Part III – Strategies and Recommendations/Access Management Plan

This part of the report provides short and long term strategies and recommendations for the US 14 corridor within the study area. The discussion is organized according to the following areas:

- Mainline improvement strategies
- Intersection-related strategies
- Long-term access management plan
- Other strategies for consideration (outside corridor preservation scope)

The focus of this portion of the report is to identify strategies and recommendations that, if implemented, would extend the useful life of the existing facility for as long as possible. In addition, the strategies are complementary: implementation of one does not preclude the implementation of the others, and once ultimately implemented would function as an integrated system.

The traffic analysis and forecasts reveal that portions of the corridor currently or are anticipated to exceed thresholds for capacity expansion between now and 2038. The strategies and recommendations were conceived with the assumption that capacity expansion or bypass options would not be implemented prior to 2038 due to competition with higher priority projects or funding limitations. The focus of this portion of the report is thus on corridor preservation.

At the time this report was completed, other agencies and groups were also focused on the future vision for the US 14 corridor. The tasks of these groups included identifying bypass corridors, enhancing transit to the outlying communities, and researching multi-modal considerations, among others.

Bypass corridors and capacity expansion are outside the scope of this study. At the time this study was initiated, WisDOT was not granted authority by the Wisconsin state legislature to study these types of improvements. Regardless of any possible enabling legislation, it is anticipated that even if WisDOT was tasked to consider a bypass or capacity expansion project for US 14, the effort would take several years to study, follow the necessary NEPA requirements, coordinate with other agencies, conduct preliminary and final design, acquire real estate, mitigate effects, and construct. It is likely that traffic volumes would reach problematic levels before such an undertaking could be completed, validating the need for this study and its strategies for preserving the long-term function of the existing corridor.

A separate sub-study was completed as part of this study with the objective of evaluating sites for a multimodal transit center in Middleton that would include a park-and-ride facility, bus transfer point, and commuter rail station. Bike and pedestrian connectivity and circulation would also be important elements for the facility. The findings of the sub-study were recorded in *Middleton Transit Center Site Options Report*, which can be found in appendix G, *Compiled Data.*

Though not specifically identified in this section of the report, it is assumed that multi-modal and transit considerations would be evaluated prior to implementation of any concept as part of WisDOT's ongoing efforts to reduce vehicle use where another mode

can be provided. Due to the unique characteristics of the corridor and the large number of constraints immediately adjacent to the existing right of way (i.e., Black Earth Creek, the freight rail corridor, conservation and recreation lands, etc.), the construction of a multi-use trail located adjacent to US 14 is likely to have the same implementation challenges as a capacity expansion project. The study supports providing direct connectivity between the communities and interconnectivity between existing trail systems whenever possible, but leaves the details of these efforts to the communities and other groups that have secured funding to take on these challenges.

I. Improvement Strategies

1.0 US 14 Mainline

The vast majority of the existing corridor is recommended to be maintained as a two-lane facility. Improvements are recommended only where the function and safety of the roadway are currently deficient or projected to decline in the near future. Recommended mainline improvements include new or extended medians, new protected left-turn lanes, and realignment strategies to improve curves. Protected left-turn lanes with medians are recommended at several unsignalized intersections, and are detailed in the next section.

Between the villages of Mazomanie and Black Earth, three strategies were developed to address safety issues. Each strategy is a package of detailed access recommendations at locations along this stretch of US 14. Strategy A maintains US 14 on its existing route and is considered the "no-build" option. Strategies B and C, illustrated in exhibit 14 on the following page, propose realignment of US 14 to improve safety and operations in relation to the existing curves, improve safety for bus and school traffic at existing school entrances, and provide greater separation between US 14 and the existing railroad and Black Earth Creek. Under strategies B and C, a segment of the current US 14 corridor would be converted to a local road, providing access to private properties in place. Strategy B proposes to eliminate the deficient curves near Wisconsin Heights High School and the intersection at WIS 78 and provide safer access to the high school via a redesigned intersection at Miller Farm Road. Strategy C proposes to use more of the existing alignment than strategy B but still improves the existing curves considerably and provides safer access to the high school.

One curve located at the Sunnyside Seed Farm, between Cleveland and Twin Valley roads, is recommended for improvement. It is proposed that the roadway be shifted slightly north, reducing the severity of the curve and improving sightlines at this location.

The Middleton area is the only part of the corridor that currently has a median dividing the lanes of travel. The existing median extends from just west of Pleasant View Road to the US 12 ramps. Extending the median to just west of Wayside Road is recommended in order to improve safety at Wayside Road, Schwartz Road, Capitol Court, and Pinehurst Drive.

TranSmart	Not to Scale	US 14 Corridor Study (East)	Long-Term Realignment Stratigies	Exhibit 14

2.0 Intersections

The US 14 corridor within the study boundaries contains seven signalized and 39 unsignalized intersections in both rural and urban settings. The existing and anticipated safety and operations conditions vary greatly depending on the context of the intersection. For purposes of analysis, signalized and unsignalized intersections were evaluated separately using Synchro SimTraffic software and a review of crash data. *Conceptual-level strategies were developed for the intersections to address deficiencies and to enhance operations. Further design would be needed prior to implementation.* If an intersection is not listed in the following sections, it currently operates adequately and is anticipated to operate adequately into the future. Tables 44 and 45 detail the levels of service (LOS), delay, and queue lengths for intersections in Cross Plains under existing conditions and with improvement alternatives.

Signalized Intersections

WIS 78 (east)/Mills Street

US 14 intersects WIS 78 (east)/Mills Street in the village of Black Earth, an urbanized segment of the highway. The intersection has a protected left-turn lane for westbound US 14 traffic turning south onto WIS 78. The protected left-turn lane is developed with a painted chevron that guides westbound through traffic to the outside. The approaches from northbound WIS 78 and eastbound US 14 each have two lanes, one for each movement.

Based on traffic analysis, the intersection currently functions well. However, two nearby driveways on US 14 — at the nursing home on the north side of US 14 and the parking lot in the southeast quadrant — are located within the intersection's functional area and may negatively affect intersection operations and safety. Access to these properties should be redirected to nearby local roads. Village of Black Earth officials were receptive to providing internal circulation among properties on the north side of US 14, with access routed to local streets. If future development patterns intensify or change, the intersection should be reanalyzed.

County P

County P is an important north–south major collector within the village of Cross Plains connecting residential areas and schools to US 14. In its greater regional context, County P connects US 18/151 just east of Mount Horeb to US 12 acting as a bypass of west Madison.

Because of its location in the center of the US 14 study area corridor, the operation and capacity of this intersection is important to maintaining regional mobility. Due to the many commercial properties surrounding it, the confluence of a US highway and a county highway, and the non-standard angle of approach on County P, this intersection experiences hazards, delays, and queues even during non-peak times.

Strategies identified for the intersection include a complete overhaul of the intersection to improve its capacity and operation. Two concepts were ultimately brought forward including an expanded signalized intersection and a roundabout as shown in exhibits 15 and 16. Both alternatives add additional lanes to the

intersection approaches and assume four lanes on US 14. Private driveways surrounding the intersection were not shown in detail on the exhibits and would need to be further evaluated for each concept. Pedestrian and bicycle accommodations would be provided if the intersection is reconstructed.