



North Carolina DOT complete streets



North Carolina Department of Transportation Complete Streets Project Evaluation Methodology

The North Carolina Department of Transportation (NCDOT) Complete Streets Project Evaluation Methodology is provided to aid in the evaluation of highway projects for Complete Streets incidental improvements (Figure 1). This guidance is intended to support Project Leads and Managers throughout the Project Delivery Network (PDN) stages with identified input and decision points, beginning with all five steps in PDN Stage 1 and select steps revisited in PDN Stage 2 with improved and updated project information.

Project Leads and Managers should supplement this process with local conversations, detailed analysis of conditions to design the appropriate facility to meet identified needs, and information provided as part of the Complete Streets Project Sheets. Engineering judgement is an important part of the overall decision-making process. Findings and decisions reached under each step should be documented to support final decision-making. Additionally, this guidance and analysis framework are not intended for any purpose outside of the Complete Streets evaluation process related to the Complete Streets policy.¹

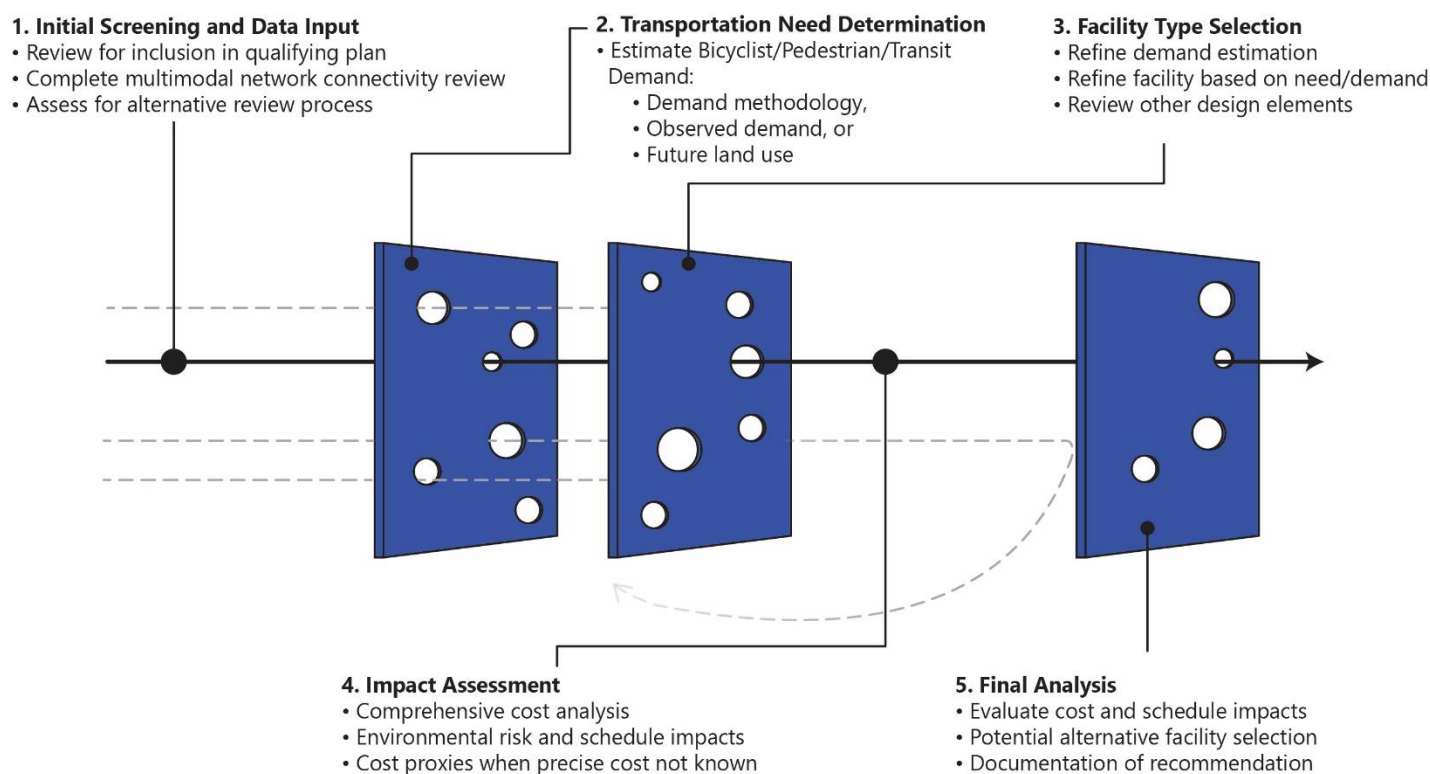
Elements of the Methodology

1. Initial Screening and Data Input
2. Transportation Need Determination
3. Facility Type Selection
4. Impact Assessment
5. Final Analysis

This methodology will be updated periodically as processes and procedures are refined and project-specific cost impacts are evaluated. A summary checklist of the data inputs and decisions are included at the end of this guidance document.

¹ Training on this guidance will be provided to Division staff and others charged with completing the evaluation process.

Figure 1 - Complete Streets Project Evaluation Methodology Process



Step 1 – Initial Screening and Data Input

- 1.1. Occurs during PDN Stage 1.
- 1.2. Complete a screening of planning documents (i.e. Comprehensive Transportation Plans, Metropolitan Transportation Plans, locally adopted bicycle and pedestrian plans, small area plans, etc.), multimodal network connectivity review (gap analysis), STIP projects, and compile data regarding existing and anticipated conditions for the transportation project under review.²
 - 1.2.1. The thresholds for the gap analysis should be considered as one-half (0.5) mile for pedestrian facilities and three (3) miles for bicycle facilities from the project's limits. Gap analysis should not be constrained by municipal or county boundaries.³
 - 1.2.2. Information and analyses developed during the strategic prioritization process may support data needs in Steps 1-3.
 - 1.2.3. The *NCDOT Complete Streets Implementation Guide* provides additional information on qualifying plans and the application of the Complete Streets policy.⁴

² The *Complete Streets Policy Guidance* applies generally to transportation facilities funded by or through NCDOT including roadway and bridge projects.

³ While the gap analysis considers bicycle and pedestrian facilities within certain distances, this guidance applies only to identifying and selecting facilities to eliminate or reduce the gap within the specific project's footprint.

⁴ Maintenance projects are subject to a different evaluation process, and cost thresholds to determine impact may be different than those identified in Step 5.

- 1.3. At this step, it may be determined that some project types are not subject to the policy and should proceed through an alternative evaluation process. These may include:
- Emergency repairs.
 - Interstate projects where Y-line roadways/facilities are not modified.
 - Safety projects (such as at-grade rail crossing improvements, Spot Safety and Mobility projects, and High Impact/Low Cost Program projects).
 - Maintenance and HMIP projects (excluding preservation or resurfacing projects that allow for the marking of shoulders as bicycle facilities). Consult the *NCDOT Complete Streets Resurfacing and Maintenance Activities Implementation Guidance* for direction on this specific alternative evaluation process.
 - Metropolitan Planning Organization (MPO) or Rural Planning Organization (RPO) funded projects, though they are required to meet NCDOT design criteria and may follow the *Complete Streets Project Evaluation Methodology* or an alternative methodology that is equal or greater to determine need and select the appropriate facility(ies).

Step 2 – Transportation Need Determination

- 2.1. Occurs during PDN Stage 1 (may also be verified/revisited during PDN Stage 2).
- 2.2. Need is based on current observed or estimated bicyclist/pedestrian/transit user demand.
- 2.3. Demand can be estimated using the following recommended methodology:
 - 2.3.1. Consult the pedestrian/bicyclist [demand estimation map](#) for the applicable category of demand for the project area. Estimated demand in the map is based on a weighted average of population, employment, and zero-vehicle household (ZVH) densities. See Table 1 and Table 2 for the methodology and thresholds to estimate current demand.
 - 2.3.2. For projects located in Medium and High categories, proceed to Step 3.
 - 2.3.3. For Intermittent/None and Low demand areas, the Project Lead or Manager should consult with the relevant Metropolitan Planning Organization (MPO) or Rural Planning Organization (RPO) for current land use context and future land use or population growth assumptions and contact Integrated Mobility Division (IMD) to determine if demand in the project area is likely to increase through the project design year.⁵

Note: Table 1 is provided as guidance to describe demand during initial analysis steps, and it should be supplemented with other data. Engineering judgement is followed when determining demand level for facility selection described in Step 3.

Each Block Group is assigned a value based on the density of population, jobs, and ZVH per square mile as identified in Table 1, and Table 2 displays the equal weighting of the three variables. The combined weighted score is then calculated to determine which of the four demand levels the Block Group falls under.

⁵ The discussion may also address outlier land uses that include populations that do not contribute toward walking and bicycling trips, such as prison populations.

Table 1 - Demand Estimation Variables

Est. Demand Level & Land Use	Typical Demand Levels by Variable		
	Population (per sq/mi)	Employment (per sq/mi)	Zero-Vehicle Households (per sq/mi)
Intermittent/None (e.g. Rural)	≤100	≤10	<10
Low (e.g. Rural Town)	>100 to 250	>10 to 100	10 to 214
Medium (e.g. Suburban)	>250 to 750	>100 to 500	215 to 426
High (e.g. Urban)	>750	>500	>426

Table 2 – Demand Variable Weights

Weights of Demand Index Inputs		
Population (people per sq/mi)	Employment (jobs per sq/mi)	Zero-Vehicle Households (ZVH per sq/mi)
33%	33%	33%

The following map applies this methodology to show how demand levels vary across the state. The underlying map data will be updated as frequently as new information is available.⁶ The static map is also available as an [interactive online map here >>](#)

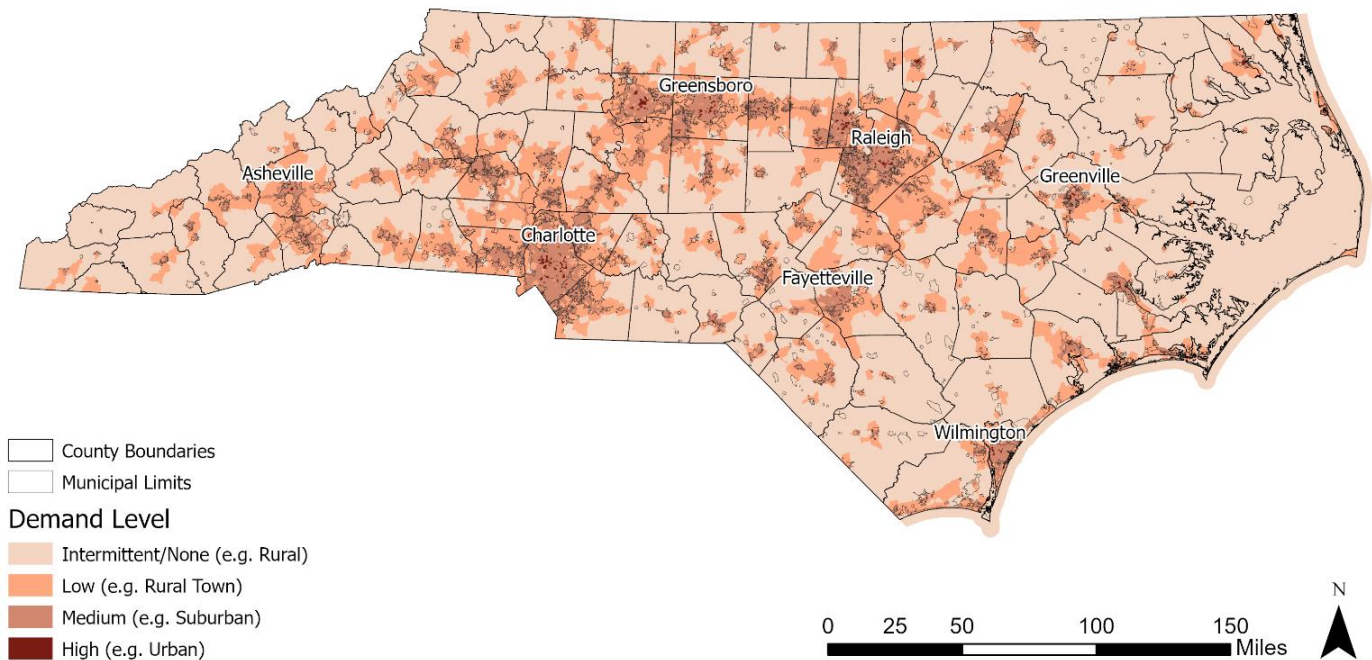
2.4. Demand can also be determined based on actual observations of current conditions.

- 2.4.1. Observed worn paths or transit routes may be additional proxy indicators of demand, in lieu of actual counts. A virtual field visit review and local input may substitute for in-person review and counts data.
- 2.4.2. Consistent and recurring pedestrian and bicycle activity should be considered Medium or High demand. Observed pedestrian and bicycle activity that is not consistent and recurring should be considered Low demand. The Complete Streets Project Evaluation Methodology may be updated in the future to include volume estimates based on collected data for North Carolina.
- 2.4.3. Transit ridership, presence of fixed-route bus system stops, or pedestrian/bicycle crash⁷ history may also be used as surrogates for estimating demand. Consider requesting ridership information from the transit operator within the project area.
- 2.4.4. Project Managers and Leads should continue the evaluation if any of the methods above (i.e. observed demand, the demand estimation tool) identify demand above Intermittent/None levels.

⁶ The population and ZVH information is based on U.S. Census Block Groups from the 2015-2019 American Community Survey, and employment location data is based on U.S. Census blocks—aggregated to the block group level—from the U.S. Census Longitudinal Employer-Household Dynamics Survey.

⁷ While bicyclist and pedestrian crash data may supplement the transportation need determination, the absence of crashes should not be used as a justification to exclude Complete Streets elements. Compared to motor vehicle crashes, pedestrian and bicycle crashes are infrequent, underreported, and there is a general lack of data to estimate exposure. Risk factors such as elevated operational speeds, multiple lanes, and higher vehicle volumes may be present along roadways that do not have reported bicycle and pedestrian crashes.

Demand Estimation Map



The demand estimation map may also be viewed in the [online map with PBIN and STIP project data here >>](#) for discussion purposes.

2.5. Additional key Step 2 considerations for Intermittent/None demand areas:

- 2.5.1. If the network gap analysis completed in Step 1 reveals a clear need, the project should continue through the remaining steps of evaluation.⁸ Network connectivity is an integral component of achieving Complete Streets. Existing pedestrian facilities within one-half (0.5) mile and existing bicycle facilities within three (3) miles of the project should be considered as establishing a gap in the network.
- 2.5.2. ***If the project area is within a municipal boundary but the analysis indicates an Intermittent or No Demand area, such as a rural incorporated town, the project should proceed through the remaining evaluation steps.⁹ These areas are identified in the Demand Estimation Map as “Rural Incorporated Areas.”***
- 2.5.3. If the project area is in an Intermittent or No demand area, but contains a state or region-wide project like the facilities recommended in the Great Trails State Plan, including the Appalachian Trail, Mountains to Sea Trail, East Coast Greenway, Carolina Thread Trail, and Piedmont Legacy

⁸ The Pedestrian Bicycle Infrastructure Network (PBIN) may be used as a data layer for review of network completeness and gaps.

⁹ The pedestrian and bicyclist demand methodology incorporates Census Block Group data that does not precisely display the natural clustering of population and Zero-Vehicle Households in exceptionally low population rural areas. Additional review is intended to confirm the desire for network connectivity and demand. Discussion with the local government agency (LGA) is necessary to determine maintenance of separated facilities, as the lack of an agreement will likely affect facility selection in Step 3.

Trails or other adopted regional bicycle or pedestrian facilities within the project limits, the project should proceed through the remaining evaluation steps.¹⁰

Step 3 – Facility Type Selection

- 3.1. Occurs during PDN Stage 1 (may also be verified/revisited during PDN Stage 2).
- 3.2. Typical or preferred facility type is selected as a factor of anticipated pedestrian/bicyclist demand and risk.
- 3.3. Anticipated demand methodology – Anticipated demand is determined by identifying two inputs: the project’s design year forecasted AADT with roadway configuration (equals design year minus first year of construction, consult the project forecast for growth rates, and contact the Transportation Planning Division for input and clarification as needed) and the forecasted bicycle and pedestrian demand level. Base year pedestrian, transit, and bicycle activity, counts, and/or the current demand estimation may be used to forecast lower, higher, or unchanged levels of activity.
 - 3.3.1.1. The anticipated demand calculation should be supplemented with a thorough review of future land use assumptions (in areas with adequate data) or in consultation with IMD for supporting analysis of future land use and anticipated growth (in areas without land use models).¹¹ This may not be necessary in High demand areas and other areas where land uses are not anticipated to undergo changes through the project design year.
 - 3.3.1.2. The ITE Trip Generation Manual may also be utilized to supplement pedestrian and bicycle demand estimates when project area land use plans are known. For the purposes of applying the ITE Trip Generation Manual, fewer than 10 trips (combined bicycle and pedestrian trips) per day from the project area may be considered Intermittent/None, 10 to 25 trips as Low demand, 25 to 100 as Medium demand, and greater than 100 combined trips per day as High demand.
- 3.4. Facility type selection is based on pedestrian and bicyclist demand and safety risk. Risk is primarily based on number of lanes, vehicle AADT, and design speed. On roadways with higher anticipated demand and higher risk, a more comprehensive pedestrian/bicycle facility is needed, such as increased shoulder width, a delineated buffered space, or a separated facility.¹²
- 3.5. The matrix below, Table 3, illustrates the methodology and thresholds, and it provides guidance on the thresholds and corresponding facility type recommendations.
 - 3.5.1. Both a preferred and alternative option facility type should be chosen during Step 3. The listed priority facility is evaluated first, followed by the facility options that provide the greatest separation from motor vehicles as listed in Table 3. The preferred facility will be evaluated in Steps 4 and 5, whereas the alternative option(s) will be evaluated in the situations where the preferred options presents considerable costs or schedule impacts.

¹⁰ See the *NCDOT Complete Streets Policy – Frequently Asked Questions (FAQs)*. For example, these routes may support travel between rural towns or to destinations of regional or statewide significance.

¹¹ MPOs and RPOs with future population, employment, and zero-vehicle household estimates may consider evaluating project area pedestrian and bicycle demand according to the thresholds and weights in Tables 1 and 2. These estimations may be considered for Step 3.3. and shared with the project team.

¹² The FHWA “Bikeway Selection Guide” provides recommendations for increased shoulder width based on roadway speeds and vehicle volumes. The resource is accessible https://safety.fhwa.dot.gov/ped_bike/tools_solve/docs/fhwasa18077.pdf

- 3.5.2. Select the roadway configuration column with the same or higher number of lanes and median presence. Atypical cross sections (i.e. four-lane undivided, imbalanced lane configurations) are not shown in the table.
 - 3.5.3. Select the roadway configuration column and facility type based on operating speed. If the operating speed exceeds the listed AADT and cross section, select the higher AADT and lane configuration. For example, if a project has AADT less than 6,000 and a 2 or 3 lane configuration, but operating speeds exceed 35 mph, select next highest AADT category (i.e. $\geq 6,000$ AADT) at the same bicycle and pedestrian demand level.
 - 3.5.4. When two priority facility types are shown for a mode, such as a separated bicycle lane and shared-use path, the Project Lead and Manager should review local plans, the roadway and bicycle and pedestrian network, and on-site conditions to select the more appropriate facility.
 - 3.5.5. In situations where demand is present or anticipated for both pedestrians and bicyclists, follow the facility selection table to accommodate both user types.
- 3.6. Facility specifications and dimensions are located within the NCDOT Roadway Design Manual (RDM)¹³:
- Sidewalks and Berms (Part 1, Chapter 4, Section 4.14.1);
 - Shared-Use Paths, Sidepaths, and Greenways (Part 1, Chapter 4, Section 4.14.1.1);
 - Shared Lanes (Part 1, Chapter 4, Section 4.15.1);
 - Bicycle Lanes (Section 4.15.3);
 - Buffered Bicycle Lanes (Part 1, Chapter 4, Section 4.15.4);
 - Separated Bicycle Lanes (Part 1, Chapter 4, Section 4.15.5);
 - Shoulder Widths (Part 1, Chapter 4, Section 4.4.1).
- 3.7. Special considerations for Low and Intermittent/No Demand Areas:
- 3.7.1. Shared roadways and paved shoulders are not considered formal pedestrian or bicycle facilities, and Project Managers and Leads should consult with the local government agency (LGA) and review for safety needs when considering these options.¹⁴
 - 3.7.2. In Low or Intermittent/None demand areas where the project cross section includes curb and gutter, on-road bicycle facilities may substitute for paved shoulders.
- 3.8. Paved shoulders are typical improvements on many NCDOT projects, and Project Leads and Managers should consult the RDM to determine if the width is sufficient.¹⁵ Paved shoulder widths typically increase on roadways with higher vehicle volumes and higher speeds.
- 3.9. Sidewalk placement—one or both sides of the roadway—is dependent on distribution of development along the roadway. Where land development is along both sides of the roadway, consider including sidewalks on both sides. Where land development is not consistent along both sides of the roadway and there is potential for pedestrian and/or bicycle crossings, consider including sidewalks on both sides of the roadway.

¹³ NCDOT RDM as published November 1, 2021.

¹⁴ See the AASHTO *Guide for the Development of Bicycle Facilities* (2012) for additional information on paved shoulders.

¹⁵ See the NCDOT RDM Part 1, Chapter 4, Section 4.4.1.

- 3.10. Project Leads and Managers must also review the project for design elements beyond the typical section, including intersection, transit¹⁶, and crossing improvements. Pedestrian and bicyclist crossings should be expected as distance between crosswalks and intersections increases.¹⁷ Consult with IMD staff to assist with review of transit needs. Review the NCDOT Integrated Project Delivery (IPD) for more information about the review process for these elements.

¹⁶ The type, frequency, and placement of transit facilities such as bus pads, landing pads, benches, and shelters are highly dependent on the current or anticipated route ridership, transit design vehicle, and station/stop configurations. Program managers should consult with the local transit system operator to discuss integration of transit facilities into the roadway project. Consult the NACTO *Transit Street Design Guide*, the AASHTO *Guide for Geometric Design of Transit Facilities on Highways and Streets*, and the RDM (Chapter 4, Section 4.16) for additional guidance.

¹⁷ See the NCDOT RDM Part 1, Chapter 4, Section 4.14.2.1 “Pedestrian Roadway Crossings” for more information on establishing crossings.

Table 3 - Facility Selection Matrix

Sources: FHWA Bikeway Selection Guide; PEDSAFE; (ITE) Designing Walkable Urban Thoroughfares: A Context Sensitive Approach; Other state DOT selection policies

		AADT and Roadway Configuration			
Operating Speed		Operating speed 35 mph or less	Any cross section with designs supporting operating speeds above 35 mph		
Pedestrian and Bicycle Demand		<6,000 AADT (2 or 3 Lanes)	≥6,000 AADT (2 or 3 Lanes)	4 Lane Divided	>4 Lanes
	High	P: Wide Sidewalk (2) O: Sidewalk (2) B: Buffered Bicycle Lane O: Bicycle Lane, Shared Lane	P: Wide Sidewalk (2) O: Sidewalk (2) B: SBL/SUP O: Buffered Bicycle Lane, Bicycle Lane		
	Medium	P: Sidewalk (1-2)* B: Buffered Bicycle Lane O: Bicycle Lane, Shared Lane	P: Sidewalk + Expanded Buffer (1-2)* O: Sidewalk (1-2)* B: SBL/SUP O: Buffered Bicycle Lane, Bicycle Lane		
	Low	P: Sidewalk (1) O: Paved Shoulder (width TBD), No Facility/Shared Roadway B: Paved Shoulder (width TBD) O: Shared Roadway/No Facility	P: Sidewalk (1) O: Paved Shoulder (width TBD) B: Paved Shoulder (width TBD) O: Shared Roadway/No Facility	P: Sidewalk (1) O: Paved Shoulder (width TBD) B: SUP O: Paved Shoulder (width TBD), Shared Roadway/No Facility	
	Intermittent / None	B: Shared Roadway/No Facility			

Table 3 - Facility Selection Legend and Notes

P - Denotes priority pedestrian facility. The priority pedestrian facility must be analyzed first before consideration of additional facility type options.

B - Denotes priority bicycle facility or space to accommodate bicyclists. The priority bicycle selection must be analyzed first before consideration of additional facility type options.

O - Denotes alternative facility options for consideration in order of recommended evaluation after the priority facility. Options that provide the greatest separation from motor vehicles must be evaluated before other options.

Terms: SBL = Separated Bicycle Lane, SUP = Shared-Use Path, "Shared Lane" may consist of Shared Lane Markings, additional markings, and traffic control devices for bicycle awareness, "Sidewalk+" indicates the presence of sidewalk and expanded buffer/furnishing strip, "Paved Shoulder" may accommodate bicyclists with widths that are to be determined, and "Shared Roadways" may include signage and shoulders per 3R guidance.

(#) - Indicates number of sidewalks along a roadway.

***** - Sidewalk placement dependent on distribution of development along the roadway. For balanced development, consider sidewalks on both sides. Where land development is not consistent along both sides of the roadway and there is potential for pedestrian and/or bicycle crossings, consider including sidewalks on both sides of the roadway.

Dual Priority Facility Types: When two priority facility types are shown for a mode, such as separated bicycle lanes and shared-use path (SBL/SUP), the Project Lead and Manager should review local plans, the roadway and bicycle and pedestrian network, and on-site conditions to select the more appropriate facility.

Demand for Both Pedestrian and Bicycle Facilities: In situations where demand is present or anticipated for both pedestrians and bicyclists, follow the facility selection table to accommodate both user types.

Cross Sections: Select the roadway configuration column with the same or higher number of lanes and median presence. *Atypical cross sections (i.e. four-lane undivided, imbalanced lane configurations) are not shown above.*

Speed: Vehicle operating speed is an overall consideration for selecting facility types for pedestrians and bicyclists. Higher vehicle speeds increase the likelihood of a fatal or severe injury in the event of a pedestrian crash. If the operating speed is expected to be above 35 mph, then separated pedestrian and bicycle facilities are a priority for reducing the risk of severe injury and fatal bicycle and pedestrian crashes. The roadway project should include a network that supports the needs of the design user (considering the most likely type of bicyclist and abilities of the pedestrian population). The roadway should also include design features and measures to help achieve the desired operating speed, based on the surrounding context. If the operating speed exceeds the listed AADT and cross section, select the higher AADT and lane configuration.

Shoulders: Paved shoulders are neither a pedestrian nor bicycle facility, and the Project Lead and Manager should consult with the LGA and review for safety needs when considering this option. Paved shoulders are typical improvements on NCDOT projects, and Project Leads and Managers should consult the RDM for standard widths.

Step 3, continued

- 3.11. Engineering judgement is followed when choosing a preferred or alternative facility type in Step 3. Consult with local stakeholders and the local government to discuss cost-sharing or facility selection alternatives.
- 3.12. If the local government requests a higher facility type than the decision reached by the Project Lead or Manager through Step 3 of the evaluation process, the local government-selected facility would be considered a betterment, and the cost differential would be a local responsibility.
 - 3.12.1. If the local government-selected facility is later reduced in Step 5-Final Analysis due to cost or schedule impacts, and the resulting facility is the same or lower than the Project Lead or Manager's documented selection in Step 3, the facility would not be considered a betterment and would follow the cost share outlined in the *NCDOT Complete Streets Implementation Guide*.
- 3.13. Maintenance agreements must be in place for all separated facilities. In the event that an agreement cannot be reached with a local government for separated facilities, the Project Manager and Lead should evaluate the next highest non-separated facility type for inclusion in the project.
- 3.14. Roadway projects may include paved shoulders based upon factors identified such as design speed, AADT, functional classification, and lane width. Project Managers and Leads should consult the RDM for minimum shoulder width and for accommodating bicyclists.
- 3.15. Example scenarios where alternative facility selection may need to be considered:
 - The context of the project area is primarily in a non-residential area that produces few bicycle and pedestrian trip volumes per the ITE Trip Generation Manual. This may resemble a high employment industrial complex in a rural area, where the initial recommendation of a shared-use path is downgraded to wide paved shoulders due to lower anticipated demand. See earlier in Step 3 for guidance on the use of the ITE Trip General Manual for evaluating demand.
 - The project area has frequent driveway conflicts or access management issues that create numerous conflict points for bicyclists traveling on separated facilities like separated bicycle lanes or shared-use paths. The alternative design may include buffered bicycle lanes and sidewalks to maintain a level of separation for bicyclists and pedestrians while addressing driveway access.
 - The project area is in an extremely constrained environment where lane widths, berm, medians, and other roadway design elements cannot be reduced beyond design minimums. The alternative design may include changes to design speed and a standard bicycle lane or shared roadway and sidewalks instead of shared-use path.
 - The project area is in a constrained or sensitive area where—after roadway design elements have been reduced to minimum widths—the level of separation for bicycle and pedestrian safety is not feasible based on vehicle speed and volumes. The alternative design may include improving viable adjacent parallel routes that allow for a suitable facility type. Other considerations may include implementing speed reduction treatments on a parallel route.

Step 4 – Impact Assessment

- 4.1. Occurs during PDN Stage 1 and revisited in Stage 2 with updated project information.
- 4.2. A comprehensive cost analysis is completed that includes anticipated right-of-way, utilities, design, and construction expenses for the typical section and additional complete streets elements identified in Step 3.
 - 4.2.1. The cost analysis is conducted as part of PDN Stage 1 – Express Design with the best available estimates. Estimates may be revised during PDN Stage 2 with improved estimates. Project Leads or Managers may consider using the NCDOT Bicycle/Pedestrian Cost Estimation Tool (BPCE) as an option for cost estimation.¹⁸
 - 4.2.2. The Project Lead or Manager may choose to develop two project estimates based on conceptual designs that incorporate and exclude the preferred Complete Streets facility(ies); these estimates would inform Step 5 – Final Analysis to determine cost increase impacts, OR;
 - 4.2.3. The Project Lead or Manager--when in agreement with the Feasibility Study Unit--may document based on their engineering judgement that incorporating the selected Complete Streets elements is unlikely to both increase project costs in excess of 10% and significantly impact the project schedule, and they may proceed with final documentation in Step 5 without developing multiple project cost estimates and anticipated schedule impacts.
- 4.3. Environmental risk is considered, and anticipated schedule impacts are calculated.

Step 5 – Final Analysis

- 5.1. Occurs during PDN Stage 1 and revisited in Stage 2 with updated project information, such as additional analyses to reduce project impacts.¹⁹ The Project Lead or Manager should document discussions with stakeholders and decisions to reduce project impacts.
- 5.2. Projects that exceed a 10% cost increase for integrating Complete Streets components or result in significant schedule impacts may warrant greater scrutiny and additional analyses to further reduce impacts.²⁰ The following are additional considerations when assessing cost and schedule impacts:
 - 5.2.1. Cost increases beyond 10% may be anticipated for bridge, urban, and constrained project areas.
 - 5.2.2. Schedule impacts may not have quantitative thresholds but instead should be reviewed on a case-by-case basis.
 - 5.2.3. The cost increase guidance will be updated in future versions of this guidance to aid decision making as data becomes more readily available regarding cost impacts of adding Complete Streets components.
- 5.3. If additional costs present considerable impacts, Steps 3 and 4 should be repeated with the next best alternative facility type and refined design considerations.

¹⁸ The NCDOT BPCE tool is available on [NCDOT Connect here >>](#)

¹⁹ If the impacts identified in Step 4 are substantial, the Project Lead or Manager should consider additional analyses to reduce impacts in Step 5.

²⁰ An analysis of historical NCDOT project let lists has shown that integrating Complete Streets components has increased project costs on average between from 2% to 10% for most projects.

- 5.3.1. Consult with IMD for guidance on consideration of additional alternative facility elements or design concepts in order to reduce cost.²¹
- 5.3.2. If schedule is considerably impacted by the addition of Complete Streets elements, the Project Lead/Manager may consider, in consultation with IMD, refining the Complete Streets components to reduce impact.
- 5.3.3. If the local government is not committed to maintaining the separated facility type, then the Project Lead or Manager should review the next highest non-separated facility type.
- 5.4. If review of alternative complete streets elements presents considerable costs impacts, NCDOT will lead a discussion with the local entity about an increased cost share as part of the municipal agreement.
- 5.5. If cost share does not change sufficiently to reduce cost increase and impacts, the project may be submitted to the Complete Streets Review Team with a recommendation not to include Complete Streets elements on this project and to address the pedestrian and bicycle needs through other methods or projects.
 - 5.5.1. The Complete Streets Review Team will review project information, identified pedestrian and bicycle needs, and anticipated impacts of providing elements.
 - 5.5.2. The Review Team may request further analysis from the Project Lead or Manager, or request additional details in order to make a determination.
 - 5.5.3. The Review Team may recommend proceeding with the Complete Streets elements and attempting to reduce impacts to the extent possible, or may recommend not proceeding with the Complete Streets elements and instead addressing the pedestrian and bicycle needs through other means or projects.
- 5.6. Any recommendation to not include Complete Streets elements and accommodate non-motorized users must include a proposed alternative plan to add the elements through other methods or projects (e.g., standalone project, USDOT grant, consideration of Complete Streets elements on an adjacent facility, etc.).
 - 5.6.1. A recommendation to include elements on parallel routes to address the need should be limited to inclusion in other STIP projects or situations in which alternative funding not subject to the STI prioritization process may be applicable.

²¹ Section 3.3 of the *NCDOT Complete Streets Implementation Guide*, Equal or Better Performance of a Facility, documents the process for evaluating modifications.