BICYCLE ACCESS

AE-6

1-2 POINTS

GOAL

Promote bicycling in communities by providing dedicated cycling facilities within the project right of way.

CREDIT REQUIREMENTS

Achieve Credit AE-3 Context Sensitive Solutions (CSS) and describe the need, purpose and appropriateness for planned, new, or upgraded bicycle facilities in the submitted document for Credit AE-3. The CSS document should clearly note whether bicycle facilities or improvements are required or have otherwise been requested by the public. In order to achieve this credit, a bicycle-only facility must be present within the ROW at the start of construction or result from construction of this project. Table AE-6.1 shows the points available for this credit.

Table AE-6.1: Available Points for Credit AE-6

Points	Requirements
1	Implement new (or improve existing) operations or technologies for bicycle facilities. This includes (but is not limited to) added signage or minor access improvements for bicycles, such as installing bicycle detectors in driving lanes or granting signal priority, adding bicycle-friendly stormwater drains, code-required dimension upgrades, resurfacing existing bicycle lanes, or adding new streetside bicycle storage facilities (lockers, racks, etc.).
2	Implement physical or constructed changes to the roadway structure, dimensions, or form that provide bicycle-only facilities with dedicated access within the ROW, such as a bicycle lane, or other bikeway. Lanes shared with motorized vehicles do not meet this requirement.

Details

For purposes of this credit, the term **bicycle** refers to a pedal-driven, human-powered vehicle with at least one seat for an operator. **Shared-use pathway** is defined as a multi-use pathway for all non motorized users including pedestrians and bicyclists. This may be located within a roadway Right-of-Way yet must be separated from the roadway and have wider widths than sidewalks.

Current facilities do not alone qualify for this credit without additional effort, such as upgrades, improvements or construction of new facilities. The attempt to provide pedestrian access must be deliberate and as a direct result of the project.

DOCUMENTATION

- Copy of the section that focuses on bicycle facilities in the Credit AE-3: Context Sensitive Solutions documentation. This section should address:

  a. Purpose and need for bicycle access on the roadway project determined through a project analysis or a Bicycle Master planning process.
  b. Regulatory or jurisdictional standards addressed, if any
  c. Results of public input on proposed bicycle facilities, if any
  d. Total cost associated with new or improved bicycle facilities
  e. Contract specifications and plans for proposed bicycle facilities

RELATED CREDITS

- ✓ AE-3 Context Sensitive Solutions
- ✓ AE-4 Traffic Emissions Reduction
- ✓ AE-5 Pedestrian Access
- ✓ AE-7 Transit & HOV Access

SUSTAINABILITY COMPONENTS

- ✓ Equity
- ✓ Economy

BENEFITS

- ✓ Reduces Fossil Fuel Use
- ✓ Reduces Air Emissions
- ✓ Reduces Greenhouse Gases
- ✓ Improves Access
- ✓ Improves Mobility
- ✓ Improves Human Health & Safety
- ✓ Improves Local Economies

APPROACHES & STRATEGIES

- Include elements such as bicycle lanes, separated bicycle paths or adjacent shared-use paths in designs when required by design standards, or community transportation plans, or by community request.
- Review local bicycle plans and maps of the existing bicycle networks to understand how the roadway will interact with the existing and planned, roadway transportation, and bicycle and pedestrian systems.. This may include shared-use pathways or park plans.
- Include local bicycle planners and advocates in advisory committees, project development or management teams, or decision-making committees as appropriate. Consult with planners to understand how the project can support the development of the bicycle network and to promote cycling in communities.
- Design roadway improvements and new roadways to accommodate existing, new and planned bicycle facilities.
- Rely on the assessment of local planners and advocates where no existing bicycle plan exists about how to integrate existing and future multimodal facilities into the project design.
- Consider how a new or redesigned roadway will impact the existing or planned bicycle networks and integrate design elements with other modal facilities (e.g. bicycle and transit) to mitigate overall impacts. This may mean providing connections or adaptability for future bicycle lanes, shared-use pathways, crossings or other facilities within the bicycle network.

Example: Dedicated Access on a Roadway

Below, Figure AE-6.1 shows how a dedicated access for bicycles should be marked according to the Manual for Uniform Traffic Control Devices (FHWA, 2009).

1 point **1 point** **1 point**

Figure AE-6.1: Examples of appropriate signage for dedicated bicycle access. (FHWA, 2009)

Figure AE-6.2 is an example of lane markings that promote dedicated bicycle access (FHWA, 2009). As shown in the figure, bicyclists are provided their own separate lane on a roadway for travel.

Figure AE-6.3 shows how access should be marked for bicycles that are utilizing the same space as motor vehicles; however while the sign above earns one point (if none previously existed) because this helps increases awareness of bicycle users on a route with motor vehicles (and theoretically increases safety), the lane itself by definition does not provided *dedicated* access for bicyclists.

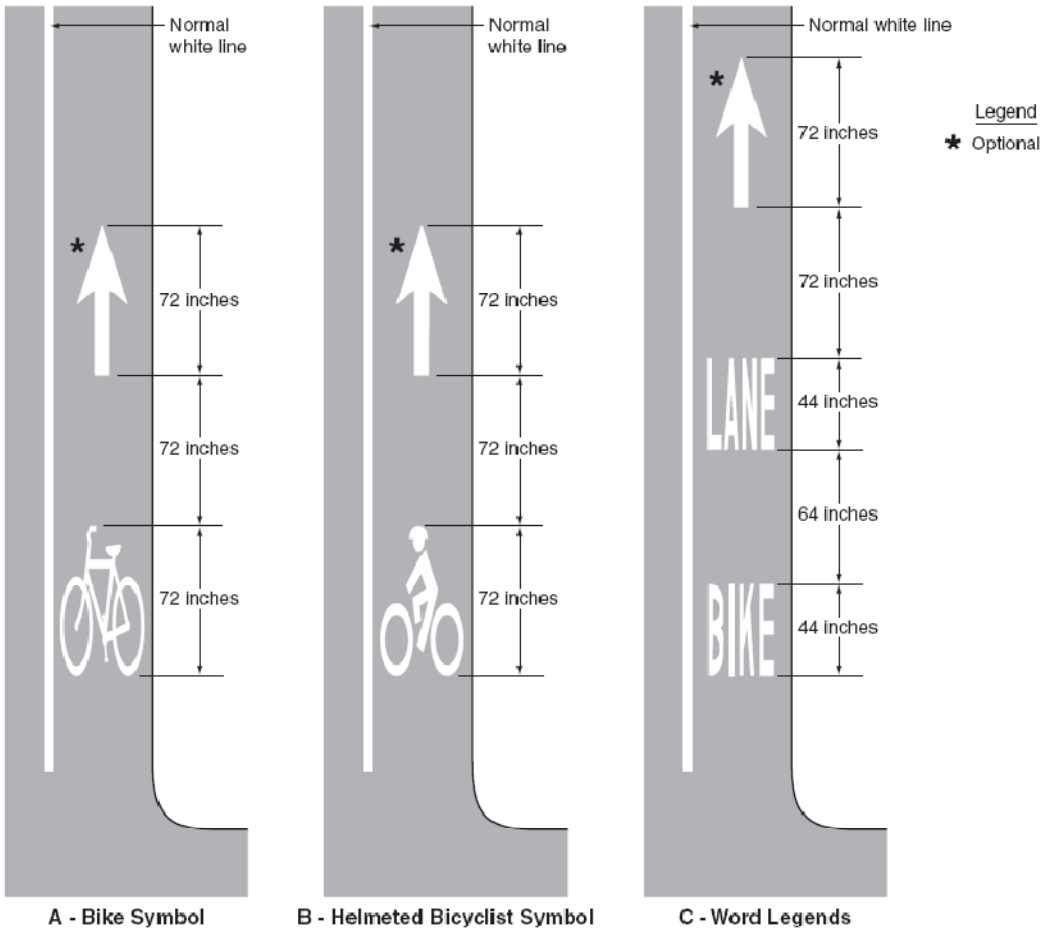

Figure AE-6.2: Examples of dedicated lanes for bicycle access. *2 points if new or improved to meet or exceed these minimum dimensions.* (FHWA, 2009)

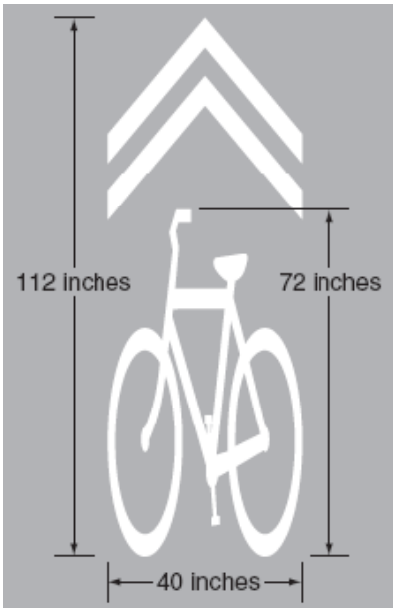

Figure AE-6.3: Access for bicycles in a motorized vehicle lane. *No points.* (FHWA, 2009)

Example: Case Study - Bridgeport Way University Place, Washington

Bridgeport Way was improved in 2005 to accommodate a more context sensitive roadway in University Place, Washington. In doing so, the city of University Place was able to significantly reduce accidents on the roadway, while providing an increased emphasis on pedestrian, bicycle and transit use in through the area. As shown in the figures below, there was a drastic change in the channelization of the roadway to provide adequate facilities to broaden the modes available for use through the corridor. The new design of the roadway proved to reduce traffic speeds which can encourage more bicycle use through the area (Context Sensitive Solutions, 2005). Simply by adding the facilities to the roadway, the city of University Place has encouraged the use of bicycle travel as well as pedestrian travel.

Figure AE-6.4: Bridgeport Way Before Construction. (Context Sensitive Solutions, 2005)

Figure AE-6.5 - Bridgeport Way After Construction (Context Sensitive Solutions, 2005)

POTENTIAL ISSUES

Encouraging cycling in areas where there was previously no cycling may result in increased bicycle crashes and collisions. Careful planning for bicycles and meeting engineering and safety standards can help to mitigate these instances.

RESEARCH

Increasing the bicycle facilities along a given corridor can have a beneficial result on the overall sustainability of a given roadway. The benefits of including bicycle facilities can include making a more equitable roadway, decreasing the amount of current traffic on the roadway, and also provide health benefits to users of the facilities. Bicycles and pedestrians are often grouped together because they are easily distinguished from motorized modes that use a right-of-way. Also, both walking and bicycling are considered "active transport" (Woodcock et al., 2009) modes. Therefore, much of supporting research for this credit and Credit AE-5 Pedestrian Access overlap, and will not be repeated here for brevity. Improved mobility and access, environmental and economic benefits, and health improvements of these active modes are addressed in Credit AE-5.

Bicycle Safety

The safety considerations for bicyclists are typically involved in driving on the same surface as motor vehicles. Several safety measures are available to increases the safety of both motor vehicles and bicyclists. The American Association of State Highway and Transportation Officials recommends that bike lanes have dimensions of at least four feet in width and are located between the lane of travel and sidewalk or parking lane. This reduces the chance of accidents between bicycles and vehicles (AASHTO, 1999).

However, Ewing and Dumbaugh (2009) show that the best method to increase safety for bicycles and pedestrians is by increasing awareness through notification or signage along a right-of-way. They also show that increases in overall numbers of bicyclists (and pedestrians) offer "safety in numbers" because of heightened awareness. Furthermore, dedicated access for bicycles provides comfortable travel without lane sharing as well as improved safety. Reynolds et al. (2009) has shown dedicated access can reduce bicycle-vehicle accidents by up to 50 percent compared to shared-use lanes.

GLOSSARY

AASHTO	American Association of State Highway and Transportation Officials
Active transport	Walking or biking (human-powered transport)
Bicycle	A pedal-driven, human-powered vehicle with at least one seat for an operator
FHWA	Federal Highway Administration

REFERENCES

American Association of State Highway and Transportation Officials (AASHTO). (1999). *Guide for the development of bicycle facilities*. Washington, D.C.: American Association of State Highway and Transportation Officials.

Context Sensitive Solutions. (2005). Bridgeport Way – University Place, Washington. Available at http://www.contextsensitivesolutions.org/content/case_studies/kentucky_bridgeport/

Federal Highway Administration (FHWA). (2009). *Manual for Uniform Traffic Control Devices (MUTCD)*. Washington, DC: FHWA. Available at http://mutcd.fhwa.dot.gov/htm/2009/html_index.htm

Ewing, R., & Dumbaugh, E. (2009). The Built Environment and Traffic Safety: A Review of Empirical Evidence. *Journal of Planning Literature*, *23*(4), 347-367. doi: 10.1177/0885412209335553.

Reynolds, C.C., Harris, M.A., Teschke, K., Cripton, P.A., & Winters, M. (2009). The impact of transportation infrastructure on bicycling injuries and crashes: a review of the literature. *Environmental Health: a Global Access Science Source.* 8.

Woodcock, J., Edwards, P., Tonne, C., Armstrong, B. G., Ashiru, O., Banister, D., et al. (2009). Public health benefits of strategies to reduce greenhouse-gas emissions: urban land transport. *Lancet*. 374(9705), 1930-1943.