integrated with the Hill Farms redevelopment, we recommend consideration of the following:

- Encourage formation of a Transportation Management Association (TMA) among businesses to promote TDM strategies for employees. A TMA is a private, member-controlled organization that would promote TDM strategies around the Hill Farms Redevelopment for member businesses.
- Encourage employers to identify opportunities for telework and flextime policies. Telework allows employees to access their work from home, using computers to commute to work rather than a vehicle. Flextime policies allow employees to begin and end their work hours at off-peak times.
- Encourage employers to consider commuter financial incentives such as travel allowances, parking cash out, and transit and rideshare benefits.
- Provide abundant and well-distributed bicycle parking and consider making a portion of the parking covered to provide protection from weather. Also encourage employers to provide locker facilities to promote cycling to work.
- Create a well-connected sidewalk system that will encourage people to park once and walk to several destinations rather than drive and park at each destination.
- Encourage the development of a mass transit station along the existing rail corridor.

B. Road Users within the Project Area

The neighborhood surrounding the Hill Farms State Office Complex is diverse. Sixty percent of Madison's elderly population lives within three miles of the site. There is also a large amount of commercial, retail, office, medium-density multifamily, and low-density single-family land use in the area. The redevelopment of the Hill Farms State Office Complex proposes office, commercial, and residential land uses and continues the trend of mixed uses within the study area, particularly when the proposed changes to Hilldale Mall are considered. One of the advantages of mixed land use is that it can provide people with an alternative to driving when making a trip. Encouraging alternate modes such as walking, cycling, or using transit services can reduce long-term congestion and have a positive effect on a community's livability and overall health.

Sometimes improvements made for one mode of travel have a negative impact on another mode. For instance, adding turn lanes at an intersection may improve motor vehicle operations but it also increases the crossing distance for pedestrians. The study team will continue to work closely with City

of Madison Traffic Engineering staff to develop improvement recommendations to balance the needs of pedestrian, bicycle, and motor vehicle road users.

C. Recommended Improvements

1. Bicycle Accommodations

Figure 1.02-1 shows the recommended improvements to accommodate bicycle traffic.

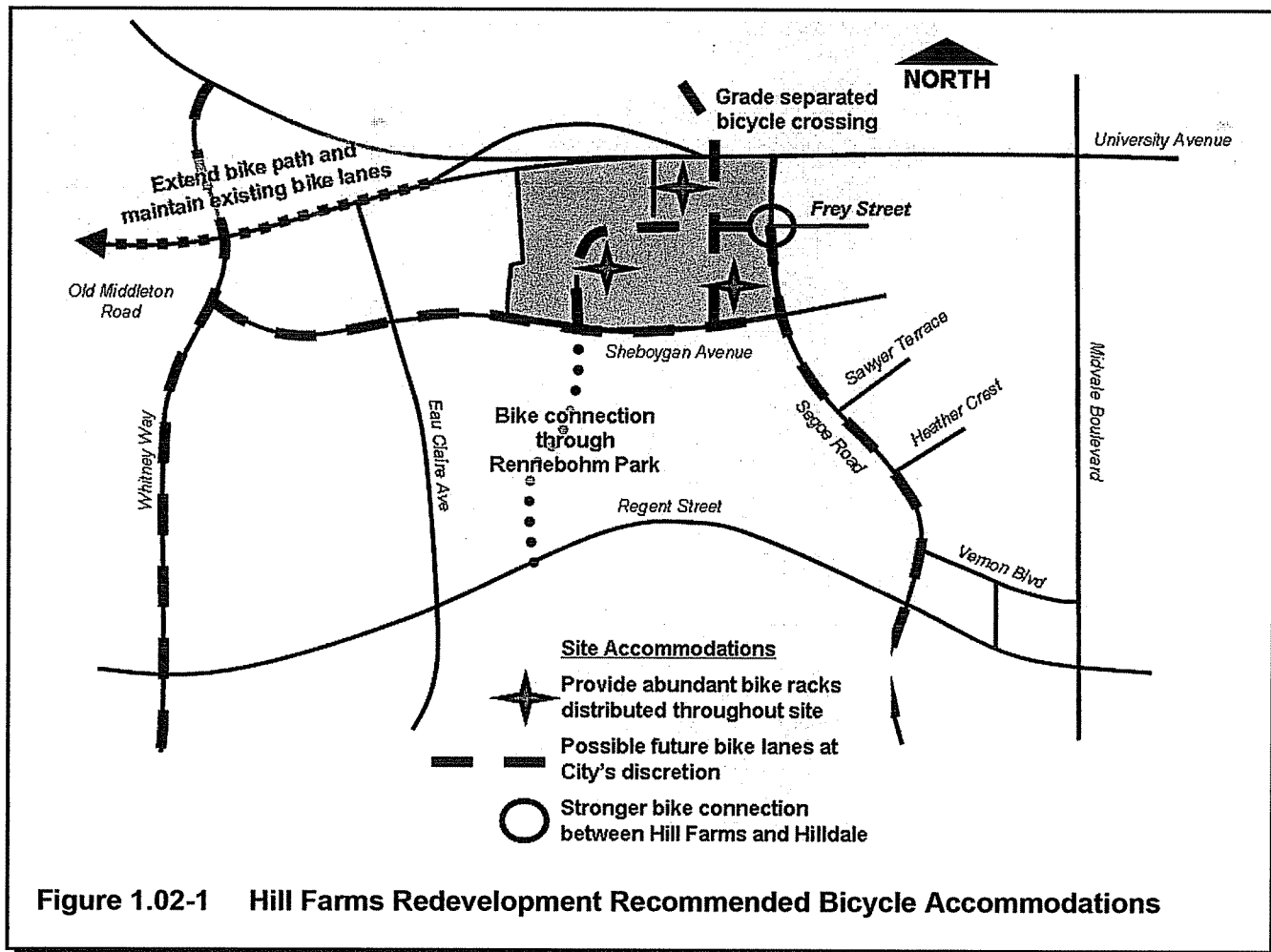


Figure 1.02-1 Hill Farms Redevelopment Recommended Bicycle Accommodations

Internal to the Hill Farms site, we recommend the following:

- Provide abundant bike racks distributed throughout the site.
- Provide bike lanes on internal site streets.

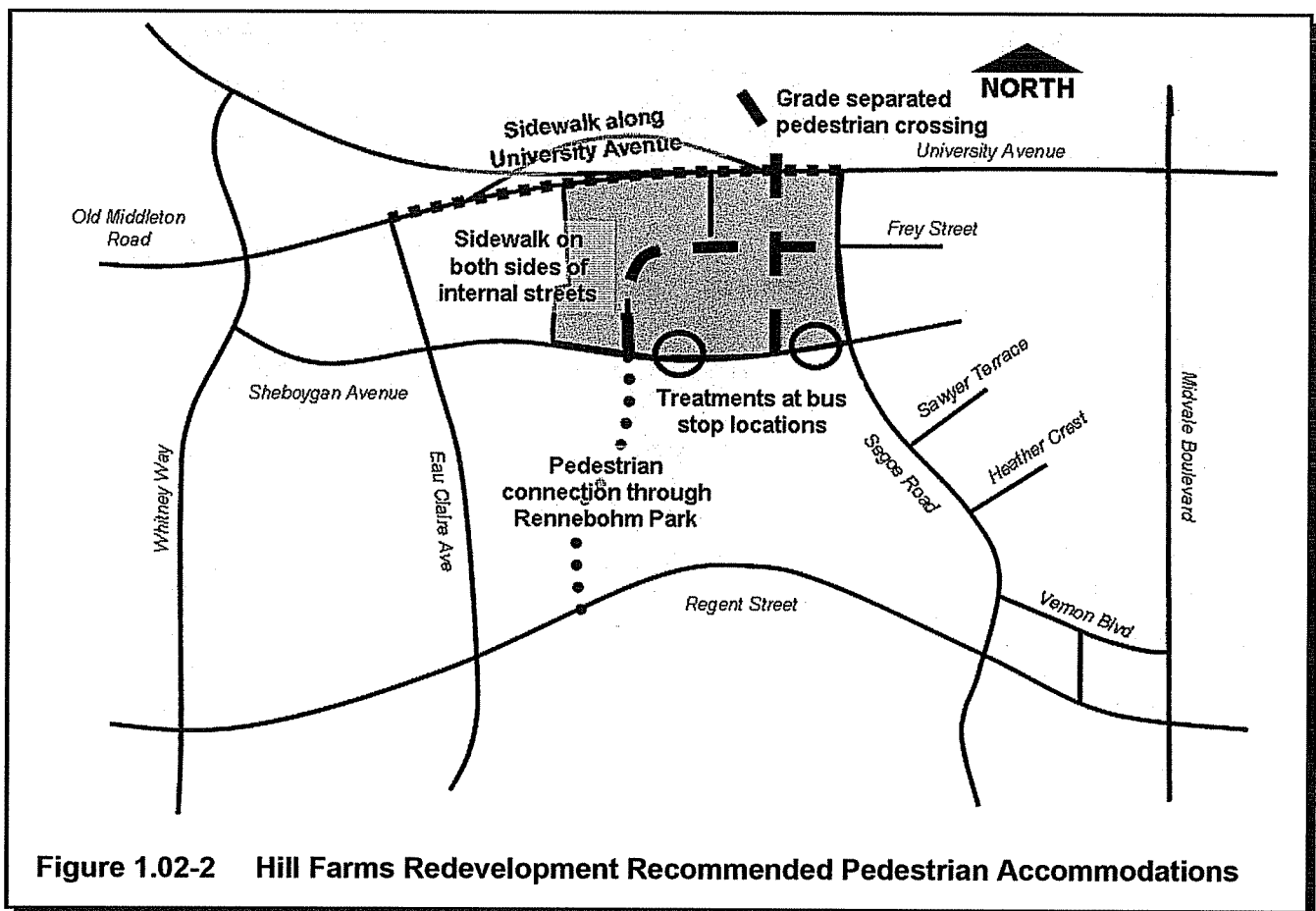
External to the Hill Farms site, we recommend the following:

- Provide a grade-separated bicycle crossing of University Avenue.

- Consider a bicycle connection through Rennebohm Park.
- Consider enhancing the existing crossing at the intersection of Segoe Road and Frey Street to make it more bicycle friendly.
- Consider bicycle lanes along Whitney Way, Sheboygan Avenue, and Segoe Road.
- Consider extending bicycle path along Old Middleton Road.
- Maintain existing bicycle lanes along Old Middleton Road.

2. Pedestrian Accommodations

Figure 1.02-2 shows the recommended improvements to accommodate pedestrian traffic.



Internal to the Hill Farms site, we recommend the following:

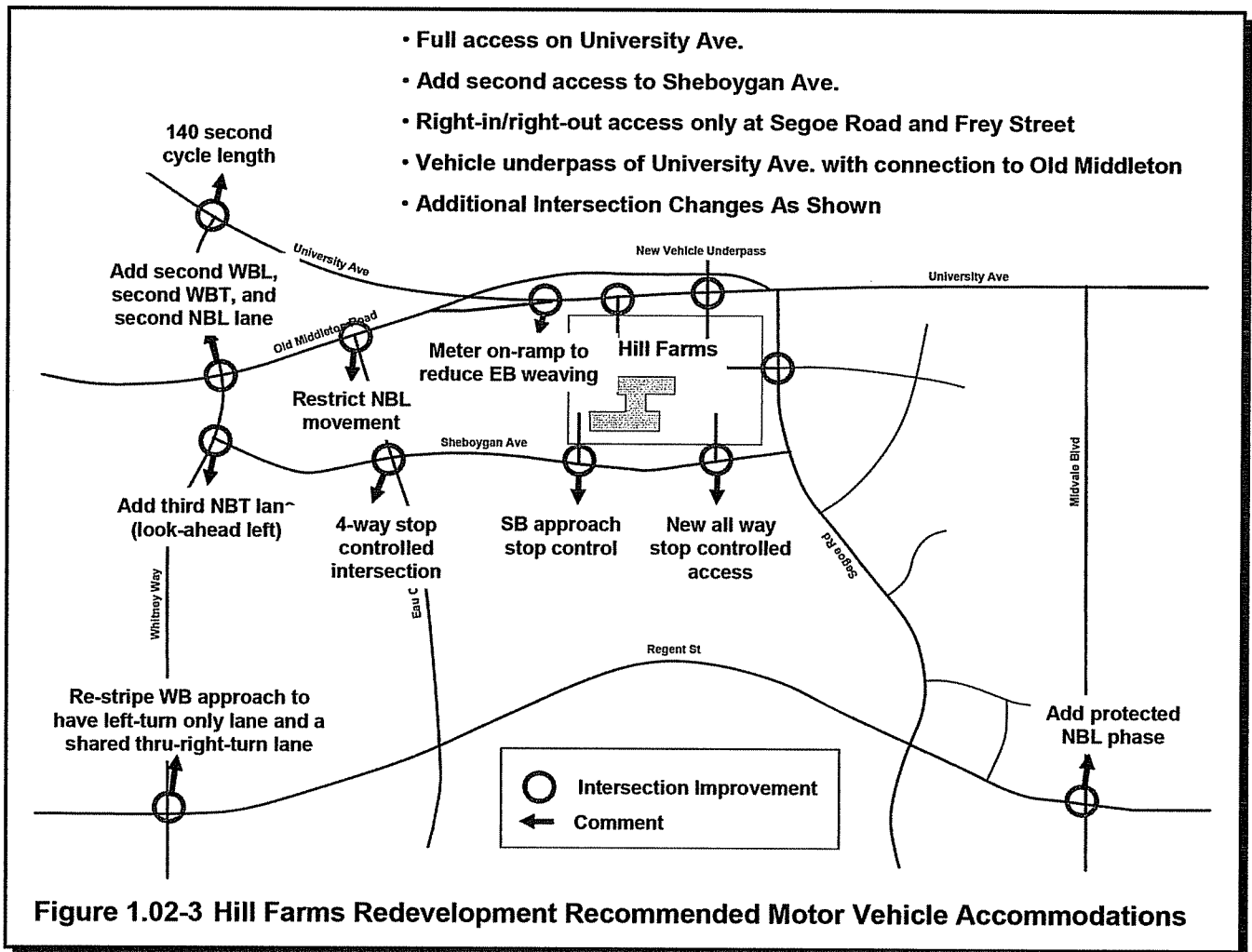
- Provide well-connected and direct sidewalk system on both sides of internal site streets with marked crosswalks at intersections.

External to the Hill Farms site, we recommend the following:

- Provide a grade-separated pedestrian crossing of University Avenue.
- Consider a pedestrian connection through Rennebohm Park.
- Consider pedestrian treatments at bus stop locations along Sheboygan Avenue.
- Consider sidewalk along the south side of University Avenue and the Old Middleton Road eastbound on-ramp.

3. Motor Vehicle Accommodations

To date, the study team has developed improvements to accommodate full build-out of the Hill Farms redevelopment with a horizon year of 2025. Subsequent submittals of this report will provide recommended improvement staging to coincide with the proposed redevelopment phasing. Figure 1.02-3 shows the recommended improvements to accommodate 2025 Total Traffic conditions.



Internal to the Hill Farms site, we recommend the following:

- Construct a vehicle underpass across University Avenue providing a direct connection between the Hill Farms site and Old Middleton Road.
- Construct a full access signalized intersection on University Avenue.
- Construct a second entrance on Sheboygan Avenue with all-way stop control.

External to the Hill Farms site, we recommend the following:

- Set the cycle length of the University Avenue and Whitney Way intersection to 140 seconds.
- Add a second northbound left-turn bay, a second westbound left-turn bay, and a second westbound through lane at the intersection of Old Middleton Road and Whitney Way. Adjust the signal timing and phasing.
- Add a third northbound through lane at the intersection of Sheboygan Avenue and Whitney Way to serve as a look-ahead left for northbound left-turning traffic at Old Middleton Road.
- Restripe the east approach of Regent Street and Whitney Way to provide an exclusive westbound left-turn bay and a shared westbound through/right-turn lane at the intersection.
- Install a ramp meter on the eastbound Old Middleton Road to eastbound University Avenue on-ramp and coordinate its timing to the signal at the intersection of University Avenue and Whitney Way to reduce weaving conflicts.
- Convert the intersection of Sheboygan Avenue and Eau Claire Avenue to all-way stop control.
- At the intersection of Old Middleton Road and Eau Claire Avenue, prohibit the northbound left-turn movement.
- At the intersection of Regent Street and Midvale Boulevard, add a protected northbound left-turn phase to the signal.

Redevelopment of the Hill Farms State Office Complex will result in the addition of about 2000 vehicle trips during the PM peak-hour. The redevelopment is anticipated to be completed by 2025.

For the purpose of this report, the background annual traffic growth rate of the adjacent streets has been assumed to be 1 percent (supported by historic traffic data). A 10 percent reduction has been applied to the forecasted trips generated by the development to account for alternative modes of travel. An additional 10 percent reduction has been applied to the forecasted trips generated by the development to account for linked trips.

Table 1.02-1 shows the results of traffic operations modeling at several study area intersections after the improvements recommended in this report are implemented.

Location	Intersection Operations	
	PM Peak Hour	
	Overall Intersection Ops	LOS F Movement(s)
University Avenue and Whitney Way	LOS D	
University Avenue and "B Street"	LOS C	
University Avenue and Segoe Road	LOS B	
University Avenue and Midvale Boulevard	LOS F	NBT, NBR SBR EBL WBL, WBR
Whitney Way and Old Middleton Road	LOS D	
Whitney Way and Sheboygan Avenue	LOS D	
Whitney Way and Regent Street	LOS B	
Eau Claire Avenue and Old Middleton Road	LOS C	
Eau Claire Avenue and Sheboygan Road	LOS B	
Sheboygan Road and "B Street"	LOS D	
Sheboygan Road and "C Street"	LOS D	
Regent Street and Midvale Boulevard	LOS C	

Note: NBL = Northbound Left NBT = Northbound Through NBR = Northbound Right
 SBL = Southbound Left SBT = Southbound Through SBR = Southbound Right
 EBL = Eastbound Left EBT = Eastbound Through EBR = Eastbound Right
 WBL = Westbound Left WBT = Westbound Through WBR = Westbound Right

Table 1.02-1 Total 2025 Traffic Intersection Operations on Improved Roadways from Synchro/SimTraffic

The traffic operations are generally acceptable after all improvements have been made. Several study intersections have movements that operate at LOS E, but each operates at LOS D overall or better with the exception of the intersection of University Avenue and Midvale Boulevard. This intersection operates at LOS F with 91 seconds of delay.

In 2025, the proposed Hill Farms Site redevelopment will contribute 299 vehicles or approximately 3.5 percent of the total traffic to the intersection of University Avenue and Midvale Boulevard during the PM peak hour. With or without the proposed redevelopment,

traffic growth will cause the intersection to operate poorly during the PM peak hour in the near future if no changes are made. Queues today often reach upstream intersections, exacerbating congestion during the heaviest traffic periods. Major improvements could be required to this intersection in the future to accommodate increasing traffic volumes. For the purposes of this study, it is assumed that the City will reconstruct the intersection to accommodate background traffic growth and that the following changes will be made:

- Physical changes eliminating split phasing.
- Changes to the lane configurations including:
 - Extending the northbound right-turn bay to 300 feet.
 - Changing the northbound shared through/left-turn lane to an exclusive left-turn lane.
 - Adding a second southbound through-lane.
- Signal retiming.

It is expected that increased congestion, whether because of nearby redevelopment such as the Hill Farms project or continued land use changes and population growth throughout the region, will require significant public investment in the transportation systems of the greater Madison area, including the University Avenue corridor. Social and environmental impacts as well as the construction costs associated with accommodating the future traffic solely through traditional vehicular capacity expansion may make implementation difficult.

With or without traditional vehicular capacity expansion, further promotion and expansion of alternate modes of travel are recommended. Sheboygan Avenue and University Avenue are major routes for the Madison Metro bus system. Since this area provides excellent access to a number of bus routes serving the surrounding areas, it will provide an ideal location for expansion of bus services if economically prudent. As traffic congestion increases, however, the need for improved transit service will become more apparent. Providing dedicated facilities, such as commuter express bus service or commuter rail service along existing rail corridors, will allow fast, direct, and reliable travel via transit providing a year-round alternative to driving that would likely see increased ridership as traffic congestion worsens.

In 2002 the Madison City Council endorsed the construction of a start-up commuter rail system in response to the Transport 2020 Alternatives Analysis that was completed for the Madison metropolitan area. The implementation of this rail system could increase accessibility to the site and decrease traffic congestion levels. Additional analysis is required to better understand the benefits versus cost of this or any large scale transit investment.

6.01 CONCLUSIONS

During the PM peak hour the Hill Farms redevelopment will create approximately 2,000 vehicle trips. The majority of these trips will be outbound vehicles leaving the offices that will make up a large portion of the redevelopment. Intersections on University Avenue, Old Middleton Road, Sheboygan Avenue, and Midvale Boulevard will require modifications to accommodate the redevelopment traffic.

Attention should be paid to efforts to increase the use of alternate modes of transportation for the Hill Farms development. Improvements are recommended to the surrounding area to make bicycling and walking an attractive alternative to using a car. Because of the large volume of bus service to the area, encouraging mass transit is also suggested. The employers of the redevelopment should be encouraged to use TDM practices and policies to try to limit the amount of vehicular traffic contributing to the street network.

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