



NJDOT Complete Streets Assessment
FINAL REPORT

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Submitted by

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16. Abstract The New Jersey Department of Transportation (NJDOT) engaged Cambridge Systematics to research Complete Streets best practices and assess New Jersey's existing Complete Streets activities. The Complete Streets concept is comprised of approaches to planning, designing, and operating roadways and rights-of-way with all road users in mind, making the transportation network safer and more efficient. NJDOT is a national leader for promoting and implementing Complete Streets policies. Their policy requires that roadway improvement projects include safe accommodations for all users, including bicyclists, pedestrians, transit riders, and the mobility-impaired, supported by the <i>NJDOT Roadway Design Manual</i>. However, NJDOT finalized the Complete Streets policy in December 2009. Thus, the project involved coordination with internal and external Complete Streets stakeholders to identify notable gaps in the existing Complete Streets policy and update the Complete Streets components. This report starts with the results from a desk scan of best practices for Complete Streets policies and implementation elements, including an online search for national models; a review of relevant NJDOT and partner documents; and virtual interviews with internal NJDOT units, external partners, and a sample of DOTs for insight. The second section compiles the results of the gap analysis of the existing Complete Streets policy and practices for cohesive implementation. The gap analysis led to the recommendations that provided the basis for component updates. The 2009 NJDOT Complete Streets policy was updated to include expansion of the exemption criteria, provision of a wide range of Complete Streets solutions, standardized process to ensure thorough consideration of Complete Streets solutions, and an additional checklist for Limited Scope projects. Additionally, a <i>Complete Streets Implementation Guide - Comprehensive Solutions Handbook</i> was developed to help practitioners with the Complete Streets approach. All the updated components, including the Complete Streets policy, handbook, checklists, training recording, and other relevant resources are housed in an online central repository on NJDOT's website and will be available to the public once the updated policy has been approved.			
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TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
INTRODUCTION.....	3
1. DESK SCAN OF BEST PRACTICES FOR COMPLETE STREET IMPLEMENTATION	4
1.1. Desk Scan Best Practice Findings	4
1.2. Summary of individual sources	5
1.2.1. Smart Growth America / National Complete Streets Coalition: Complete Streets Implementation Guidebook.....	5
1.2.2. National Center for Sustainable Transportation: Technology Review and Roadmap for Inventorying Complete Streets for Integration into Pavement Asset Management Systems	6
1.2.3. Complete Streets State Laws & Provisions: An Analysis of Legislative Content and The State Policy Landscape, 1972-2018.....	7
1.2.4. North Carolina Department of Transportation.....	8
<i>NCDOT Complete Streets Implementation Guide and Workshops.....</i>	<i>8</i>
1.2.5. Minnesota Department of Transportation.....	9
1.2.6. California Department of Transportation	9
1.2.7. South Carolina Department of Transportation	10
1.2.8. Tennessee Department of Transportation	11
<i>Planning and Design.....</i>	<i>11</i>
<i>Multimodal Suitability Index.....</i>	<i>11</i>
1.2.9. Florida Department of Transportation.....	12
1.2.10. Massachusetts Department of Transportation	13
2. INTERVIEW SUMMARY	14
2.1. Project Scoping and Development.....	14
2.2. Design Manuals and Guidance	17
2.3. Funding Mechanisms	18
2.4. Performance Metrics and Tracking	18
2.5. Training, Outreach, and Communication	19
3. COMPLETE STREETS GAP ANALYSIS	21
3.1. Complete Streets Policy	21
3.2. Complete Streets Assessment.....	22
3.3. Roadway Design Manual and Other Guidance Document Updates ...	24
3.4. Alternative Funding Avenues for Complete Streets	25
3.5. Maintenance and Monitoring.....	26
3.6. Training and Outreach.....	27
3.7. Recommendations	28
4. COMPLETE STREETS COMPONENTS DEVELOPMENT	31
4.1. Updated Complete Streets Policy	31
4.2. NJDOT Complete Streets Implementation Guide - Comprehensive Solutions Handbook	31
4.3. NJDOT Complete Streets Checklists.....	32
4.4. Complete Streets Standard Operating Procedure.....	33
4.5. Complete Streets Policy Training	33
6. CONCLUSION	35

Table of Figures

Figure 1: FHWA Complete Street Implementation Strategy Scenarios	25
Figure 2: NJDOT Complete Streets Implementation Guide	31
Figure 3: SOP For Concept Development (CD) Phase (Left) And Preliminary Engineering Phase Or Final Design Phase (Right)	33
Figure 4: Complete Streets training at NJDOT Headquarters	34

EXECUTIVE SUMMARY

The New Jersey Department of Transportation (NJDOT) engaged Cambridge Systematics to research Complete Streets (CS) best practices and assess New Jersey's existing Complete Streets activities. The scope included comprehensive desk scans and interviews to research best practices for Complete Streets, a gap analysis of the existing Complete Streets policy and resources, component updates, the development of a resource repository, and an implementation schedule.

Complete Streets are streets designed to be safe for all roadway users, including bicyclists, pedestrians, transit riders, and the mobility-impaired. To provide safe, connected, and equitable transportation networks, Complete Streets are supported by policies and implementation strategies across all transportation projects and public agencies.

NJDOT is a national leader for promoting and implementing Complete Streets policies. The current policy, adopted by NJDOT in 2009, requires that roadway improvement projects include safe accommodations for all road users, including bicyclists, pedestrians, transit riders, and the mobility-impaired, supported by the *NJDOT Roadway Design Manual*.¹ However, NJDOT finalized the Complete Streets policy in December 2009 and has not updated the policy since. Thus, the project focused on updating the components of the Complete Streets policy and its supporting resources based on the latest best practices nationally.

The research team started with a comprehensive desk scan to understand the latest developments and best practices regarding the implementation of Complete Streets programs. The desk scan included targeted searches of both national organizations working on Complete Streets and state Departments of Transportation (DOT) with Complete Streets programs in place, including North Carolina DOT, Minnesota DOT, California DOT, South Carolina DOT, Florida DOT, and Massachusetts DOT. The research team also conducted interviews with several internal NJDOT stakeholders and external stakeholders to learn more about the current state of the NJDOT Complete Streets policy and implementation, and identify the notable gaps and best practices for consideration.

The desk scan and interviews helped the research team perform a gap analysis of the existing Complete Streets policy. The gap analysis identified all the NJDOT business processes currently or that might be impacted by Complete Streets, workflow integration points, missing implementation guidance categorized by each step of the project delivery process, and the evolving roles, responsibilities, and critical paths essential to implementation.

The gap analysis delivered recommendations that provided the basis for component updates. The 2009 NJDOT Complete Streets Policy was updated to include expansion of the exemption criteria, provision of a wide range of Complete Streets solutions,

inclusion of a standardized process for thorough consideration of Complete Streets solutions, and an additional checklist for Limited Scope projects. Additionally, a *Complete Streets Implementation Guide - Comprehensive Solutions Handbook* was developed to help practitioners with the Complete Streets approach.

The NJDOT Bureau of Safety, Bicycle and Pedestrian Programs, with support from Cambridge Systematics, also hosted an in-person Complete Streets policy training on October 12, 2023, at NJDOT headquarters for NJDOT staff to provide updates on the 2023 NJDOT Complete Streets policy. All the updated components, including the Complete Streets policy, handbook, checklists, training recording, and other relevant resources are housed in an online central repository on NJDOT's website and will be available to the public once the updated policy has been approved.

¹ New Jersey Department of Transportation, *Roadway Design Manual* (2015, revised 2023).
<https://www.nj.gov/transportation/eng/documents/RDM/>

INTRODUCTION

The purpose of this research report is to assist the New Jersey Department of Transportation in researching Complete Streets best practices and assessing New Jersey's existing Complete Streets activities. The project involved coordination with internal NJDOT and external Complete Streets stakeholders, a robust desk scan of national best practices, and a comprehensive gap analysis of the existing Complete Streets policy and its resources. These efforts led to component updates, the development of a resource repository, and a schedule for implementation.

The Complete Streets concept is comprised of approaches to planning, designing, and operating roadways and rights-of-way with all road users in mind, making the transportation network safer and more efficient. NJDOT is a national leader for promoting and implementing Complete Streets policies. Their policy requires that roadway improvement projects include safe accommodations for all roadway users, including bicyclists, pedestrians, transit riders, and the mobility-impaired, supported by the *NJDOT Roadway Design Manual*. However, NJDOT finalized the Complete Streets policy in December 2009. Thus, the project focused on updating the components of the Complete Streets policy and supporting resources based on the latest best practices nationally.

This report starts with the results from a desk scan of best practices for Complete Streets policies and implementation elements, including an online search for national models, a review of relevant NJDOT and partner documents, and virtual interviews with internal NJDOT units, external partners, and a sample of DOTs for insight.

The second section compiles the results of the gap analysis of the existing Complete Streets policy and practices for cohesive implementation. The gap analysis identifies all the NJDOT business processes currently or that might be impacted by Complete Streets, workflow integration points, missing implementation guidance categorized by each step of the project delivery process, and the evolving roles, responsibilities, and critical paths essential to implementation.

Based on recommendations from gap analysis, the following components of Complete Streets were updated:

- 2009 Complete Streets policy
- NJDOT Complete Streets Implementation Guide - Comprehensive Solutions Handbook
- Complete Streets checklists which include a new Limited Scope checklist
- Complete Streets Standard Operating Procedures

1. DESK SCAN OF BEST PRACTICES FOR COMPLETE STREET IMPLEMENTATION

The purpose of this task was to assist the NJDOT in understanding the latest best practices regarding Complete Streets policy, programs, and implementation through a comprehensive desk scan. The desk scan included targeted searches of information from both national organizations working on Complete Streets and state DOTs with Complete Streets programs in place.

1.1.Desk Scan Best Practice Findings

Based on a review of published national studies, national guidance, and state DOT complete streets policies, several best practices emerged across a number of themes:

- **Build institutional capacity, with clear roles and for the implementation of Complete Streets policies.** North Carolina and Florida have created Complete Streets core groups, while Minnesota lays out specific roles and responsibilities across the agency in its policy document.
- **Change or adapt processes and procedures for project selection and prioritization.** While metrics such as level-of-service can dominate decision-making, states may integrate other priorities or metrics such as multimodal inclusion and equity in capital project decisions. Additionally, Complete Streets elements may be given increased consideration in routine maintenance projects. Tennessee has increased the opportunities for Complete Streets elements in maintenance projects by switching from a one-year planning horizon to a three-year planning horizon.
- **Update key design manuals and documents to properly incorporate complete streets elements.** While some states opted to add chapters or additional language into their Roadway Design Manuals, others opted to adopt national guides from AASHTO, NACTO and elsewhere to serve as multimodal design references.
- **Ensure proper funding mechanisms.** It is important to create funding channels to ensure that money is funneled towards Complete Streets projects. As an example, Massachusetts has created a tiered funding program to incentivize municipalities to adopt Complete Streets policies and implement Complete Streets projects.
- **Track projects and performance.** To effectively evaluate progress, it is important to create systems and frameworks for identifying, collecting, and

measuring the necessary data and metrics for Complete Streets performance. Minnesota has published annual performance reports that track relevant multimodal data, as well as project implementation.

- **Engage in training and outreach.** Training the necessary NJDOT staff on updated policies and procedures is essential to Complete Streets implementation. Additionally, it is beneficial to use workshops, webinars, and conferences to educate and share knowledge with county and municipal partners.

1.2. Summary of individual sources

The individual sources including national studies, national guidance, and state DOT complete streets policies are discussed in detail below:

1.2.1. Smart Growth America / National Complete Streets Coalition: Complete Streets Implementation Guidebook

The [National Complete Streets Coalition](https://smartgrowthamerica.org/program/national-complete-streets-coalition/resources/), a national organization dedicated towards promoting and developing Complete Streets policies, published a guidebook for best practices of Complete Streets implementation. The Complete Streets Implementation Guidebook² notes the following strategies:

1. **Planning for Implementation.** It is important to build institutional capacity and understanding in order to plan for the rollout of a Complete Streets program. This may involve creating a new committee or designating a lead agency in charge of implementation, as well as building relationships across relevant agencies and stakeholders.
2. **Changing Procedures and Processes.** The core of Complete Streets implementation is the development of new processes. After reviewing current rules and procedures, agencies should update how they select transportation projects, moving beyond typical level-of-service (LOS) metrics to include points rewarding elements such as multimodal inclusion and equity. Other systems may also be developed, including new project development processes and the adoption of project-specific checklists.
3. **Training and Education.** A critical component of implementing Complete Streets is training staff on the technical components of the policy and

² Smart Growth America. <https://smartgrowthamerica.org/program/national-complete-streets-coalition/resources/>

educating stakeholders and community members on the policy goals. This can be done through training sessions, workshops, and other outreach events.

4. **Reviewing and Updating Design Guidance.** Agencies should revise and update internal roadway design manuals to provide additional flexibility for multimodal approaches or refer to external guidance which incorporates multimodal design options.
5. **Measuring Performance.** Agencies should monitor and track the performance of multimodal projects. Agencies should also revise performance measures to reflect new priorities, including but not limited to: crashes by mode, mode shift over time, vehicle miles traveled, and multimodal level of service.

1.2.2. National Center for Sustainable Transportation: Technology Review and Roadmap for Inventorying Complete Streets for Integration into Pavement Asset Management Systems

The National Center for Sustainable Transportation (NCST) recently released a study³ summarizing the current implementation status of Complete Streets asset management and developing a roadmap of best practices. As part of the roadmap, the NCST recommends two parallel pathways for advanced Complete Streets asset management.

First, the study recommends the creation of Complete Streets performance measures, targets, and prioritization. To do so, the following elements are needed:

- Identification of which assets need to be inventoried and an appropriate location referencing system (LRS) to consistently tie data to asset locations.
- A framework for how to collect data, including a condition rating system, equipment, and procedures.
- Performance models to forecast long-term performance.
- Decision trees that trigger treatment timing and identify preliminary type selection.

³ National Center for Sustainable Transportation (2021). <https://ncst.ucdavis.edu/project/technology-review-and-roadmap-inventorying-complete-streets-integration-pavement-asset>

- Benefits equations for benefit-cost analysis.
- Prioritization indices or other prioritization methods in the usual case of constrained budgets where not all triggered projects may be funded.
- Methods for combining prioritization of projects within the vehicle travel lane with prioritization of projects incorporating active transportation features.

Second, the study recommends selecting a set of technologies and methods for data collection, a database of Complete Streets data, and improved methods of interacting with the data. Methods for data collection range from usage of technologies such as light detection and ranging (LiDAR) to the employment of crowdsourcing techniques. The study not only recommends conducting pilot tests to understand effectiveness of different collection methods, but also testing effectiveness of various software programs for managing and analyzing the data.

1.2.3. Complete Streets State Laws & Provisions: An Analysis of Legislative Content and The State Policy Landscape, 1972-2018

This article, published in the *Journal for Transport and Land Use*, conducts a comprehensive scan⁴ and analysis of Complete Streets statutes adopted at the state-level. The article highlights four common provisions that have important connections to policy implementation; Complete Streets statutes can:

- Require local governments to include accommodations for pedestrians and cyclists in local plans.
- Clarify that the law applies to all roads to ensure maximum reach.
- Require a minimum funding allocation for pedestrian and bicycle accommodations to ensure that state funding supports these efforts.
- Explicitly state goals of network connectivity to provide continuous, safe, and interconnected pathways to goods and services.

⁴ *Journal of Transport and Land Use* (2019). <https://www.jtlu.org/index.php/jtlu/article/view/1512>

1.2.4. North Carolina Department of Transportation

The North Carolina Department of Transportation (NCDOT) recently updated its Complete Streets policy⁵ in 2019, requiring planners and designers to consider and incorporate multimodal facilities in the design and improvement of all appropriate transportation projects throughout North Carolina.

NCDOT Complete Streets Implementation Guide and Workshops

NCDOT published a *Complete Streets Implementation Guide*⁶ in 2020, which outlines the following key aspects for program implementation:

- **Planning:** To ensure that Complete Streets projects are properly planned for and prioritized, NCDOT utilizes a Complete Streets Project Sheet, which documents multimodal facilities evaluated within roadway projects and is submitted during the strategic prioritization process.
- **Project Development:** The Complete Streets project sheet is then carried forward during project development to assist in determining appropriate facilities to be included during the design alternatives.
- **Resurfacing and Maintenance:** NCDOT staff meet with local agencies to review scheduled roadway improvements and identify opportunities to include Complete Streets improvements, such as striping, markings, and signage.
- **Cost Share:** NCDOT policy dictates that NCDOT will cover the full cost of Complete Streets projects identified in locally-adopted plans, or will engage in a cost share for multimodal projects that are not in locally adopted plans but have been identified as a need through later project scoping.
- **Design Guidance:** The NCDOT *Legacy Roadway Design Manual*⁷, most recently published in 2023, contains guidance on multimodal design and serves as the authoritative reference for Complete Streets design.

⁵ North Carolina Department of Transportation. Complete Streets Policy (2019).
<https://connect.ncdot.gov/projects/BikePed/Documents/CS%20Policy%208.28.19.pdf>

⁶ North Carolina Department of Transportation. Complete Streets Implementation Guide (2020).
<https://connect.ncdot.gov/projects/BikePed/Documents/Complete%20Streets%20Implementation%20Guide.pdf>

⁷ North Carolina Department of Transportation. Legacy Roadway Design Manual (2023).
<https://connect.ncdot.gov/projects/Roadway/Pages/Roadway-Design-Manual.aspx>

- **Administration:** NCDOT has a Complete Streets Core Technically Team (CTT), composed of representatives of various offices, who are responsible for overseeing program implementation and updates.

To educate staff and community members and better facilitate the implementation of the Complete Streets policy, NCDOT also conducted a series of workshops across the state in May and June 2019. The workshops were intended to engage all stakeholders about Complete Streets, establish relationships and build support between partner organizations, and equip participants with the necessary tools to engage in transportation decision-making.

1.2.5. Minnesota Department of Transportation

The Minnesota Department of Transportation (MnDOT) most recently updated its Complete Streets policy⁸ in 2023, with several key features. First, within capital program priorities, the policy encourages districts to give higher priority to opportunities which will promote the walking, biking and transit trips as a percentage of all trips.

Second, the policy directs the design process to be conscious of speed outcomes where vulnerable populations are present, while encouraging the use of “design speed” as a target rather than a “maximum safe speed.”

Finally, MnDOT directs the project sponsors and policy owners to track performance measures that contribute to Complete Streets targets.

1.2.6. California Department of Transportation

California Department of Transportation (Caltrans) adopted a Complete Streets policy⁹ in 2021. The policy represents a concrete procedural shift, where all projects funded or overseen by Caltrans are expected to provide reasonable facilities for walking, biking, and transit unless exceptions are documented and approved.

The policy places an emphasis on equity by dictating that Complete Streets projects should prioritize underserved communities that have been historically harmed and segmented by the transportation network.

⁸ Minnesota Department of Transportation. Complete Streets policy (2023). <https://www.dot.state.mn.us/policy/operations/oe004.html>

⁹ California Department of Transportation. Complete Streets policy (2021). <https://dot.ca.gov/programs/esta/complete-streets/resources>

To assist in implementation, the policy directive lays out the roles and responsibilities of various relevant departments ranging from planning to maintenance to project delivery. For example, the *Strategic Highway Safety Plan*¹⁰ (SHSP) outlines pedestrian safety as a priority area, including an action to “develop quick builds and demonstration project guidance to advance Complete Streets elements for multimodal user safety.”

California has outlined that while Local Road Safety Plans (LRSP) and Complete Streets have different objectives (LRSP analyzes crash problems, while Complete Streets supports mobility for all users), a Complete Streets plan might be one action defined in an LRSP. The idea is to integrate law enforcement, public works, hospitals, road maintenance, and education—all toward a vision of zero deaths.

Caltrans also provides a dashboard¹¹ for Complete Streets Action Plan which tracks Complete Streets actions implemented in the past years. The dashboard is updated on a quarterly basis.

1.2.7. South Carolina Department of Transportation

The South Carolina Department of Transportation (SCDOT) adopted a Complete Streets policy¹² in 2021. The Complete Streets policy requires SCDOT to work with the state's regional transportation planning partners and regional transit providers to identify and include walking, bicycling and transit needs as part of their regional visioning plans. Funding for these accommodations is to be included in the budget for each project if warranted on the individual project and in accordance with the regional plans.

As part of the policy directive, SCDOT has adopted several design publications from authoritative sources such as the American Association of State Highway and Transportation Officials (AASHTO), the Federal Highway Administration (FHWA), and National Association of City Transportation Officials (NACTO) as references for designing walking, cycling, and transit facilities.

Additionally, the policy directive establishes a Complete Streets Council, led by the Deputy Secretary for Intermodal Planning and which includes other members of

¹⁰ California Department of Transportation. Strategic Highway Safety Plan. <https://dot.ca.gov/programs/safety-programs/shsp>

¹¹ Complete Streets Action Plan Dashboard. <https://dot.ca.gov/programs/esta/complete-streets/csap>

¹² South Carolina Department of Transportation. Complete Streets policy (2021). <http://info2.scdot.org/SCDOTPress/PublishingImages/DD%2028%20Complete%20Streets.pdf>

DOT staff, local government, and external stakeholders. The council is responsible for facilitating ongoing improvements and discussion of the Complete Streets implementation in the state.

The SCDOT will provide training regarding the Complete Streets policy, as well as the subsequent revisions to the Engineering Directives and the South Carolina *Roadway Design Manual* to fully implement the directive.

1.2.8. Tennessee Department of Transportation

Planning and Design

To better plan for the incorporation of multimodal facilities into transportation projects, the Tennessee Department of Transportation (TDOT) published the *Multimodal Project Scoping Manual*¹³. One key component of the manual is the identification of opportunities for multimodal projects within routine resurfacing projects. While new capital projects may take time to traverse from project development to actually breaking ground, routine maintenance provides valuable opportunities for the addition of bike lanes or restriping. To increase the visibility for these opportunities, TDOT switched from a one-year list of upcoming projects to a three-year list of upcoming projects, allowing more time to solicit input and plan for inclusion of multimodal improvements.

Additionally, TDOT recently published a Multimodal Design chapter¹⁴ within its *Roadway Design Guidelines*, providing important resources and guidelines for engineers to design multimodal facilities.

Multimodal Suitability Index

To operationalize its commitments to Complete Streets, TDOT has developed a “Multimodal Suitability Index,”¹⁵ which employs the use of alternative performance measures to evaluate multimodal projects. Instead of scoring projects primarily based on level-of-service, the new index takes into account safety measures such as crash frequency for cyclists and pedestrians, as well as the project area’s potential demand for pedestrian traffic based on proximity to jobs and schools. The

¹³ Tennessee Department of Transportation. Multimodal Project Scoping Manual. <https://www.tn.gov/content/dam/tn/tdot/roadway-design/documents/additional-resource/TDOT%20Multimodal%20Project%20Scoping%20Manual%20-%20041018.pdf>

¹⁴ Tennessee Department of Transportation. Roadway Design Guidelines. Chapter-3 Multimodal Design. https://www.tn.gov/content/dam/tn/tdot/roadway-design/documents/design_guidelines/DG-C3.pdf

¹⁵ <https://smartgrowthamerica.org/how-tennessee-dot-is-turning-complete-streets-policy-into-practice/>

index incorporates an equity component, measuring the project location's share of low-income and non-white populations, people ages under 18 and over 64, and share of households without vehicle access.

1.2.9. Florida Department of Transportation

In 2014, the Florida Department of Transportation (FDOT) adopted a Complete Streets policy¹⁶. FDOT also partnered with Smart Growth America to create the *Complete Streets Implementation Plan*¹⁷ that identified the necessary policy, procedures, and guidance to be updated. The plan outlined the following strategies for implementation:

- **Revise guidance, standards, manuals, policies, and other documents.** FDOT identified several documents, including the *Plans Preparation Manual*, *Uniform Standards for Design, Construction, and Maintenance for Streets and Highways* (Florida Greenbook), and *Traffic Engineering Manual*. The implementation plan includes an appendix with chapter-by-chapter recommended revisions to several key documents.
- **Update decision-making process.** FDOT identified the need to integrate Complete Streets into the objectives of the *Florida Transportation Plan*, as well as the *Strategic Intermodal System (SIS) Policy Plan*. This strategy also includes updating decision-making criteria, including updated measures used to evaluate District Office performance to encourage interpretations of rules and statutes that support context-sensitivity and flexibility in funding and design.
- **Modify approaches for measures performance.** This strategy includes moving beyond measures of capacity and mobility, and instead considering goals of safety, access, economic competitiveness, environmental sustainability, public health, and social equity. As such, this strategy seeks to develop new Complete Streets performance measures and expand existing measures, while creating the necessary partnerships to address data gaps.

¹⁶ Florida Department of Transportation. Complete Streets policy. (2014). https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/roadway/completestreets/000-625-017-a.pdf?sfvrsn=5f76a980_2

¹⁷ Florida Department of Transportation. *Complete Streets Implementation Plan* (2015). https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/roadway/completestreets/files/final-csi-implementation-plan.pdf?sfvrsn=96979438_2

- **Manage internal and external communication and collaboration during implementation.** This strategy includes establishing a leadership structure for Complete Streets implementation, as well as a central website for information-sharing.
- **Provide ongoing education and training.** This strategy includes the development of a Complete Streets training framework, which seeks to offer training across various formats including in-person workshops, webinars, and computer-based training courses.

1.2.10. Massachusetts Department of Transportation

In 2014, the Massachusetts Department of Transportation (MassDOT) created the Complete Streets Funding Program¹⁸ with the goal of incentivizing municipalities to adopt Complete Streets policies and approaches. Equity was also a focus of the program, with one-third of the funding set aside to Massachusetts municipalities below the median household income.

MassDOT's program contains a tiered structure for funding and assistance. Under Tier 1, municipalities must develop and pass a Complete Streets Policy, as well as attend a training. Under Tier 2, MassDOT provides up to \$38,000 for the development of a Complete Streets prioritization plan. Finally, under Tier 3, municipalities are eligible to receive up to \$400,000 for construction funds to implement Complete Streets projects identified in their prioritization plan.

¹⁸ Massachusetts Department of Transportation. *Complete Streets Funding Program Guidance* (2022). <https://gis.massdot.state.ma.us/CompleteStreets/Content/Docs/Complete%20Streets%20Funding%20Program%20Guidance%20and%20Appendix.pdf>

2. INTERVIEW SUMMARY

A series of internal NJDOT and external interviews were conducted to learn more about the current state of the NJDOT Complete Streets policy and implementation, as well as notable gaps and best practices for consideration. A survey was distributed to internal NJDOT staff and external stakeholders to help understand suggestions and attitudes surrounding the Complete Streets update process. The following section provides a synthesis of the main points raised during the interviews.

Interviews were held with the following NJDOT units, external partners, and one state DOT:

- NJDOT Bureau of Safety, Bicycle and Pedestrian Programs (BSBPP)
- NJDOT Division of Project Management (DPM)
- NJDOT Planning, Multimodal, and Grants Administration Unit (PMGA)
- NJDOT Capital Program Management Unit (CPM)
- NJDOT Finance and Administration Unit (FA)
- NJDOT Transportation Operations Systems and Support Unit (TOSS)
- Michael Baker and Sam Schwartz (MBSS)
- American Council of Engineering Companies (ACEC)
- Alan M. Voorhees Transportation Center (VTC)
- Minnesota Department of Transportation

2.1. Project Scoping and Development

- The exemption policy is easy to abuse, particularly when exemptions can be issued if the timing of the project can be compromised. - TOSS
- There is a worry that granting a Complete Streets exemption for a project meant that the project did not need to address any Complete Streets elements, rather than exempting it from certain elements. - BSBPP
- There are too many loopholes, and it is too easy for a subject matter expert to decline to do something that would, for example, slow down traffic. - MBSS

- Even though Complete Streets is an important goal, it has become a “check-the-box” type of process. Perhaps there is a way to establish a Complete Streets assessment (like a risk assessment) which is considered earlier in the process, so it isn’t simply a checklist. - ACEC
- There is a feeling that Complete Streets elements are considered too late in the process for there to be reasonable action or consideration. - VTC
- Make sure that the public meeting happens earlier in the process so there is greater opportunity for public inputs in the alternatives, rather than already having our minds made up. - MBSS
- When BSBPP has proposed pedestrian safety improvements such as sidewalks or curb extensions, traffic engineering often says no since these improvements introduce new design elements. - BSBPP
- While there is a process in place for full-scope projects, limited scope projects remain a major challenge for incorporation of Complete Streets. The goal of the CPM is to deliver a project on time and on budget. When other elements are added to the limited scope project, it can slow down the ability to respond to the pressing need. - CPM
- For limited scope projects, we want to avoid projects such as sidewalks, which include right-of-way acquisition and permitting that can take over a year. - CPM
- Accelerated Right-of-Way (ROW) Process for Sidewalks that includes Administrative Determination of Value (ADV) was mentioned as a policy that allows for expedited ROW acquisition (7 or 8 months, instead of 14 months). - CPM
- There should still be the ability to consider different elements at different levels or tiers – striping and signage at one level, and things like sidewalks at another level. - CPM
- Each project should be examined; if there is a need based on management system data, options could include very low impact treatments, or if higher impact interventions are needed, we could initiate a new project to address those needs. - PMGA
- Over the last few months, CPM has been working to develop a limited scope checklist for Complete Streets. - CPM

- Staff will do things if they are mandated to do so. Therefore, if there is a tiered standard for limited scope resurfacing project, it will give people the incentive and structure to consider Complete Streets elements. - TOSS
- If under a limited scope project, there is an identified pressing need for a Complete Streets element, there should be a process to either incorporate it into the project or initiate a new project. - CPM
- NJDOT is currently reviewing the incorporation of Complete Streets into maintenance projects. Understand that TDOT uses a three-year planning timeline (while NJDOT uses a two-year schedule), and that is a best practice that should be considered. - BSBPP
- Currently, since Highway Safety Improvement Program (HSIP) funding is supposed to be for reducing fatalities, only hotspot locations are reviewed. However, this approach does not factor in accessibility, since missing links often do not have a history of crashes. - BSBPP
- If a project is proposed that would have important connectivity benefits, it is often hard to move that project forward because there is no centralized system to monitor or measure connectivity. - BSBPP
- There are currently no metrics for “latent demand” for bicycle and pedestrian travel. - MBSS
- BSBPP have created a systematic analysis for pedestrians for high-risk intersections. - BSBPP
- Goals are often related to level-of-service (LOS) or volume of traffic, but how do we create other goals equivalent to the LOS goal? - MBSS
- LOS can also be defeated as a rationale through public advocacy or master planning, where certain improvements are justified.
- One of the main challenges when implementing CS is you are often dealing with local roads, but it becomes a challenge when you have to deal with arterial streets that are not conducive to Complete Streets. - PMGA
- There should be a process where, if a CS exemption is granted on a state road, it can initiate projects on county or local roads in order to fulfil the holistic CS policy. - MBSS

- In a scenario where a HSIP-funded project has a large traffic volume with a mandated CS review, it can be almost impossible to find a way to establish a bicycle facility on that roadway; so, the option becomes either asking for CS exemption or finding an equal route, which may not be feasible. Consideration should be given to funding agreements so that CS requirements can be fulfilled on local municipal roadways where CS is not able to be implemented on state roadways. - ACEC
- In discussion of working with developers on incorporating Complete Streets, it is noted that the access code regulates vehicles trips, but not bicycle or pedestrian trips. If NJDOT wants to regulate pedestrian trips within the DOT's right-of-way, the access code is going to have to be amended to assert that right. - CPM
- MnDOT has a legislative requirement to have a scoring system for project selection; however, CS is not a selection criteria, it is a process criteria that occurs after a project has been selected. - MnDOT

2.2. Design Manuals and Guidance

- There is some staff confusion over the usage of the 2017 Complete Streets Design Guide (CSDG) compared to the *Roadway Design Manual* (RDM). The last time there was an attempt to incorporate the CSDG into the RDM, it took an exorbitant amount of time. - BSBPP
- There is a general sense that engineers will look at the RDM but will not look at the CSDG. Moreover, at the very least, there should be an effort to strengthen the reference and links to the CSDG in the RDM - CPM
- The current RDM is based on AASHTO 2011 or earlier, but AASHTO 2018 has gone a long way to embrace flexible design. Furthermore, the RDM is a legacy document, and there should be a better opportunity to strengthen the ties between RDM and other national and federal documents, particularly because it can be cumbersome for NJDOT to keep updating the RDM. - ACEC
- One suggestion is to more broadly “dismantle” the RDM and point towards guidance documents that refresh themselves more regularly. - MBSS
- CSDG should give examples or case studies on how state DOTs deal with conflicting challenges on incorporating a Safe System Approach on highways and arterials, where it may be harder to lower speeds. CSDG should have not

just roadway typology (local versus arterial) but also place-based typologies such as urban versus rural. - PMGA

- CSDG has too much emphasis on local roads, so perhaps something can be developed that supplements. - PMGA
- FHWA has developed a Bikeway Selection Guide that supports bikeway facility selection based on context (urban versus rural) and offers guidance on next-best facility types. The endorsement of these kinds of guides could be beneficial since they offer a clear and simple blueprint for selecting treatments. - ACEC
- MnDOT notes that the NACTO *Urban Street Design Guide* is great, and there is not anything in it that goes against the AASHTO Greenbook.

2.3. Funding Mechanisms

- Currently, in the local aid program, NJDOT awards points to municipalities that have a CS policy. That has helped get a lot of towns on board. Perhaps funding could be tied more specifically to projects that incorporate CS checklists or considerations. - ACEC
- We should find ways to package money to encourage municipalities to include these types of improvements. - MBSS
- There often isn't enough funding for municipalities to implement CS projects. In the municipal aid program, localities mostly focus on new roadways or roadway maintenance and less about bicycle and pedestrian accommodations. - PMGA
- There could be more of an educational effort for towns to understand they can do more with the grants. - PMGA
- There is currently an initiative happening to fund local highway safety plans at the county level but need to line up resources for local communities to assess issues for bicycle/pedestrians. - PMGA
- It would be great to have a local safety line item. - FA

2.4. Performance Metrics and Tracking

- There are no formal metrics for tracking Complete Streets performance. While there is currently a safety management system, it primarily tracks high crash

locations. It does not track DPM projects where Complete Streets countermeasures have been implemented. - BSBPP

- Currently, it is hard to track Complete Streets implementation. While it is easy to stripe a road, it is often hard to track because it is part of a bigger project. Additionally, the lack of lighting is a major reason for bicycle crashes, but it is not something that is currently tracked. - VTC
- Other metrics like pedestrian beacons, roundabouts, and striped bike lanes would be great. - VTC
- It would be great to have performance measures, but it is not as if there is easy access to a GIS toolbox to look across a number of factors for existing and planned facilities. This means that every time a project is reviewed, everything needs to be assembled from scratch. - MBSS
- MnDOT has created a tool called Priority Areas for Walking Study (PAWS) that resulted from their state's pedestrian plan. - MnDOT

2.5. Training, Outreach, and Communication

- There should be a single webpage that has links to all Complete Streets materials – including guidelines, checklists, and the policy itself. - TOSS
- The Complete Streets Summit has been helpful in getting municipal representatives together and sharing best practices. - PMGA
- There has been some Complete Streets training with BSBPP as the lead, which has worked well because county and municipality representatives attend, as well as other consultants. However, it could be good to have a “canned training” available on-demand. - PMGA
- One idea is to host a bi-yearly training that allows consultants to come and discuss best practices for CS implementation. - MBSS
- It is important to be able to reach the county engineers because the county roads are an area of opportunity. - PMGA
- Partnering with the Local Technical Assistance Program (LTAP) would be a good way to engage in training and outreach. - VTC

- MnDOT had two- to three-day trainings that included a field walk scoping exercise. – MnDOT

3. COMPLETE STREETS GAP ANALYSIS

The best practice desk scan and stakeholder interviews identified a series of opportunities related to NJDOT Complete Streets policy and implementation. Cambridge Systematics utilized these findings and identified gaps to inform the processes and documents for NJDOT to update a holistic Complete Streets program.

The following section provides the review of these gaps, including NJDOT business processes impacted by Complete Streets, integration points with those processes, implementation guidance throughout the project delivery process, and essential responsibilities and roles. Recommendations on component updates are also provided, such as updates to policy, guidance, and resources related to implementing Complete Streets in New Jersey.

3.1. Complete Streets Policy

The NJDOT Complete Streets policy has not been updated since its passage in 2009. As such, internal interviews with NJDOT staff and best practice scans served to highlight areas in the policy that require updates or improvements. The following gaps in the Complete Streets policy were identified during this process.

Update Complete Streets coordination. States including Minnesota, North Carolina and Florida have created dedicated Complete Streets implementation teams to ensure continued coordination for policy rollout and implementation. These have identified specific roles and responsibilities across the agency. NJDOT is establishing a team under the BSBPP to aid in timely response to Complete Streets implementation requests. However, the organizational structure for routine coordination on Complete Streets progress could be further formalized, including the potential for a new designated hire, with the goal to create a framework for routine coordination relating to the Complete Streets policy and implementation.

Integrate FHWA guidance. In 2022, FHWA published a Report to Congress¹⁹ on Complete Streets efforts, goals, challenges, and opportunities at the federal level. The new guidance identifies several areas of opportunity relating to the safety of all road users, including rigorous safety assessments during project concept development, adoption of standards and guidance that promote the safety of all road users, and

¹⁹ FHWA, March 2022. Complete Streets Report to Congress
<https://highways.dot.gov/sites/fhwa.dot.gov/files/2022-03/Complete%20Streets%20Report%20to%20Congress.pdf>

improved data collection and analysis. NJDOT may ensure consistency between its policy and implementation practices during project delivery with recent federal guidance.

Review exemptions policy. Internal NJDOT interviews included several recommendations for reviewing and updating the exemptions sections of the Complete Streets policy. First and foremost, several staff felt it was too easy to get a Complete Streets exemption. In particular, exemption number five in the current Complete Streets policy, dictates that exemptions could be granted if “the safety or timing of a project is compromised by the inclusion of Complete Streets.” It was recommended that the exemption list be reviewed to ensure the criteria are not too strict, but not too lenient. This could be restructured through the development of a tiered system, which would not replace the need for exemptions, but instead provide more clarity regarding specific considerations to be made following evaluation of each constraint, as well as the flow of policy through different project avenues or NJDOT units. Examples of the tiered approach, such as moving to striping and signage when constraints do not allow for the highest tier treatments (e.g., shared use paths or sidewalks), are discussed in more detail below. Additionally, NJDOT staff suggested that exemptions should be recommended and flagged by Managers and approved at the Director Level (CPSC) in order to streamline the process. NJDOT staff would still be responsible for briefing and following guidance from their appropriate Assistant Commissioner.

Explore the potential of initiating Complete Streets on adjacent county local roads, when an exemption occurs on state roads. It was noted that while many exemptions are justifiable on state roads (e.g., arterial roads with high traffic volumes that are unable to accommodate safe bicycle facilities), there should be efforts to examine potential Complete Streets implementation on adjacent county or local roadways to aid in safety and connectivity. This effort would be unique from the current local aid policy, which grants points to municipalities which have passed Complete Streets policies. Additional consideration could be given to processes, agreements, or newly funded programs that allow for Complete Streets projects on adjacent county or local roadways to maintain the cohesiveness of a statewide Complete Streets effort. This new process would enable project areas needing Complete Streets improvements to receive possible treatments on nearby local roads when the state facilities are not conducive to appropriate accommodations.

3.2. Complete Streets Assessment

During internal interviews, several participants noted the limitations of the current approach for evaluating Complete Streets in the capital delivery process, particularly

related to limited scope projects. The following gaps were noted during discussions surrounding this topic.

Formalize a “tiered standards” approach. NJDOT units selected “Identification of scalable approaches, from limited to comprehensive scopes” as their highest primary area of interest related to Complete Streets assessment in the preliminary survey. In response to the challenges presented by limited scope projects and exemptions, NJDOT staff expressed support for a “tiered” approach to Complete Streets considerations and exemptions. The tiered approach would formalize the process currently utilized for considering alternative Complete Streets improvements, beyond the preferred treatment, on various types of limited scope and full-scope projects. Decision trees could help guide the identification of where Complete Streets elements would fit based on the constraints of the given project, including specific project elements and context-sensitive constraints, avoiding the existing notion that no scale-appropriate bicycle or pedestrian accommodations can be implemented, and an exemption should be requested. For example, if the preferred treatment is not feasible due to design criteria, schedule, or cost, the decision tree would guide the decision-making process towards implementing countermeasures in the next tier or utilizing other branches of the project delivery process (e.g., local aid or local assistance), similar to the Route 26 limited scope resurfacing which provided an opportunity through CPM to add bike lanes. This approach, as well as more explicit instruction and guidance on the tiered approach, could create more opportunities for Complete Streets consideration for project managers.

Route 26 Limited Scope Resurfacing

A limited scope resurfacing project was initiated to extend the service life of the roadway pavement on NJ Route 26. Bike lanes were added to the adjacent roadways, and it was noted that this would create a gap in the bike facility network. As a result, NJDOT assessed the feasibility of exclusive bike lanes and travel lanes along Route 26.

Provide handbook of context-sensitive solutions and right-sized options. In parallel with the creation of a tiered-standard approach, NJDOT staff noted the desire to update Complete Streets assessments and guides to be clear and straightforward. NJDOT supports the development of a handbook which provides project managers a clear toolbox of Complete Streets options to consider based on the project context, ensuring the safety of all users. The handbook would include examples of effective implementation on various levels of projects, including quick-fix projects such as the Route 26 limited scope resurfacing which provided an opportunity to add bike lanes. These types of solutions can be clearly laid out to practitioners to execute on Complete Streets goals.

Develop a limited scope checklist. The current NJDOT Complete Streets policy does not give explicit guidance on limited scope projects, and therefore limited scope projects have been omitted from the Complete Streets process. However, limited scope projects can serve as an additional opportunity for the integration of Complete Streets elements and facilities. Other states, such as North Carolina and Tennessee, have identified routine maintenance projects as a key pathway for Complete Streets consideration. As such, a limited scope checklist should be developed to provide a formal procedure for implementing Complete Streets in these types of projects, while ensuring the ability to maintain the project's budget and schedule. This checklist can be integrated as part of the tiered standard approach to allow for various levels of engagement.

North Carolina Department of Transportation (NCDOT) Complete Streets Implementation Guide:

"Scheduled Resurfacing: Each year, a county-level resurfacing schedule is developed within each NCDOT Division. NCDOT Division staff will meet with local agencies to review the scheduled roadways and identify locations to evaluate Complete Streets improvements. These may include striping, markings and associated signage."

3.3. Roadway Design Manual and Other Guidance Document Updates

One of the most frequently mentioned gaps during the interviews was the need to update the *Roadway Design Manual* (RDM) to better align with Complete Streets concepts and goals. Additionally, staff expressed confusion over the usage of the 2017 Complete Streets Design Guide (CSDG), a planning-level document, compared to the *Roadway Design Manual*, which contains design standards. Currently, there is a sense that the RDM acts as a standalone document for engineers, and that without stronger linkages, Complete Streets concepts may be omitted or ignored. However, there were several different ideas and proposed approaches for achieving this goal.

Create stronger links to the New Jersey Complete Streets Design Guide. One proposition from NJDOT and the consultant teams was to create a stronger and more formalized link to the 2017 New Jersey Complete Streets Design Guide. This could include the drafting of language that more explicitly makes the connection between the RDM and the CSDG. Another approach discussed would be to incorporate language, sections, or chapters of the CDSG directly into the RDM.

Directly reference federal documents. The RDM could also make direct references to other national guidance documents, which not only contain best practices in Complete Streets design and implementation, but also are updated more frequently. This approach would allow the RDM to effectively "self-update" with living documents and reduce the administrative burden of undertaking language updates internally.

Incorporate design guidelines for place-based typologies.

Interviewees discussed the benefit of providing design guidance based on a variety of contexts. The design manual could provide guidance not only for roadway typology (arterial versus local road), but for other place-based typologies (urban versus suburban versus rural). Creating these typology-level resources is in line with best practices of other peer states, such as the Florida Department of Transportation (FDOT)

guidance aligning with their Context Classification System. For example, special consideration could be given to arterials or other contexts using recent FHWA guidance²⁰ as a key source.

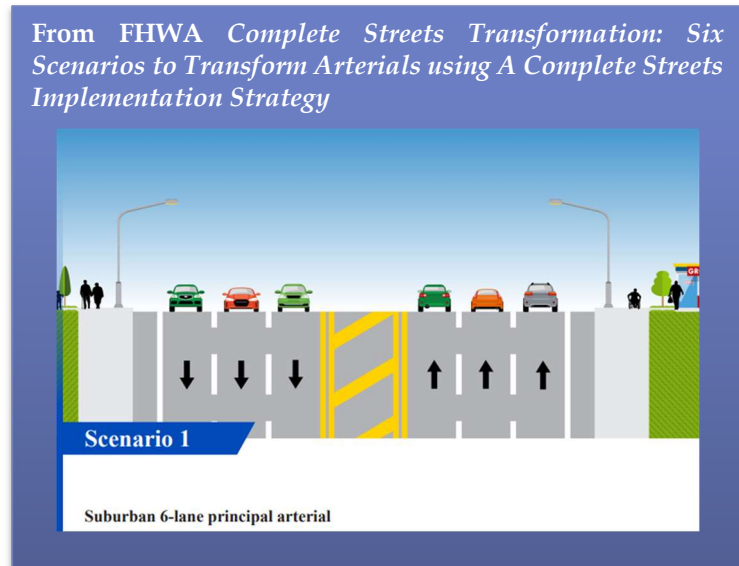


Figure 1: FHWA Complete Street Implementation Strategy Scenarios

3.4. Alternative Funding Avenues for Complete Streets

During internal NJDOT interviews, it was noted that Complete Streets improvements continue to face challenges getting funding beyond NJDOT Division of Project Management (DPM) Highway Safety Improvement Program (HSIP) funded projects. Additionally, there is a sense that more can be done to fund and incentivize multimodal projects at all levels. The following gaps were identified during these discussions.

Clarify channels for project initiation that may come from a Complete Streets evaluation when a Complete Streets element does not make it into a current project. Currently, there is no monitoring method for instances where projects are unable to incorporate certain Complete Streets elements, even though a need was identified during project review. A process could be created to review these instances and initiate opportunities for a new project to address those needs. For example, during a limited scope process, if a “high impact” intervention is identified, but severely

²⁰ FHWA, March 2022. Complete Streets Transformations. <https://highways.dot.gov/complete-streets/complete-streets-transformations-six-scenarios-transform-arterials-using-complete>

impedes the delivery of the limited scope project, then a problem statement could be generated as it relates to the identified need, creating a new opportunity for the project.

Explore other avenues for point allocation in Local Aid grant programs as it relates to Complete Streets. Currently, through the Local Aid grant program, NJDOT awards points to municipalities who have adopted Complete Streets policies. However, NJDOT could explore additional ways to allocate points when scoring grant applications or to prioritize projects/efforts directly tied to Complete Streets implementation in support of aforementioned policy goal of providing more opportunities for multimodal facilities on county and local roadways. Peer states such as Massachusetts have created a tiered funding program, which provides various levels of funding based on a locality's progress in Complete Streets policy adoption and project prioritization.

3.5. Maintenance and Monitoring

To measure progress and evaluate the success of a policy, proper data collection, tracking, and evaluation must take place. While other peer states have established systems for tracking and monitoring, several NJDOT staff noted areas where NJDOT could better collect and monitor data in pursuit of successful Complete Streets implementation.

Explore a three-year timeline for maintenance projects. Internal interviews highlighted that while NJDOT operates on a two-year planning horizon for Operations maintenance projects, other peer states have transitioned to a three-year planning horizon for similar projects. Switching to a three-year timeline for Operations maintenance projects could increase visibility of these projects and provide greater opportunity to consider Complete Streets facilities or elements.

Create systems of measure for accessibility and safety. Currently, the BSBPP is in the process of conducting system analysis for pedestrian risk to understand the probability of a crash happening at certain locations. However, there is no system in place to evaluate the connectivity benefits of a particular project. In one interview, an example was given where a proposed multimodal facility would have helped connect other facilities and close gaps, but there was no formal system in place to measure and track that benefit. Therefore, systems and processes could be put in place to measure and track multimodal connectivity as it relates to project screening for formal incorporation into the evaluation process. Tennessee DOT has developed a Multimodal Suitability Index, which offers an alternative to scoring based solely on level-of-service and a metric for "potential demand for pedestrian traffic" based on the proximity to jobs and schools.

Create a tracking system for where Complete Streets projects have been implemented. In internal interviews, it was also noted that there is no system in place to know where Complete Streets measures have been implemented. Systems and frameworks could be set up to monitor project implementation and evaluate the progress of Complete Streets policies and practices. NJDOT could develop a tracking system of Complete Streets projects and related improvements.

Establish Complete Streets performance measures. Related to project implementation, no performance measures have been established for the Complete Streets policy. To measure the success of a Complete Streets policy, NJDOT could establish measurable performance targets. Peer states such as Minnesota have created annual performance snapshots which track several performance measures, including but not limited to pedestrian fatalities, pedestrian accessibility, and curb ramp condition. Additionally, FHWA has developed publications such as the *Guidebook for Measuring Pedestrian and Bicycle Performance Measures*²¹ and the *Transportation Alternatives Program Performance Management Guidebook*²² to help guide the process of establishing multimodal metrics.

3.6. Training and Outreach

Proper training and outreach remain a critical component of a successful Complete Streets policy. Several interview participants expressed the need for a centralized location for information and education, as well as training sessions accessible not just for NJDOT staff, but other local partners. The following gaps were identified as a result of these conversations.

Create a Complete Streets repository. Internal interviews noted that there is no central location where all Complete Streets materials can be found. Interviewees expressed the need for a central Complete Streets repository that is easily accessible for all NJDOT staff, utilizing the NJDOT website. This repository should include the policy, checklists, roadway design manuals, training materials, and other example implementation techniques. As such, the repository would act as a “one-stop shop” for

²¹ FHWA. Guidebook for Measuring Pedestrian and Bicycle Performance Measures. https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/performance_measures_guidebook/?_gl=1*14o7nf4*_ga*OTEzODI4OTAwLjE2ODg2NjEzODM.*_ga_VW1SFWJKBB*MTcxMjA3MTY1OS4yMy4wLjE3MTIwNzE2NjMuMC4wLjA.

²² FHWA. Transportation Alternatives Program Performance Management Guidebook. https://www.fhwa.dot.gov/environment/transportation_alternatives/performance_management/guidebook/tap_pm_guidebook.pdf

all Complete Streets information to be referenced by state and local agencies, as well as consultant practitioners assisting in implementation.

Provide a multi-tier training curriculum for all. Several internal interview participants noted a desire to have accessible training materials online. Notably, updates to existing training sessions are underway through BSBPP's on-call contracts. Interview participants noted the importance of reaching county and local professionals, including engineers and planners. Graduated curriculum based on complexity could be provided, as well as a variety of one-on-one, webinars, or recordings, for varying levels of Complete Streets and technical transportation knowledge. The creation of a holistic Complete Streets training curriculum through Resource Center(s) could be beneficial in providing education on the policy and making implementation more approachable and available to all.

3.7. Recommendations

Based on the gaps identified in the desk scan, survey, and interview process, Cambridge Systematics recommends the following actions to update for the NJDOT Complete Streets policy and implementation-related components:

- Hire and/or designate additional full time Complete Streets staff member(s) to facilitate routine coordination, updates, exploration of alternative avenues for project advancement within various units of the Department, and implementation of the Complete Streets policy. Staff member(s) will also support the updating of materials, creating and updating the central NJDOT Complete Streets website, tracking future Complete Streets performance measures, and other implementation support.
- Expand the exemptions policy to a tiered-standard approach which gives clear guidance on tiered Complete Streets considerations based on constraints of full-scope and limited scope project elements. Mandating this approach would incentivize considering different tiers of Complete Streets treatments based on factors such as cost, design, and schedule, thereby providing a more prescriptive approach to Complete Streets improvement considerations and a procedure to advance scaled treatments when the preferred treatment is not feasible. Clarify the process and develop decision trees for alternative avenues of Complete Street project advancement based on best practices highlighted by the National Center for Sustainable Transportation study.²³ Identify scalable approaches, from

²³ National Center for Sustainable Transportation. 2021. <https://ncst.ucdavis.edu/project/technology-review-and-roadmap-inventorying-complete-streets-integration-pavement-asset>

limited- to comprehensive-scopes by illustrating best practices applications of roadway design techniques, as prioritized by NJDOT units implementing Complete Streets.

- Develop a handbook of context-sensitive solutions which can be used by practitioners as part of a Complete Streets assessment.
- Formalize the process or a capital program line item that allows for Complete Streets projects to be explored on adjacent county or local roadways when projects are unable to be fulfilled on state roadways.
- Formalize routine coordination process to ensure the NJDOT Complete Streets policy and implementation undergoes regular review, with clear roles and responsibilities outlined.
- Update the NJDOT *Roadway Design Manual* to make more explicit references to the Complete Streets Design Guide and other federal design guidance documents. The choice of pathway to achieving this goal requires further discussion with relevant NJDOT staff to determine what approach will be most effective in terms of communication, clarity, and efficiency for implementation of Complete Streets designs.
- Adopt nationally recognized context-sensitive guidelines, including but not limited to the 2018 AASHTO *A Policy on Geometric Design of Highways and Streets*, NACTO *Urban Street Design Guide*, and FHWA's *Achieving Multimodal Networks: Applying Design Flexibility and Reducing Conflict*.
- Create a system of performance measures for Complete Streets project implementation.
- Develop a system of performance measures for multimodal facility connectivity.
- Revise the Local Aid point allocation system for grant application scoring to add credit for Complete Streets implementation or prioritization beyond an adopted policy.
- Clarify existing avenues for Complete Street project advancement (i.e., problem statements initiated by BSBPP identifying Complete Streets related needs; Local Aid-led projects, possible accommodations during limited-scoping DPM-led projects; and TOSS/CPM implemented “quick-fix” efforts, such as striping, markings and signage) for multimodal solutions identified in Complete Streets

assessments that are omitted in the final project implementation due to time, cost, or other impacts on delivery.

- Create a NJDOT Complete Streets online repository, containing the updated policy, checklists, design guidelines, trainings, case studies, and other educational materials.
- Develop a full spectrum Complete Streets training curriculum available to all, with the goal of having both external and internal NJDOT workshops in the short term and online webinars in the future.

4. COMPLETE STREETS COMPONENTS DEVELOPMENT

The gap analysis provided recommendations to update the NJDOT Complete Streets policy, develop a handbook, include a Limited Scope Complete Streets checklist, expand the exemptions criteria, and create a NJDOT Complete Streets online repository. The following section discusses the Complete Streets components that were updated or developed based on the above recommendations.

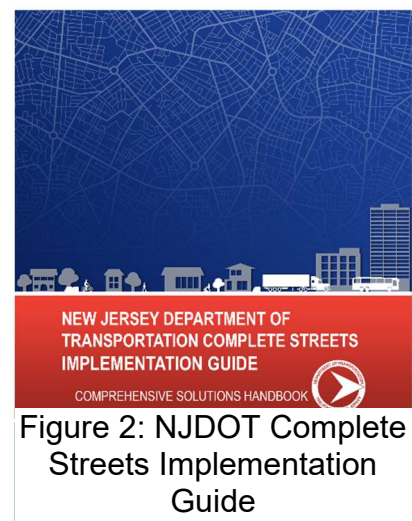
4.1. Updated Complete Streets Policy

The updated Complete Streets policy continues to address safe accommodations for all roadway users, including pedestrians, bicyclists, children, transit riders, freight delivery personnel, and individuals with disabilities. The updated policy expanded the policy compliance, which allows for elements to be exempt but not entire projects. Moreover, the Complete Streets Comprehensive Solutions approach follows a standardized process that ensures thorough consideration of Complete Streets solutions beginning at the earliest stages of the project delivery process. It considers a wide range of Complete Streets solutions (Type A, Type B, and Type C) for all user types. Additionally, the policy supports universal design concepts and establishes responsibility and accountability.

The updated policy provides a brief procedure for incorporating Complete Streets solutions in the projects. The Complete Streets policy also discusses relevant constraints, lists exempt project types, and identifies resources for implementation, noting the need for a comprehensive approach to consider all levels of potential accommodations and safety improvements.

4.2. NJDOT Complete Streets Implementation Guide - Comprehensive Solutions Handbook

The NJDOT Complete Streets Implementation Guide - Comprehensive Solutions Handbook (CS Handbook) presents procedures for implementing Complete Streets across all project types. The CS Handbook informs practitioners of possible constraints, the range of available solutions, and guidance on how to best implement the Complete Streets policy. This guidance includes the Comprehensive Solutions, Complete Streets checklists specific to applicable project delivery phases, descriptions of potential and appropriate improvements,



and other resources to assist in the implementation of the Department's Complete Streets policy.

The CS Handbook outlines the various Complete Streets solutions based on their category in the NJDOT Complete Streets policy framework (Type A, Type B, and Type C), provides visual examples of solutions in different contexts, and points to relevant guidance documents for use by project managers as they seek to identify and build context sensitive solutions. The CS Handbook also provides a hypothetical full-scope project example to help practitioners understand the process. The step-by-step walkthrough is provided to help practitioners identify appropriate Complete Streets solutions.

To facilitate the implementation of the Complete Streets policy and to ensure the policy is being enacted in line with its intent, the NJDOT staff will conduct routine coordination and monitoring of the Complete Streets implementation approach.

4.3. NJDOT Complete Streets Checklists

Complete Streets checklists are the documents intended to guide the selection of Complete Streets solutions that adhere to the Department's project delivery process. The checklists are used by project managers to record existing roadway conditions, Complete Streets policy considerations, and exemptions, as applicable. There are three Complete Streets checklists:

1. Concept Development (Full Scope and Limited Scope Projects) Checklist
2. Preliminary Engineering (Full Scope Projects) Checklist
3. Final Design (Limited Scope Projects) Checklist

The Complete Streets checklists apply to all NJDOT projects that undergo the Capital Project Delivery (CPD) process. Practitioners involved in different phases of the project delivery process may utilize the phase-specific checklists to identify Complete Streets requirements. These checklists are for use on projects during the Concept Development (full scope and limited scope projects), Preliminary Engineering (full scope projects), and Final Design (limited scope projects) phases to ensure Complete Streets accommodations are included in the project budget. The project manager or designer is responsible for completing the appropriate checklist and must engage the BSBPP via scope team and core group meetings to discuss bicycle and pedestrian accommodations and resolve issues prior to the advancement of a project through the CPD process, beginning with concept development.

4.4. Complete Streets Standard Operating Procedure

Two Standard Operating Procedure (SOP) charts were prepared to help practitioners understand the Complete Streets process. The first SOP details the process for Complete Streets compliance in the full scope and limited scope concept development phases. The second SOP demonstrates the process for Complete Streets compliance in the preliminary engineering phase (full scope project) or final design phase (limited scope project). The project manager should go through the process of Complete Streets compliance for each of the relevant concept development, preliminary engineering, and final design phases.

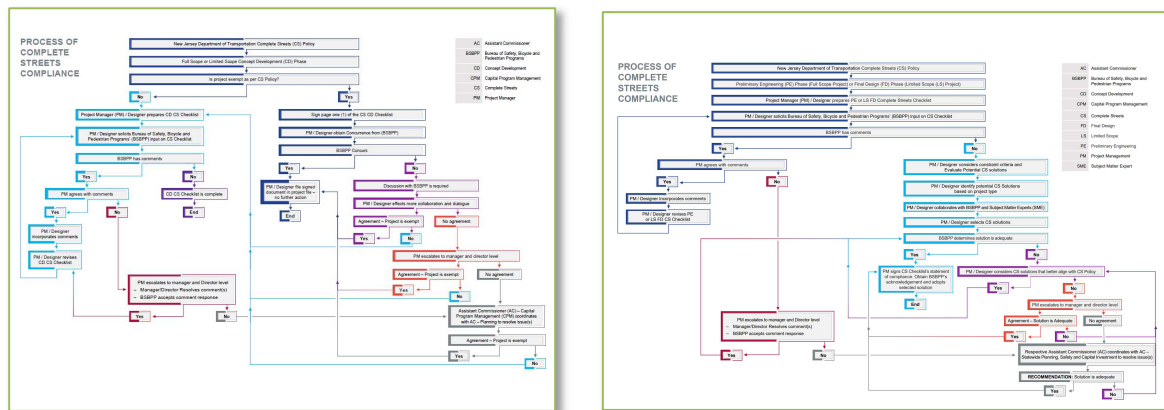


Figure 3: SOP For Concept Development (CD) Phase (Left) And Preliminary Engineering Phase Or Final Design Phase (Right)

4.5. Complete Streets Policy Training

BSBPP, with support from Cambridge Systematics, hosted an in-person Complete Streets policy training on October 12, 2023, at NJDOT headquarters for NJDOT staff to provide updates on the 2024 NJDOT Complete Streets policy. The training covered and provided clear instructions to help stakeholders understand the changes to the 2009 NJDOT Complete Streets policy, the updated checklists, the CS Handbook, and the Standard Operating Procedures. After the updated Complete Streets policy and other supporting documents are approved, the recording of the training shall be made available to the public on the NJDOT website.



Figure 4: Complete Streets training at NJDOT Headquarters

6. CONCLUSION

Complete Streets are designed to be and feel safe for all roadway users. Complete Streets are supported by policies and implementation strategies across all transportation projects and public agencies, to provide safe, connected, and equitable transportation networks. NJDOT finalized its initial Complete Streets policy in 2009. Since then, the policy has not been updated. Cambridge Systematics conducted a desk scan of best practices, interviews, and a comprehensive gap analysis exercise with internal and external stakeholders to identify and provide necessary updates to the Complete Streets components.

The 2009 NJDOT Complete Streets policy was updated to include expansion of the exemption criteria, provision of a wide range of Complete Streets solutions, standardized process for thorough consideration of Complete Streets solutions, and an additional checklist for limited scope projects. Additionally, a Complete Streets Implementation Guide - Comprehensive Solutions Handbook was developed to help practitioners with the Complete Streets approach. Cambridge Systematics also hosted an in-person Complete Streets policy training on October 12, 2023, to share Complete Streets policy updates with NJDOT staff.

All the updated components, including the Complete Streets policy, handbook, Complete Streets checklists, training recording, and other relevant resources are housed in an online central repository on NJDOT's website and will be available to the public once the updated policy has been approved.