**2788-00-71**

**Waukesha Bypass**

**60% Bike/Ped Comments**

**8/6/15**

1. **General Comments – Curb Ramps:** Identify curb ramp types and show detectable warning field (DWF) placement on details and plan sets. Recommend including standard detail drawings (SDDs) for all curb ramp types that will be utilized throughout the project. Recommend including construction details for any specific curb ramps that will be modified significantly from the respective SDD.

Type 2/perpendicular ramps are preferred. Where a Type 2 ramp is not technically feasible, a parallel ramp is the next preferred type. Type 1 ramps should only be used as a last resort. Type 1 ramps force pedestrians to make a longer crossing and move out of their direction of travel. They also create safety issues for visually impaired pedestrians because Type 1 ramps direct them into the middle of the intersection. See FDM 11-46-10.2 and Section 5.3.3.2 of the Wisconsin Guide to Pedestrian Best Practices. See also *Planning and Design for Alterations* from the U.S. Access Board for information and examples on designing ramps in constrained areas (<http://www.access-board.gov/guidelines-and-standards/streets-sidewalks/public-rights-of-way/guidance-and-research/accessible-public-rights-of-way-planning-and-design-for-alterations>).

For existing ramps not already identified for replacement: Evaluate the condition of existing ramps – and replace as needed – per the conditions outlined in FDM 11-46-10.2: *“If the current ramp condition does not meet ADA slope requirements or the ramp area is severely cracked, or has cracks with a change in level that produces a lip greater than ¼ inch then replace the curb ramp and install a current detectable warning field.”*

1. **General Comment:** The lack of sheet numbers makes the review process more difficult and time-consuming. It makes it much more difficult to provide coherent review comments, especially for a plan set of this size.
2. **General Comment – Typical Finished Sections:** Provide a range whenever the width of a feature varies. For example, identify the range by which the separation between the shared use path and the roadway varies on the Station 147.18 to Station 221.50 typical finished section.
3. **Typical Finished Sections – Shared Use Path:** Recommend showing a minimum 3’ clear zone on each side of the shared use path in addition to the minimum 2’ graded shoulder. This clear zone provides adequate clearance from trees, abutments, poles and other obstructions. See Section 4.5 of the WI Bicycle Facility Design Handbook for details.

See Comment #3 regarding the need a range when features such as terraces vary in width. Note that the minimum separation between a shared use path and a roadway is 5’, unless a barrier is provided. See Section 4.3 of the WI Bike Handbook for details.

1. **General Comment – Storm Sewer:** Make sure that storm sewer inlets do not encroach upon curb ramps or crosswalks. For example, the inlets on the east side of the STH 59/CTH X intersection appear to be very close to the curb ramps and cut median refuges.
2. **General Comment – Traffic Control Plans:** Work with the DNR and Rebecca Klein to identify and coordinate plans to maintain access to the Glacial Drumlin Trail to the extent possible during construction.
3. **Plan Sheets:** See Comment #1 regarding the need to identify curb ramp types and show DWFs on plan sheets.
4. **Glacial Drumlin Trail/Railroad Crossing:** Label Glacial Drumlin Trail on plan sheets. Identify radii for curves in shared use path. See Section 4.7 of the WI Bike Manual for minimum radii based on various factors. The normal minimum radius for a 20mph design speed is 100’. Under special conditions, such as topography constraints, a minimum radius of 36’ may be used for a 12 mph design speed. Section 5.2.5 of the 2012 AASHTO Guide for the Development of Bicycle Facilities may also be referenced. The AASHTO guide does allow for a 27’ radius for a 12 mph design speed. Provide the best angle possible based on site constraints.

Any at-grade path crossings of the railroad should be as close to perpendicular as possible. See Section 2.7 of the WI Bike Manual for details on railroad crossings.

1. **Saylesville/Genesee Intersection:** Per FDM 11-46-10.1, the proposed sidewalk on the east side of Saylesville Rd and the north side of Genesee Rd will establish a legal crosswalk. If no crosswalk is provided on that leg of the intersection due to the long crossing width and/or alignment issues, then the crossing must be closed with a sign and barrier per FDM 11-46-10.1.1.
2. **Merrill Hills Rd/Glacial Drumlin Trail:** Curb ramps with DWFs are needed where the path intersects roadways. It is difficult to evaluate some of the path connections from the plan set. An exhibit that shows these connections would be helpful for review at some point.
3. **Cross Sections – Station 189.00:** As discussed during the meeting, evaluate drainage in areas such as this so that water does not collect on or adjacent to the path. Keep in mind winter maintenance needs. For example, avoid grading areas so that cleared snow would melt and potentially refreeze on a path or sidewalk.
4. **Cross Sections – Station 205.00 and other locations:** Cross slopes for sidewalks and shared use paths shall have a cross slope of 1.5% with a construction tolerance of ±0.5% (FDM 11-46-5.2.1). The minimum cross slope to achieve drainage is 1.0%. 2.0% is the maximum cross slope allowable per ADA guidelines. It would appear on this cross section that there is a potential for water to collect on or near the path. See also Section 4.12 of the WI Bike Manual and Section 5.2.6 of the 2012 AASHTO Bike Guide. These comments also apply to multiple other cross sections as well.
5. **Cross Sections – Station 243.00:** Identify cross slope for all sidewalk and path cross sections. The cross slope is missing here and at other locations.
6. **Cross Sections – Madison St Stations 53.00 and 53.50:** Sidewalk cross slopes here and at other locations are shown to exceed 2%. See Comment #12.
7. **Cross Sections – Glacial Drumlin Trail:** Cross sections are needed for new connections and any sections of the trail that will be reconstructed.