



6. COMPLETE STREETS POLICY



The role of the Complete Streets Policy

The primary recommendation of this plan is for a statewide Complete Streets policy that applies to all Iowa DOT projects, including new construction, reconstruction, and 3R projects (resurfacing, restoration, or rehabilitation). From an infrastructure perspective, this is the most important recommendation of this plan. The Complete Streets Policy was developed based on the National Complete Streets Coalition's guidelines for state legislation. However, this policy is written as an Iowa DOT policy (rather than state legislation).

The policy is purposefully lacking in specifics (e.g., the criteria used to determine what *type* of accommodation must be provided) in order to maintain flexibility and avoid incompatibilities. Guidance for selecting appropriate facility types is provided in Chapter 5.

The specifics of Complete Streets design and policy implementation (which are recommended by this plan) should reside in modifications to the Iowa DOT's Design Manual and Bridge Design Manual. Periodic reports (see section 3.5 of the policy) should reflect whether the Iowa DOT and the state as a whole are adequately following this policy.

Section 4 of the policy outlines its effective date for Iowa DOT projects. Although it is non-binding to other transportation agencies (MPOs, RPAs, counties, and municipalities), these agencies are encouraged to adopt similar policies, as some have already.

6.1 Complete Streets Policy language

Section 1 – Complete Streets

- 1.1 Motor vehicle, public transportation, bicycle, and pedestrian modes are each integral to the transportation system, and the Iowa Department of Transportation (DOT) shall view all transportation improvements as opportunities to improve safety, access, and mobility for all transportation users.
- 1.2 Accommodations for all users shall be considered in the planning, design, construction, and reconstruction of any primary highway, and should be considered for any secondary or local transportation project receiving federal or state funding. New accommodations shall be considered in Iowa DOT 3R projects (Resurfacing, Restoration, or Rehabilitation) whereby bicycling, pedestrian, and transit provisions can be added within the scope of the project. This shall include the reduction of barriers by including accommodations across, as well as along, transportation facilities. The Iowa DOT shall create a safe, comprehensive, integrated, and connected network to accommodate all users in a manner that is suitable and sensitive to the rural, suburban, or urban context.
- 1.3 The Iowa DOT shall (and any regional or local entity using state or federal funds to plan, design, or construct a transportation facility should) consult the latest versions of the following design guidelines and standards, which clarify and expand upon the Iowa DOT's design manuals and specifications:
 - a. *A Policy on Geometric Design of Highways and Streets* (American Association of State Highway and Transportation Officials);
 - b. *Guide for the Development of Bicycle Facilities* (American Association of State Highway and Transportation Officials);
 - c. *Guide for the Planning, Design, and Operation of Pedestrian Facilities* (American Association of State Highway and Transportation Officials); and
 - d. *Public Rights-of-Way Accessibility Guidelines* (United States Access Board).

Finally, the Iowa DOT should utilize the latest version of the following guidelines, which apply to unique situations and where accommodation treatments are needed beyond typical applications:

- e. *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach: An ITE Recommended Practice* (Institute of Transportation Engineers); and
 - f. *Urban Bikeway Design Guide* (National Association of City Transportation Officials).
- 1.4 The Iowa DOT shall support the use of federal and state funds by Metropolitan Planning Organizations, Regional Planning Affiliations, counties, and cities for projects that follow a Complete Streets process by encouraging the examination of project prioritization and selection processes. The Iowa DOT should also examine applicable federal and state funding programs to ensure that projects that follow a Complete Streets process are fairly considered.
- 1.5 The Iowa DOT shall encourage regional and local entities to follow a Complete Streets policy for all transportation projects by encouraging possible modifications to SUDAS to reflect the Complete Streets process. The Iowa DOT may also provide assistance to and coordinate with regional and local entities in developing and implementing complementary Complete Streets policies. In the development of projects within city boundaries, the Iowa DOT shall offer assistance, as appropriate, in multimodal transportation planning and design.
- 1.6 The Iowa DOT shall modify its procedures, documents, training systems, and performance measures to ensure that the needs of all users of the primary highway system are included in all phases of all projects not excepted from the provisions of this policy by Section 2. The Iowa DOT shall create an implementation plan, including a schedule and stakeholder outreach plan, in consultation with interested stakeholders.
- 1.7 For bicycle and pedestrian accommodations within Primary Highway right-of-way, the Iowa DOT shall require the local sponsoring entity to complete form 632007, Application for Use of Highway Right of Way for Multipurpose Trail Operation. The permit

shall require the local entity to maintain the facility as appropriate for bicycle and pedestrian accommodations, including but not limited to maintenance and repair of the surface, maintenance of vertical and lateral clearances, snow removal, and debris removal. The permit shall require the local entity to be responsible for the facility meeting applicable municipal, county, state, and federal requirements, and addressing any necessary future modifications after initial construction. If applicable, the cost of constructing accommodations, when not an integral part of an Iowa DOT project or when found to be excessively disproportionate as determined by Sections 2.3 and 2.4, shall not be an Iowa DOT cost.





Section 2 – Exceptions

- 2.1 It is a goal of the Iowa DOT to improve bicycle and pedestrian safety, access, and mobility as part of all primary highway projects. However, there may be situations in which it is desirable to seek an exception in order to reduce the project cost impact of providing bicycle and pedestrian accommodations. Other than projects excepted from the provisions of this policy by Sections 2.2 and 2.3, all projects that are granted exceptions should still consider incremental bicycle and pedestrian improvements.
- 2.2 The provision of facilities pursuant to Section 1 shall not be required if:
- Bicycle or pedestrian use is prohibited on the transportation facility;
 - The transportation facility has a posted minimum speed limit;
 - The provision of the accommodations would be unsafe;
 - ROW acquisition would be necessary for the purpose of providing the accommodations;
 - The project scope is limited to maintenance activity; or
 - The provision of the accommodations is limited by the Code of Iowa or Iowa DOT Administrative Rules.
- 2.3 For roadway projects within incorporated areas, the provision of facilities pursuant to section 1 shall not be required if the Director of the Iowa Department of Transportation (or appointed designee) determines, with respect to a primary highway, that:
- The additional cost of new bicycle and pedestrian accommodations would be excessively disproportionate to the need or probable use. Excessively disproportionate is defined as exceeding twenty percent of the cost of the larger transportation project. In cases where the additional cost is

considered excessively disproportionate, the project should still consider accommodations for bicycles and pedestrians, but the scope of accommodations may be reduced to the point that the additional cost does not exceed twenty percent of the total project budget; or

- There is a demonstrated absence of future need as determined by factors including current and future land use, current and projected user volumes, population density, and crash data. For design and construction, the time horizon considered for future need shall be defined as one-half of the operational lifespan of the transportation facility for pedestrian accommodations and the entire operational lifespan for bicycle accommodations. For example, if a road in the metro area periphery is being reconstructed with a 20-year lifespan, future development plans should be consulted and if the area will be developed within 10 years, pedestrian and bicycle accommodations should be provided. If it will be developed between 10 and 20 years, only bicycle accommodations should be provided. For planning and right-of-way acquisition, the time horizon considered for future need shall be defined as twice the operational lifespan of the transportation facility.

2.4 For rural projects, the provision of facilities pursuant to section 1 shall not be required if the Director of the Iowa Department of Transportation (or appointed designee) determines, with respect to a primary highway, that the additional cost of new bicycle and pedestrian accommodations would be excessively disproportionate to the need or probable use as determined by section (a) and (b) below.

- Excessively disproportionate is defined as exceeding a certain percentage of the cost of the larger transportation project. The cost exception threshold varies and is determined based on the current Bicycle Compatibility Rating (identified in the Bicycle and Pedestrian Long-Range Plan and maintained by the Office of Systems Planning) and the number of Need Tests that are

passed. The matrix below specifies the cost exception threshold to be used for rural projects.

Current Condition Bicycle Compatibility Rating	Need Tests Passed			
	3 or more	2 out of 5	1 out of 5	0 out of 5
Poor	20%	15%	10%	0%
Moderate	15%	10%	5%	0%
Good	10%	5%	3%	0%

The following need tests may be electively performed in order to attempt to achieve a lower cost exception threshold for a project. If these tests are not performed, the cost exception threshold defaults to twenty percent.

1. A bikeway along the project is included in a bicycle or pedestrian plan.
2. The project creates a connection between two or more existing, programmed, or planned bikeways or trails.
3. The project is near a city (within 1 mile of corporate limits for cities less than 5,000 population, within 2 miles of corporate limits for cities with 5,000 to 15,000 population, and within 3 miles of corporate limits for cities over 15,000 population).
4. There are employment centers, parks, schools, residential areas, or other destinations within 0.5 miles of the project.
5. The project is part of an official or recognized bike route used regularly by a group of bicyclists, or there is probability that 25 or more bicyclists per day can be expected if adequate accommodations were provided (based on the American Community Survey statewide mode share for bicycling and the average daily traffic for the project).

- b. In cases where the additional cost is considered excessively disproportionate, the project should still consider accommodations for bicycles and pedestrians, but the scope of accommodations may be reduced to the point that the additional cost does not exceed the cost exception threshold. Reduced scope accommodations must still meet current standards unless a design exception is approved.

- 2.5 The Iowa DOT shall consult local and regional plans, local officials, and the general public, as appropriate, in both the provision of facilities and assessing exceptions.
- 2.6 Exceptions to this policy shall be documented in writing with supporting data that indicates the reason for the exception and shall be shared with the Advisory Committee as established in section 3.

Section 3 – Complete Streets Advisory Committee

- 3.1 There shall be established a Complete Streets Advisory Committee, staffed by the Iowa DOT, for the following purposes:
 - a. Providing education and advice to the Iowa DOT, local engineers and planners, consulting engineers, interest groups, and the general public;
 - b. Making recommendations to the Director of the Iowa DOT (or appointed designee) on policies and procedures, assisting in updating design guidance, providing educational opportunities to employees, and establishing new measures to track success in multimodal planning and design; and
 - c. Preparing periodic reports as outlined in section 3.5.



3.2 The Offices of Bridges and Structures, Design, Local Systems, Location and Environment, Systems Planning, Traffic and Safety, as well as Districts shall designate one or more staff members to serve on the Complete Streets Advisory Committee.

3.3 Non-Iowa DOT members of the Complete Streets Advisory Committee shall be appointed by the Director of the Iowa DOT (or appointed designee) and shall include members representing each of the following:

- a. The Iowa Department of Public Health;
- b. Practicing licensed engineers with expertise in multimodal transportation;
- c. Knowledgeable, community planners with experience in complete streets (Iowa chapter of the American Planning Association, Association of Pedestrian and Bicycle Professionals, etc.);
- d. The Iowa County Engineers Association;
- e. The American Public Works Association – Iowa Chapter;
- f. A Metropolitan Planning Organization (MPO);
- g. A Regional Planning Affiliation (RPA);
- h. American Association of Retired Persons;
- i. Organizations interested in the promotion of bicycling;
- j. Organizations interested in the promotion of walking;
- k. Organizations representing persons with disabilities;
- l. Automobile and/or trucking transport organizations; and
- m. Other interested parties as determined by the Iowa DOT.

3.4 *[Set terms for Advisory Board, such as term limits, a meeting schedule, and the appointment of the chairperson.]*

3.5 Periodic public reports may include the following information:

- a. A summary of specific actions taken by the Iowa DOT in the preceding year to improve the safety, access, and mobility of roadways for all users as defined in section 1.2;
- b. Any identified changes to the Complete Streets policy to facilitate implementation;
- c. Modifications made to or recommended for protocols, practices, guidance, standards, or other requirements to facilitate Complete Streets implementation;
- d. The status of the development of multimodal performance measures;
- e. Information collected from agencies on the percentage of trips made by foot, bicycle, and public transportation, together with the target level of the use of these modes;
- f. Crash statistics by mode, age, road type, location, and other relevant factors; and
- g. Other, related information as requested.

Section 4 – Effective date

4.1 This policy shall take effect on December 11, 2018, meaning that section 1 shall apply to any transportation project for which a final concept has been completed on or after January 1, 2020.

4.2 The Iowa DOT shall review the fiscal impact of this policy upon the completion of one full programming and project letting cycle following the effective date identified in section 4.1, and biennially thereafter.

6.2 Additional guidance

The following additional guidance is provided to add clarity to the intent and implementation of the Complete Streets Policy.

Intent to improve conditions for biking

The intent of the Complete Streets Policy is to improve conditions for bicycling and walking in every project, even if the project has a lower cost exception threshold. On many projects this means improving the Bicycle Compatibility Rating from “poor” or “moderate” to “moderate” or “good.” On roads that already have a Bicycle Compatibility Rating of “good” prior to construction and with suitable pedestrian accommodations, the level of quality for bicycle and pedestrian accommodations should be maintained or improved.

For example, a two-lane roadway with 6-foot wide paved shoulders might be rated “good” for bicycling. But if the roadway is widened to four-lane and only 4-foot wide paved shoulders are provided due to right-of-way constraints, the rating may drop to “poor” or “moderate.” Such an outcome should be avoided if possible.



In other words, the intent is that post-construction conditions be at least as good as they were before the project began and that roadway projects do not result in a reduction of quality or comfort for bicyclists or pedestrians. To achieve this objective, the selection of the bicycle facility type must be made in consideration of traffic volumes and speeds. See Chapter 4 for facility selection guidance.

Section 1.7 (maintenance agreements)

This section of the Complete Streets Policy requires that local entities to agree to maintain bicycle and pedestrian accommodations within Primary Highway right-of-way. This requirement is intended to apply to multi-use trails and sidewalks built alongside roadways. It is not intended to apply to bikeways constructed as part of the roadway, such as paved shoulders or bike lanes. On-road bikeways on Primary Highways should be designed, funded, constructed, and maintained as part of the roadway by Iowa DOT. Some exceptions to this practice may occur, however, if local entities desire a higher level of maintenance than can reasonably be provided by Iowa DOT. An example is the portion of Iowa 1 near Solon where local entities desired a very high level of shoulder sweeping and agreed to take on this maintenance activity.

Section 2.4 (rural project cost exception thresholds)

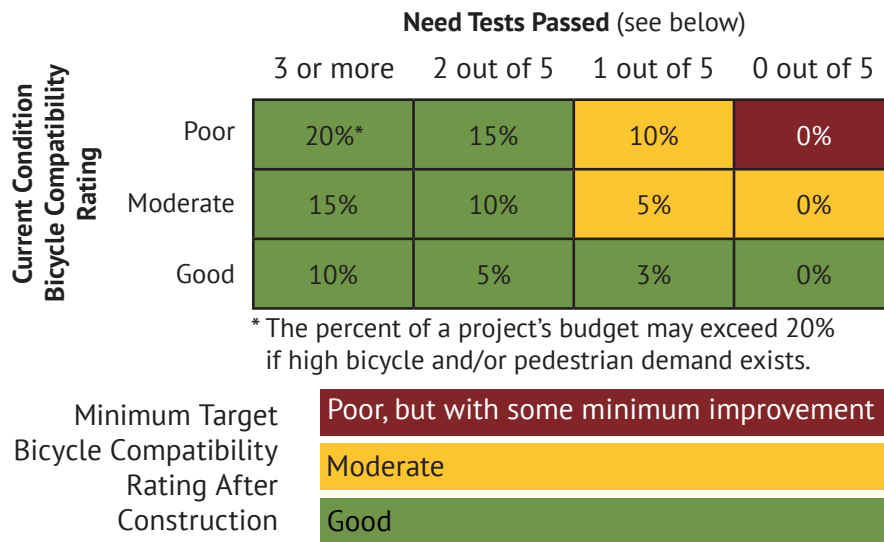
The policy’s matrix (recreated in Figure 6.1) provides a variable cost exception threshold based on existing conditions and the current and future need for accommodations. This matrix only applies to rural projects. By nature, projects within cities will usually be in areas with moderate to high levels of bicycle and pedestrian latent demand. Furthermore, since pedestrian activity in areas outside of cities is far less likely than is bicycle activity, this matrix focuses on conditions related to bicyclist demand.

For roadways with good or moderate current conditions for bicycling, it is important that conditions be maintained or improved when a project is designed and constructed, which is the reason the matrix



includes cost exception thresholds in the bottom row. Likewise, roadways on which there is a demonstrated absence of future need should not be required to allocate as much of the project budget toward accommodations. However, it is important that some consideration be given on every project (even if no need tests are passed), such as providing regulatory, warning, or wayfinding signage.¹ Since wider pavement generally equates to better conditions for bicycling, it is also desirable to widen the pavement (total width of roadway and paved shoulders) as much as possible within the cost exception threshold, even if it is not possible to provide 4 to 6 feet of effective paved shoulder width.

Figure 6.1: Annotated Complete Streets Policy cost exception threshold matrix



While it is ideal to improve conditions to a “good” Bicycle Compatibility Rating, a lower level of accommodation can be accepted if few of the need tests are passed. For example, if a roadway is currently rated “poor” for bicycling and only one out of the five need tests are passed, then only up to 10 percent of the project cost would need to be spent on accommodations to ideally improve the rating to “moderate” (although a rating of “good” would still be desired if achievable for 10 percent of the project budget).

Other than projects that are entirely exempt from the Complete Streets Policy, the only situation in which no portion of the budget should be allocated to accommodations is if none of the need tests are passed

Need tests

Bicycle and pedestrian accommodations should be included in a project by default. In other words, providing accommodations should not require justification. Rather, in order to exclude accommodations in accordance with the exceptions clause of the Complete Streets Policy, the absence of future need should be demonstrated during the project scoping process.

The above matrix necessitates some quantifiable “tests” to determine whether the absence of need can be demonstrated. Conducting these tests is optional and should only be undertaken if the design engineer or Project Management Team believes a certain project will have an absence of need. These tests are stated in the above Complete Streets Policy (section 2.4).

¹ The Facility Selection Matrix and Bicycle Facilities and Treatments sections of Chapter 5 give guidance in this area; Design Manual section 12B-01 defines bicycle route, shared lane, and shared lane marking.

6.3 System-wide cost impact analysis

The purpose of the system-wide cost impact analysis is to approximate the fiscal impact of the Complete Streets Policy. As the policy only applies to Iowa DOT projects, this cost estimate only relates to the state highway system. The cost impact of the policy has been analyzed for two programs:

- Resurfacing, Restoration, or Rehabilitation (3R) Program
 - Considering rural accommodations in the form of paved shoulders
- 5-Year Highway Program (reconstruction/new construction of state highways)
 - Considering rural accommodations in the form of paved shoulders
 - Considering urban accommodations in the form of bike lanes, sidepaths, and sidewalks

3R Program cost impact analysis

Each year, the Iowa DOT allocates a portion of its budget toward 3R projects². In recent years, the statewide 3R budget has averaged approximately \$150 million for projects on approximately 325 miles of highway. The Complete Streets Policy requires that bicycle accommodations be considered and included as part of 3R projects if practical given the scope of each project. Pedestrian accommodations were not considered during this analysis because it is assumed that most 3R projects would be given exceptions from providing pedestrian accommodations due to low pedestrian demand and/or

² The 3R Program includes urban projects, as well as rural projects. Urban accommodations typically include bike lanes and sidewalks (rather than paved shoulders). However, data delineating the percentage of urban versus rural 3R projects was not available for this analysis. Since it is commonly understood that most 3R project miles are rural, it was assumed that all 3R project miles are rural for the purposes of this analysis. The cost of accommodating bicyclists and pedestrians will be greater for urban projects than for rural projects; considering the low cost per mile of 3R projects, many urban 3R projects will likely be excepted by the Complete Streets Policy.

the small size of the project budget. However, this omission does not remove the requirement in the Complete Streets Policy to provide pedestrian accommodations where warranted and when they can be provided for less than 20 percent of the project budget.

Need

Not all state highways require additional pavement to adequately accommodate bicyclists. The need for paved shoulders to accommodate bicyclists is dependent on the pavement width and traffic volume (ADT) of any given roadway.

- 51 percent of Iowa’s non-Interstate state highway system is rated “good” for bicycle compatibility (see Chapter 4) and does not need additional paved shoulder width to effectively accommodate bicyclists.
- 7 percent is rated “moderate” or “poor” but has traffic volumes of 5,000 ADT or greater and based on the Iowa DOT Design Manual standards should therefore have 6-foot wide paved shoulders added when roadwork is performed (providing basic accommodation for bicyclists).
- 34 percent is rated “moderate” or “poor,” has traffic volumes below 5,000 ADT, and could be improved by constructing additional pavement width beyond the current Iowa DOT Design Manual preferred paved shoulder width values.
- 8 percent is rated “poor” and has traffic volumes too high for paved shoulders to improve the rating for bicycle compatibility.

It can therefore be assumed that 34 percent of 3R project miles could be required to consider additional paved shoulder width for bicycle accommodation, per the Complete Streets Policy. In most cases, the bicycle compatibility of a highway can be improved considerably by constructing 1 to 2 additional feet of



paved shoulder beyond the Iowa DOT's standard paved shoulder widths.

Cost per mile

Based on cost data retrieved from projects completed during the past two to three years, it costs approximately \$25,000 per mile to add 1 additional foot of paved shoulder width as part of a 3R project. Historically, the majority of 3R projects in Iowa include shoulder work, which is understood as typically adding paved shoulders of widths commensurate with the traffic volume of the roadway.³ Therefore, the marginal cost for accommodating bicyclists on rural roads as part of 3R projects is typically \$50,000 per mile (the cost of 2 feet of HMA on each side of the road). This assumes adequate granular or earthen shoulder width exists or would otherwise be provided as part of each 3R project, which is largely in keeping with Iowa DOT practice.

³ The Iowa DOT Design Manual states preferred paved shoulder widths. For rural two-lane highways, the preferred widths are generally 2 feet for roads with fewer than 3,000 ADT (unless part of the National Highway System, in which case the preferred width is 4 feet), 4 feet for roads with between 3,000 and 5,000 ADT, and 6 feet for roads with more than 5,000 ADT. Furthermore, the preferred paved shoulder width is 10 feet for roads that are approaching cities and metro areas and for portions of any road that have curves with superelevation rates of 7 percent or higher.

Broad benefits of paved shoulders

While this plan focuses on the need for paved shoulders as a way to provide accommodations for bicyclists (and occasionally pedestrians) in rural areas, it is important to recognize that paved shoulders provide a wide range of benefits for all road users. The original and primary purpose of paving shoulders is to improve roadway safety, namely by reducing motor vehicle crashes. According to the FHWA, shoulders have numerous benefits beyond improving bicycle accommodation, including:

- Providing space for emergency storage of disabled vehicles (to allow moving disabled vehicles from the travel lane);
- Significantly reducing costs for maintaining shoulders;
- Providing space for enforcement activities (such as issuing traffic citations);
- Providing space for maintenance activities (such as to allow maintenance work to occur without closing the travel lane and to provide space for snow storage in the winter);
- Providing an area for drivers to maneuver to avoid crashes (such as swerving to avoid rear-end crashes or debris in the travel lane); and
- Increasing safety by providing a stable, clear recovery area for drivers who have left the travel lane.

Furthermore, paved shoulders have been shown to reduce the need for repairs due to roadway pavement edge deterioration. The width of the paved shoulder also has a significant effect on crash reduction. An additional two feet of paved shoulder width (6 feet versus 4 feet) can reduce crashes by 26 percent (based on an 11-foot wide travel lane)*.

Therefore, the cost impact of providing slightly wider paved shoulders to accommodate bicyclists should be viewed with the understanding that investing in additional paved shoulder width to accommodate bicyclists is also an investment in providing quantifiable safety and maintenance benefits.

* FHWA. *Safety Evaluation of Lane and Shoulder Width Combinations on Rural, Two-Lane, Undivided Roads.*

Total 3R Program cost impact

The total cost impact of the Complete Streets Policy was estimated by examining the FY2017 3R projects for each Iowa DOT District office, identifying the need for bicycle accommodations, and estimating the additional cost required for said accommodations. Of the 56 projects in the combined FY2017 3R budget, 45 projects would have no additional cost for bicycle accommodations—either because the project already includes adequate paved shoulders or because the project would be considered exempt from the policy because it involved spot improvements, was a seal coat project (which are very low cost per mile and therefore not conducive to widening shoulders), or was on a roadway that prohibits bicycles (expressways with minimum speed limits).

Of the remaining eligible projects, eight projects passed two or fewer need tests, with one passing none of the tests. For these projects, the cost exception thresholds were lowered to 15, 10, or 0 percent. Most of the projects required only 1.5 additional feet of paved shoulder width (per side) to provide an adequate accommodation. A few projects required an additional 2.5 to 3.5 feet per side. The estimated total cost of providing accommodations on the eligible projects totaled approximately 3 percent of the FY2017 3R budget of \$98.6 million.

5-year Highway Program cost impact analysis

The 2015-2019 Highway Program (and its November 2014 amendment) was reviewed to identify projects that would have been affected by the Complete Streets Policy and determine the cost impact of providing bicycle and pedestrian accommodations. Overall, the Highway Program had budgeted over \$2.7 billion for projects between 2015 and 2019. Of this figure, approximately \$1.1 billion was for non-Interstate pavement modernization and non-Interstate capacity/system enhancement. It is primarily this portion of the Highway Program that would be affected by the Complete Streets Policy.

The analysis of the 5-Year Highway Program included the following components.

Project selection

Paving projects (often including grading), pavement rehabilitation projects that are not part of the 3R Program, pavement widening projects, reconstruction projects, and new construction projects were extracted into a table, along with costs, traffic volumes (ADT), and project length. Interchange projects, Interstate highway projects, and projects that solely include activities like right-of-way acquisition and erosion control were not included. Bridge replacement projects were also not included because current standards ensure shoulder widths that are adequate for bicyclists. The result was a list of 33 projects.

Assumptions

For purposes of this analysis, it was assumed that none of the rural projects currently have paved shoulders and that any paved shoulder work that will be performed on rural projects will entail providing a paved shoulder of the Iowa DOT Design Manual's stated preferred width based on traffic volume. In addition, it was assumed that existing right-of-way and right-of-way to be acquired would be adequate for accommodations (that is, no right-of-way costs would be incurred by providing bicycle and pedestrian accommodations).



Project classification

Projects were classified as urban⁴ or rural based on location. A preferred bicycle treatment (shared road, relocate rumble strip, or widen shoulder by a certain number of feet) was identified for rural projects based on traffic volume. For urban projects, a review of aerial imagery and Google Street View imagery was performed to identify current conditions and constraints in a very cursory manner. A preferred bicycle and pedestrian treatment was identified for urban projects based on existing pavement width, traffic volume, and site constraints. For pedestrians, it is assumed that each project would need a new 5-foot wide sidewalk on one side of the street for its entire length. While it is standard to provide sidewalks on both sides of a city street, the cost of providing a sidewalk on only one side was considered an average or typical situation since some projects already have sidewalks on both sides while others have stretches without any sidewalks.

Total 5-year Highway Program cost impact

Costs for rural accommodations were estimated based on the unit cost determined during the 3R Program Cost Impact Analysis on the previous pages. Specifically, the cost of an additional 2 feet of HMA shoulder is \$50,000 per mile. Costs for urban accommodations vary based on existing pavement width and are based on national typical costs. For each project, the cost of context-sensitive accommodations as a percentage of the overall budgeted cost was calculated. This ranges from 0 percent to 125 percent (see next section) with a median of 2 percent.

The sum of the cost of accommodations for each project equals 2.8 percent of the total budgets for these 33 projects.

4 Urban projects include those within any incorporated city limit and typically are lower-speed roadways with curbs.

Impact reduction effect of exceptions

Only two of the selected projects have accommodation costs that exceed the 20 percent maximum cost threshold allowed by the Complete Streets Policy (one minor pavement rehabilitation project at 125 percent and one pavement widening project at 100 percent)⁵. For these projects, a constrained bicycle and pedestrian treatment (such as shared lanes instead of bike lanes or shoulders) was sought; however, the budgets of these two projects are so small that no accommodations can be provided at less than 20 percent of the budget. Therefore, the cost (and requirement) for accommodations was removed from the analysis. Removing these two projects lowered the cost of accommodations as a percentage of the combined project budgets from 2.8 percent to 2.2 percent.

System-wide cost estimate summary

The Complete Streets Policy allows for up to 20 percent of the project budget to be allocated toward bicycle and pedestrian accommodations. This may be incorrectly interpreted as meaning that 20 percent of the 3R Program and 5-Year Highway Program budgets are to be spent on bicycle and pedestrian accommodations. **However, this analysis demonstrates that the estimated cost impact of the Complete Streets Policy is much less than 20 percent—rather, it is 3.2 percent for the 3R Program and 2.2 percent for the Highway Program.**

5 Furthermore, 10 out of 33 projects exceed a 10 percent accommodation cost threshold and of these, three exceed a 15 percent threshold. Seven projects have no cost impact and 10 are between a 0.1 percent and 5 percent accommodation cost threshold.