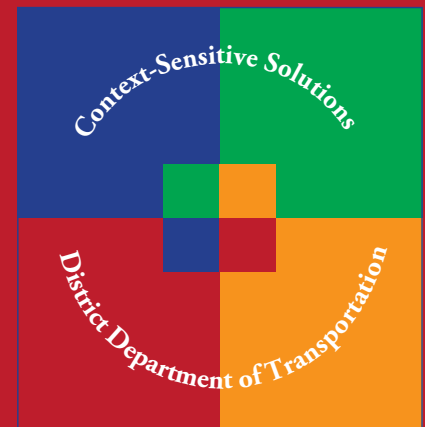


CHAPTER 13

CONTEXT-SENSITIVE SOLUTIONS

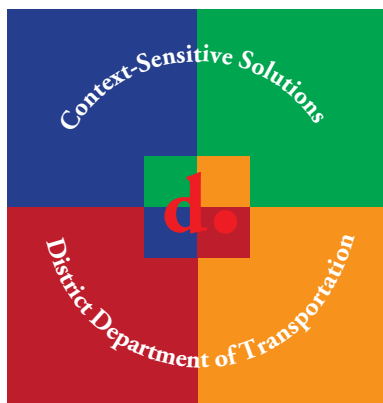
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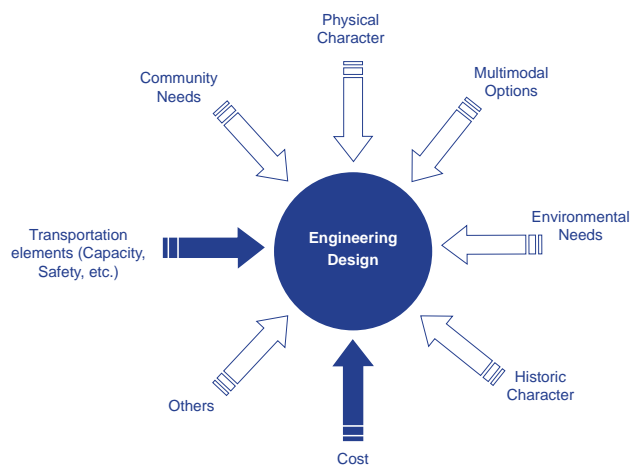
CONTEXT-SENSITIVE SOLUTIONS

A Context-Sensitive Solution (CSS), also called Context-Sensitive Design (CSD), is a collaborative, interdisciplinary approach that involves all stakeholders in developing a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic, and environmental resources while maintaining safety and mobility (Figure 13-1). CSS represents an approach that considers the total context within which a transportation improvement project will exist.



The District of Columbia Department of Transportation (DDOT) is committed to the advancement of CSS in all transportation projects. DDOT's objective is to improve the

environmental quality of transportation decision making by incorporating CSS principles in all aspects of planning and the project development process. CSS is an integral part of the DDOT project development process.



13.1 Summary of Key Legislation, Regulations, and Guidance

23 United States Code (USC) 109:

A design for new construction, reconstruction, resurfacing... restoration, or rehabilitation of highways on the National Highway System (other than a highway also on the Interstate

System) may take into account...[in addition to safety, durability, and economy of maintenance]...

- a. *The constructed and natural environment of the area*
 - b. *The environmental, scenic, aesthetic, historic, community, and preservation impacts of the activity*
 - c. *Access for other modes of transportation*
- AASHTO National Highway System Design Standards Policy 1994

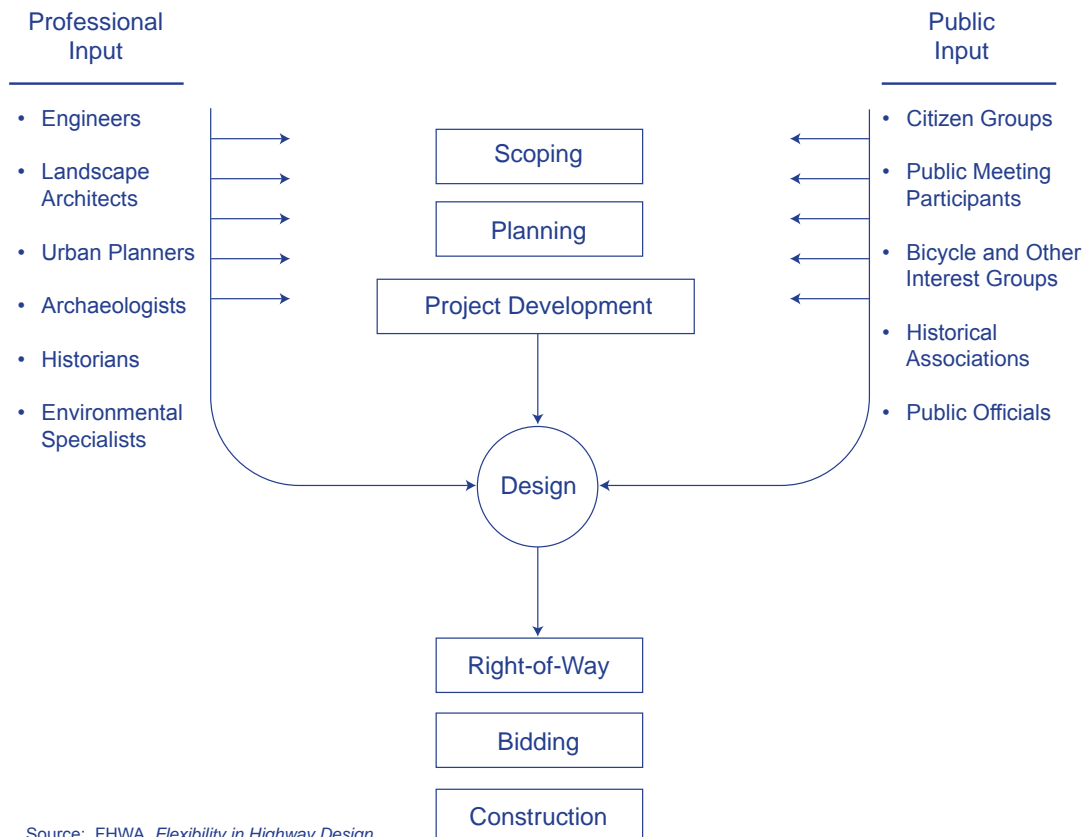
The American Association of State Highway Transportation Officials (AASHTO) adopted the National Highway System Design Standards policy on April 11, 1994. The relevant portion of this policy is:

BE IT FURTHER RESOLVED that the Member Departments of AASHTO will work through AASHTO's

design standards committees with (the U.S. Department of Transportation) USDOT and with interested parties on design criteria and a design process for (National Highway System) NHS routes that integrate safety, environmental, scenic, historic, community, and preservation concerns, and on standards which also foster access for bicycles and pedestrian traffic along with other transportation modes.

- 23 USC Section 109(c) (2) directs the Secretary of Transportation to consider three sources when developing criteria for the design for new construction, reconstruction, resurfacing (except for maintenance resurfacing), restoration, or rehabilitation of a highway on the National Highway System. These three sources are:

- The Policy on Geometric Design of Highways and Streets developed by AASHTO (The Green Book)



Source: FHWA, *Flexibility in Highway Design*

- The FHWA document Flexibility in Highway Design
- Eight Characteristics of Process to Yield Excellence and the Seven Qualities of Excellence in Transportation Design developed by CSS practitioners at the conference “Thinking Beyond the Pavement National Workshop on Integrating Highway Development with Communities and the Environment while Maintaining Safety and Performance.”

The seven qualities that characterize excellence in transportation design—the outcomes of the CSS process—are listed below.

- The project satisfies the purpose and needs as agreed to by a full range of stakeholders. This agreement is forged in the earliest phase of the project and is amended, as warranted, as the project develops.
- The project is a safe facility for both the user and the community.
- The project is in harmony with the community, and it preserves the environmental, scenic, aesthetic, historic, and natural resource values of the area.
- The project exceeds the expectations of both designers and stakeholders and achieves a level of excellence in the public’s mind.
- The project involves the efficient and effective use of resources (time, budget, community) of all involved parties.
- The project is designed and built with minimal disruption to the community.
- The project is seen as having added lasting value to the community.

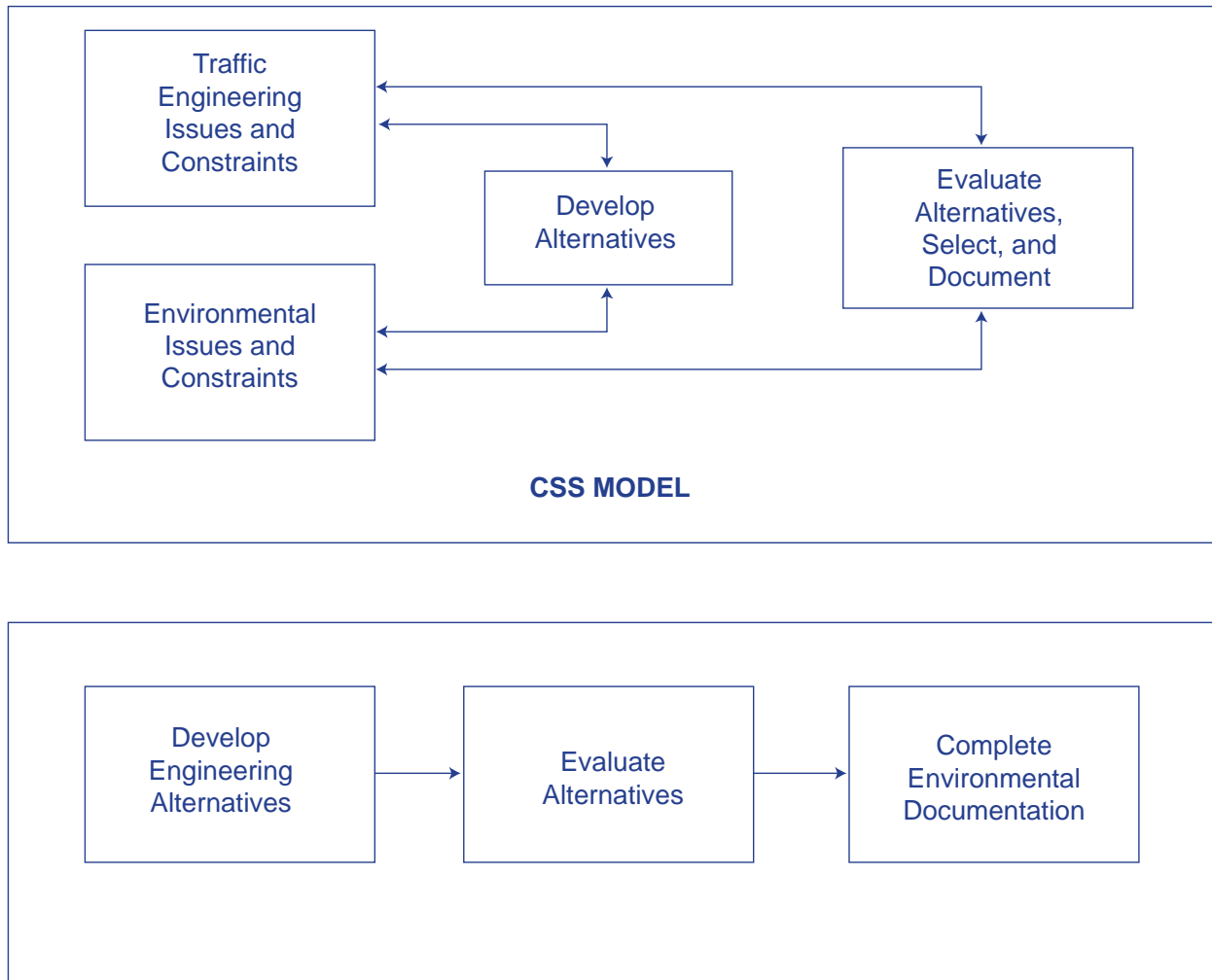
The eight characteristics of the process that will yield excellence in transportation design are listed below.

- Communication with all stakeholders is open, honest, early, and continuous.
- A multidisciplinary team is established early on, with disciplines based on the needs of the specific project, and with the inclusion of the public.
- A full range of stakeholders is involved with transportation officials in the scoping phase. The purposes of the project are clearly defined, and consensus on the scope is forged before proceeding.
- The highway development process is tailored to meet the circumstances. This process should examine multiple alternatives that would result in a consensus of approach methods.
- A commitment to the process from top agency officials and local leaders is secured.
- The public involvement process, which includes informal meetings, is tailored to the project.
- The landscape, the community, and valued resources are understood before engineering design is started.
- A full range of tools for communication about project alternatives is used, such as visualization.

13.2 Agency Roles

The key federal agencies with which to coordinate CSS will be Federal Highway Administration (FHWA), United States Commission of Fine Arts (CFA), National Capital Planning Commission (NCPC), National Park Service (NPS), United States Army Corps of Engineers (USACE) and United States Fish and Wildlife Service (USFWS).

Figure 13-1 Context-Sensitive Solutions Approach—Integrating Concurrent Engineering and Environmental Analyses



Source: FHWA, *Flexibility in Highway Design*

District of Columbia agencies involved are the District of Columbia Office of Planning (OP), District of Columbia Historic Preservation Office (DCHPO), and the District of Columbia Department of the Environment (DDOE).

13.3 General Analysis or Evaluation Methodology

DDOT has always used the principles of CSS in some form or another by involving the public, avoiding adverse impacts on the natural parklands, or enhancing multimodal transportation options in every transportation project. DDOT requires CSS to be an integral part of all

transportation design activities and requires the completion of a CSS worksheet.

CSS involves social, economic, and environmental considerations as meaningful parts of each alternative developed, not simply as add-ons or after-the-fact steps (see Figure 13-1). This integrated approach helps build consensus for the eventual decision and saves time and costs by incorporating such considerations from the beginning, when it is easier to accommodate change. There may be some confusion on how the National Environmental Policy Act of

1969 (NEPA) is related to CSS. In fact, the CSS process is like the NEPA process in that:

- Steps in the two processes are nearly identical and easily blend together.
- Both involve stakeholders in selecting the “best” alternative.
- Both are intended to provide adequate information for effective decision making.
- Both provide an interdisciplinary framework for considering the positive and negative impacts of agency actions.

The key elements of CSS for any project are described below.

13.3.1 Purpose and Need Statement

The Purpose and Need Statement under the CSS process does not necessarily focus only on transportation needs.

It may also focus on environmental and community values. It is the description of the transportation problem that provides the basis for the transportation project. The project purpose and need is a formal element of NEPA documentation. It is technically not required for non-NEPA projects, but it is recommended because it establishes the beginning framework for alternatives evaluation.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) requires the purpose and need statement to clearly identify objectives that the proposed project is intended to achieve for improving transportation conditions. The objectives should be derived from needs and may include, but are not limited to, the following, as outlined in SAFETEA-LU.

- Achieving a transportation objective identified in an applicable statewide or metropolitan transportation plan

- Supporting land use, economic development, or growth objectives established in applicable federal, state, local, or tribal plans
- Serving national defense, national security, or other national objectives, as established in federal laws, plans, or policies

The purpose and need statement should be concise and understandable. Every effort should be made to develop a purpose and need statement that focuses on the primary challenges to be addressed.

Although the purpose and need statement serves as the cornerstone for the alternatives analysis, it should not discuss alternatives. Each potential alternative is analyzed to evaluate whether it meets the purpose and need for the project. Care should be taken that the purpose and need statement is not so narrowly drafted that it unreasonably points to a single solution.

13.3.2 Collaborative Stakeholder Involvement

Public and stakeholder involvement is an essential element of CSS. NCHRP 480: A Guide to Best Practices for Achieving Context Sensitive Solutions has excellent suggestions for identifying and motivating stakeholder involvement. Some of those suggestions are presented below. Some of these suggestions supplement or expand on the public involvement concepts presented in Chapter 11, Public Involvement.

For every design project, public involvement should be initiated in the earliest phase of the project and continued throughout its duration. CSS should be tailored to local needs and conditions and should be frequent, ongoing, innovative, and intended to affect the results of the planning process. Public involvement should play a meaningful role in

the project's evolution and the decision process. Developing a public involvement plan generally involves four steps.

1. Identifying stakeholders
2. Interviewing stakeholders
3. Selecting public involvement techniques
4. Planning for implementation

Identifying Stakeholders

A stakeholder is anyone or any organization that may be affected by the ultimate project or the process to achieve the project. Stakeholders are the individuals or groups, private or public, who are potentially affected by the project either directly or indirectly and have a “stake” in the success or failure of the project. Stakeholders typically include owners or property adjacent to the project and their tenants, users of the facility, representatives of the political jurisdictions in which the project is located, transportation service providers in the area, and a wide range of interest groups who support and oppose the project.

Identifying stakeholders is sometimes difficult. It may be useful to solicit opinions and feedback from people within the sponsoring agency familiar with the project area and with the transportation needs. The first step to developing a public involvement plan is to identify the key groups to focus on, such as the city council, Advisory Neighborhood Commission (ANC), advocacy groups, media, and the public at large. These representatives can identify potential issues that could be raised by a project in the area, the groups likely to be affected by those issues, key people in each group, the type of impacts that might be expected, and the significance of those impacts on the group(s). Also, knowledge and understanding of the local community is a critical success factor in identifying stakeholders. The ANC may be helpful in making this assessment and also

in identifying the local groups that might be affected by a proposed project.

Interviewing Stakeholders

After identifying the stakeholders, the next step is to conduct one-on-one interviews with a selected set of potential stakeholders, either by telephone or in person. The necessary number of interviews will vary for each project, and all the stakeholders identified need not be interviewed personally. Stakeholders can be narrowed down to represent the full range of those affected and should include likely opposition, supporters, and other facility users.

Interviews generally begin with a brief overview of the transportation need that is prompting the project development activity and proceed to questions concerning perceived issues and concerns, levels of interest, ways the individual or group want to be included in the process, appropriate techniques for information exchange and preferred methods of communication, key sources used for obtaining information about community activities, and other individuals or groups who may be interested in the project.

These interviews work well in the beginning of the project. However, time and resources are required for scheduling and later conducting interviews with each individual stakeholder and also because of the difficulty in making contact.

Stakeholder interviews improve the understanding of stakeholder issues and characteristics, provide ideas for appropriate public involvement techniques, and build agency credibility. People appreciate being listened to and express gratitude when DDOT representatives take the time and trouble to do so. The point of this process is to base public involvement planning on actual consultation with stakeholders rather than speculation about their views. Personal interviews also have the advantage of placing

staff members locally in the project area, giving them an opportunity to get a sense of place and how the community functions at the project outset.

Selecting Public Involvement Techniques

The third step to developing a public involvement process is selecting tools and techniques to use at particular decision points to flesh out how information exchanges will be conducted.

No two projects are exactly alike, and public involvement tools and techniques should be tailored to reflect the particular character of each project—its group of stakeholders, its geographic location, the successes and failures of previous public outreach programs, the level of complexity and controversy, and so on. The key, of course, is to understand the local groups and differences and tailor an approach that works for the stakeholders while also meeting the needs of and resources available to DDOT.

Techniques are also likely to differ from one decision point to another within any project because the nature of the required information exchange is different. At the beginning of the process, for example, the agency usually seeks to discover community issues and validate its understanding of the project need but may have relatively little detailed or substantive information to share with the community. Later in the process, the agency is seeking feedback on particular alternatives and may need opportunities to present a large amount of detailed information.

The tendency in planning for public involvement is to schedule project-specific events and encourage stakeholders to participate in them.

It is important to recognize that no matter how thorough a stakeholder identification activity is conducted at the outset of the project, the list of stakeholders will change as the

project progresses. As more detailed information becomes available, members of the general public who were previously uninterested in the project may become stakeholders.

The earlier all of the interested parties can be identified, the better. For that reason, it is a good practice to include mechanisms for outreach to the general public, in addition to known stakeholders, as a continuing element of the overall public involvement plan.

Special outreach techniques may be necessary if certain stakeholder groups will be affected by the project but for one reason or another have not been active in the project to date. The team should seek out these groups and meet with them at their convenience to ensure that their input is taken into consideration.

Planning for Implementation

Planning for implementation of a public involvement program involves integrating the selected public involvement activities into the overall project scope, schedule, and budget. Some agencies less experienced in employing CSS do not yet treat public involvement as a task that must be planned and budgeted. “You never know how many meetings you are going to have to hold” is a common refrain. Of course, one of the points of identifying stakeholders upfront and planning rigorously is to find out what those needs are.

Finally, a public involvement plan is a useful tool, a key element of the project implementation strategy. But, it is only a road map and will likely require modifications as the project proceeds.

13.3.3 Structured Decision Making

All projects have a level of risk, and anything that can be done to reduce risk and uncertainty is an improvement. A structured process for making decisions helps uncover unknowns and highlight risks so they can be addressed as

needed, rather than discovered late in the process when they are more time-consuming and costly to address. A structured decision process specifies technical milestones and related opportunities for public involvement. It integrates public involvement with overall project management and identifies roles and responsibilities of stakeholders. Further, a structured process provides a level of transparency to decision making that is useful, and sometimes critical, when providing a meaningful role for nontraditional, and often skeptical, participants in the decision making process.

The particulars of the decision process should reflect the type of environmental review process required under NEPA for federally funded projects, and any other relevant state or local environmental regulatory processes. Specifics will differ in some respects for projects requiring an Environmental Impact Statement (EIS), an Environmental Assessment (EA), or a Categorical Exclusion (CE). The meshing of state or local environmental requirements with those at the federal level will require special attention in the design of a project's decision process.

Both large and small projects can have complicated problems. Projects can be difficult to implement if decisions are not well understood by stakeholders. Having a well-defined decision making process and being able to explain it clearly to stakeholders makes it easier to implement projects and increase the chances for success.

A structured process focuses attention on problems in order of priority, increasing the chances that a project will address the most challenging problems first. The traditional development process adds alternatives as the project evolves. The fewer problems that are identified early in the process, possibly because of insufficient time spent on an effort, the more the process will slow down as time goes on.

The level of detailed data is low when many alternatives exist, but as alternatives are screened out and pared down, more data are needed about each remaining alternative to be able to evaluate them.

Spending more time at the front end on defining the problem allows for a more straightforward alternative development and evaluation, ultimately saving implementation time and avoiding controversies later.

Roles and Responsibilities of the Decision Process

At the beginning of the decision process, it is important to define the points at which decisions will be made. It is also necessary to define who the decision maker(s) will be and who else will be able to make recommendations or comments that are considered by the decision makers. Transmission of comments to decision makers is a process that also needs to be defined at the beginning. Letting everyone know where they fit in the process goes a long way toward setting stakeholder expectations. Figure 13-2 presents a typical decision-making flowchart.

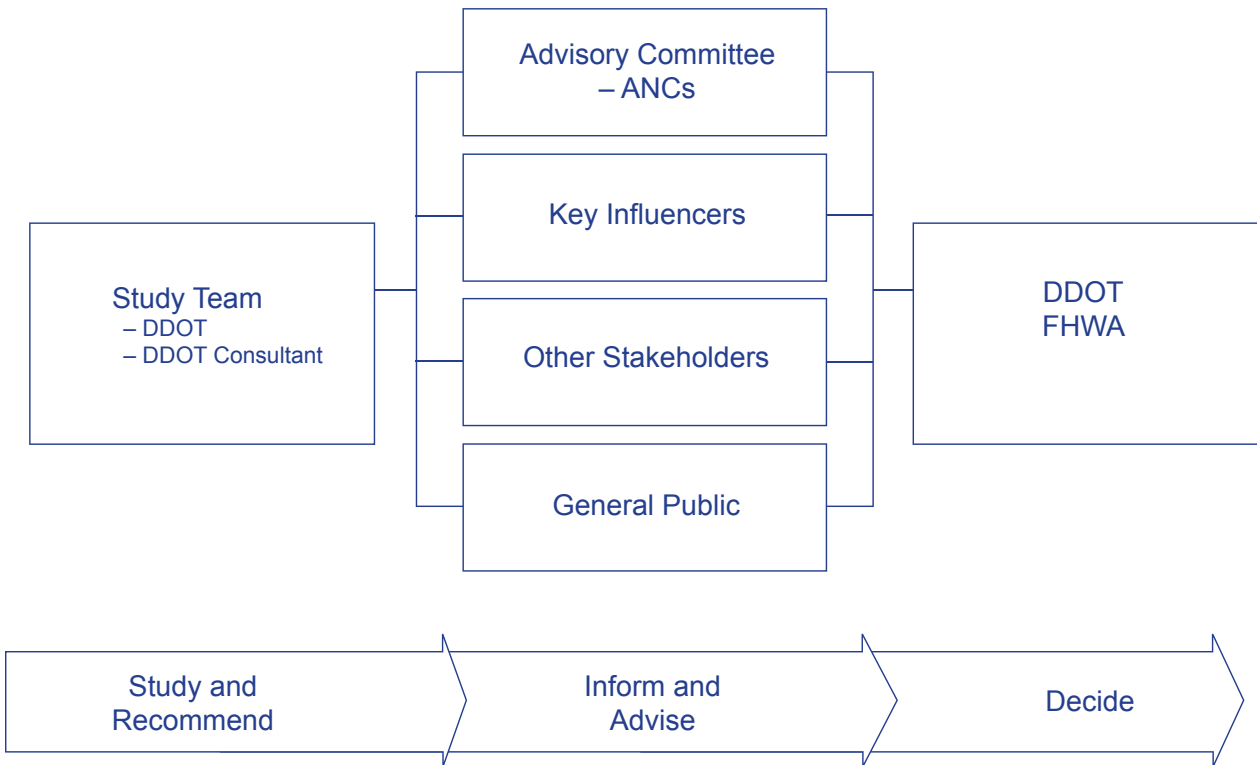
13.3.4 Evaluation of Alternatives

By following a structured decision process, the alternative evaluation procedure operates more smoothly. The evaluation process should help identify and value the tradeoffs of diverse interests. The end result is that you need only evaluate those tradeoffs. All of the interests, problems, and concerns have an equal weight, so it is easier to eliminate modal bias and distinguish the relative impacts of alternatives.

Evaluation criteria should be established before developing alternatives. Evaluation criteria should be:

- Comprehensive, reflecting the full range of stakeholder values

Figure 13-2 Decision-Making Flowchart



- Fundamental, relating to topics that matter most
- Relevant, helping distinguish among alternatives
- Independent, not allowing double-counting of outcomes
- Measurable, allowing for clear comparisons between alternatives
- Well-defined, in having all parties share a mutual understanding of meaning

The focus of the evaluation criteria should be on distinguishing among the alternatives in an “apples-to-apples” comparison of impacts or outcomes of importance to the public and decision makers. Because all alternatives are evaluated against the same criteria, alternatives with significant differences can be compared to each other.

As a project moves forward, alternatives are refined and their impacts can be identified with greater precision. Early evaluations may include qualitative measures and later, more quantitative ones. The evaluation criteria and methodology should vary accordingly, with lesser degrees of specificity at the early stages.

Stakeholders generally demand high levels of detail for their areas of concern, regardless of the project development stage. Agencies can work collaboratively with key stakeholder groups to understand and accept the different levels of detail appropriate for the different stages of the project.

13.3.5 Alternative Development

The full range of stakeholder values must be reflected in the universe of alternative solutions considered at the outset. Alternatives are generally developed through iterative processes including public, agency, and project team input.

Screening processes for eliminating alternatives with “fatal flaws” are generally employed. The evaluation framework discussed earlier provides some guidance for developing screening criteria, but the goal is to eliminate infeasible concepts. Unless an alternative is financially infeasible, cost should not be used as a screening criterion. However, the purpose and need statement can be used to test whether each alternative is reasonable. Following are the key points to consider while developing each alternative.

- Ensure it is responsive to the problem statement.
- Use the purpose and need statement to test the alternative’s reasonableness.
- Involve stakeholders in identifying and screening each alternative.
- Consider all viable transportation modes and technologies. If a new technology is proposed, DDOT needs to spend time to describe it properly to stakeholders so that they make educated suggestions.
- Develop alternatives that consider physical solutions, such as adding highway lanes to increase capacity, as well as operational solutions, such as improving signal timing.
- Follow a logical evaluation screening process.
- Document all decisions for later reference.
- Consider the unique context of the project location and management requirements.
- Prior to developing alternatives:
 - Agree upon evaluation criteria.
 - Establish project-specific design criteria.
- Conduct sensitivity analyses for critical decisions (such as the level of service [LOS]).
- Portray alternatives in an understandable format to be conveyed to the stakeholders.
- Be creative in developing concepts within the design criteria.

13.3.6 Safety

Successful CSS implementation produces transportation solutions that are both safe and feasible. Balancing safety against other community values is part of the design process. There are ways to measure safety so that project teams can make objective decisions. The safety of each alternative may vary, even if several alternatives fall within similar criteria and standards. There are two ways to evaluate safety.

- Nominal safety refers to compliance with standards, warrants, guidelines, and sanctioned design procedures.
- Substantive safety refers to the expected crash frequency and severity for a highway or roadway.

One can readily measure the nominal safety of a road by comparing its design features—such as lane width, shoulder width, sight distance, curvature, grades, and roadside features—to prevailing design criteria. Similarly, one can measure or characterize an existing highway’s substantive safety by obtaining data about the frequency, type, severity, and other characteristics of crashes occurring on the highway, as well as other information (most importantly, its traffic volume).

Typical best practices include comparing the safety performance of a particular highway with a relevant statewide average or expected value for that facility type. For example, a meaningful review of a two-lane rural highway would involve comparing it to similar two-lane rural highways.

Another method for evaluating the substantive safety of a highway is to compare its performance with accepted crash prediction models.

Every highway segment or project can be categorized as being nominally safe or unsafe and substantively safe or unsafe. A two by two framework thus captures all possibilities. Highway or roadway projects that may be nominally unsafe but substantively safe may be candidates for resurfacing, restoration, and rehabilitation (known as 3R projects), which imply less-stringent design criteria. Or, for such projects, the designer may be more willing to accept a design exception if the context warrants one. A project that involves a road known to be substantively unsafe but nominally safe requires a targeted effort to deal with the safety problem. For highways or roads that are both nominally and substantively unsafe, reconstruction to full standards and a reluctance to accept a design exception may be appropriate.

Sometimes it is not possible to meet the design criteria. Establishing design criteria that cover every conceivable situation, each with a unique set of constraints and objectives, is not likely. In such cases, design exceptions may be inevitable. Such cases could include when impacts relate to the natural environment, social resources, or right-of-way impacts, or when there is a need to preserve historic or cultural resources or be particularly sensitive to context and community values. Having a design exception is not a substitute for an acceptable level of safety. Before committing to the design exception, the project team should thoroughly analyze the location for any potential impacts.

Design manuals and policies that provide further guidance are listed below.

- Design policies and practices in AASHTO's A Policy on Geometric Design of Highways and Streets (the Green Book)

- Design policies and practices in the DDOT Design Manual
- Design standards and specifications in the DDOT Standard Specifications for Highways and Structures
- Practices provided in National Cooperative Highway Research Program (NCHRP) Report 480, A Guide to Best Practices for Achieving Context Sensitive Solutions
- Guidance from FHWA's Flexibility in Highway Design
- Guidance from AASHTO's A Guide to Achieving Flexibility in Highway Design

13.4 Format and Contents of Documentation

The format and content of documentation depends on type of the project being proposed. At a minimum, the purpose and need statement for a transportation project should contain the following information:

- Project Status: Briefly describe the action's history, including measures taken to date, other agencies and governmental units involved, action on spending, schedules, and other pertinent information.
- Capacity: Discuss the capacity of the present facility and its ability to meet present and projected traffic demands. Discuss what capacity and LOS for existing and proposed facilities are needed.
- System Linkage: Discuss if the proposed action is a "connecting link" and how it fits into the transportation system.
- Transportation Demand: Discuss the action's relationship to any statewide plan or adopted urban transportation plan. In addition, explain any related traffic forecasts that

are substantially different from those estimates of the 23 USC 134 (Section 134) planning process.

- **Legislation:** Describe any federal, state, or local governmental mandate for the action.
- **Social Demands or Economic Development:** Describe how the action will foster new employment or benefit schools, land use plans, recreation facilities, and so forth. In addition, describe projected economic development/land use changes that indicate the need to improve or add to the highway capacity.
- **Modal Interrelationships:** Explain how the proposed action will interface with and complement airports, rail and port facilities, mass transit, and other public transportation services.
- **Safety:** Explain how the proposed action is necessary to correct an existing or potential safety hazard. In addition, if the existing accident rate is excessively high, explain why and how the proposed action will improve safety.
- **Roadway Deficiencies:** Explain why and how the proposed action is necessary to correct existing roadway deficiencies (such as substandard geometrics, load limits on structures, inadequate cross sections, or high maintenance costs). In addition, explain how the proposed action will correct these deficiencies.

Documenting the Alternatives' Evaluation and Selection

Documentation is critical to establishing the credibility of the alternatives analysis process. Establishing naming conventions at the outset of the process assists in clear tracking of alternatives and their variations. Notes should be maintained for each meeting in which alternatives are discussed, as well as a record of specific reasons why each alternative was either retained for further evaluation

or rejected. For projects requiring NEPA compliance, this material is included in an EA or EIS to document alternatives reviewed but ultimately rejected. In these projects, the alternative evaluation and selection process ends with the selection of a preferred alternative, which is documented in a Finding of No Significant Impact (FONSI) for an EA, or a Record of Decision (ROD) for an EIS. Technical reports and the EA or EIS should provide detailed documentation of the evaluation process.

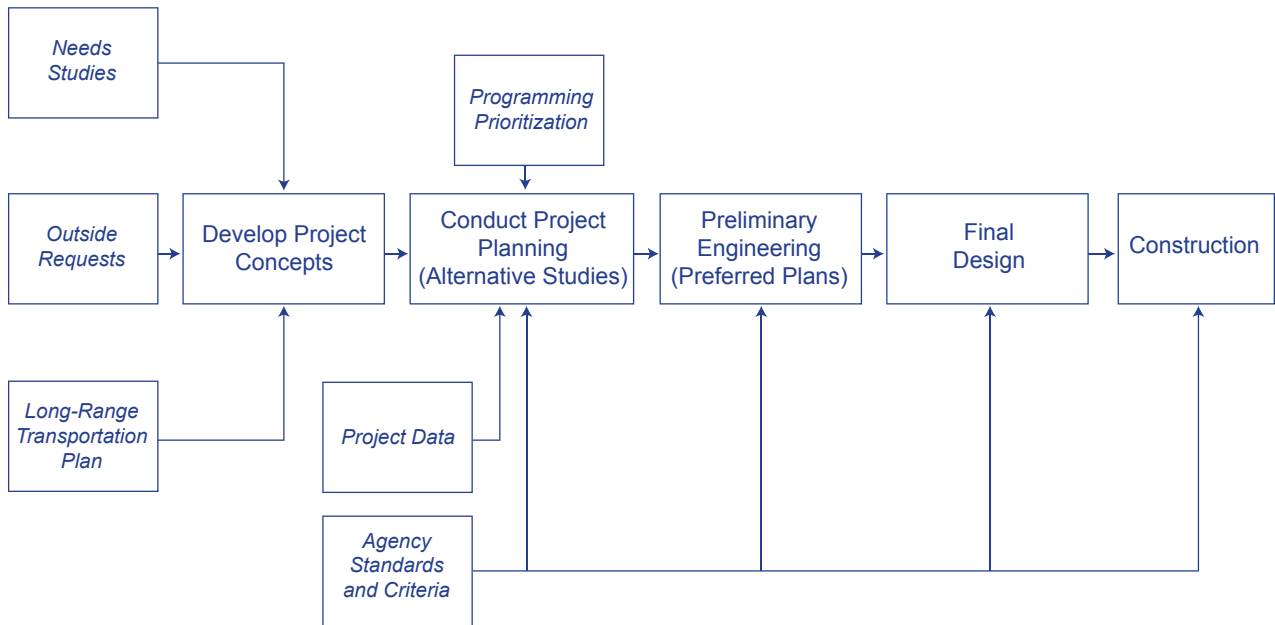
13.5 Project Development Process

The project development process incorporates the steps listed below. Figure 13-3 graphically depicts the same process in more general terms.

The DDOT CSS Guidelines specify that the design process should include the following steps.

- Identify the project, including initial purpose and need.
- Develop a project team consisting of Infrastructure Project Management Administration, Transportation Policy and Planning Administration (TPPA), Transportation Security Administration (TSA), and the Urban Forestry Administration for project scoping.
- Develop a public participation plan.
- Refine the project's purpose and need, based on agency and public input.
- Develop project goals, objectives, and measures of performance.
- Identify design requirements.
- Involve other agencies, administrations, and the public in project scoping.

Figure 13-3 Project Development Process



- Identify design elements that are also transportation and contextual elements.
- Identify key agencies to coordinate project activities with, especially CFA, NCPC, NPS, USFWS, District of Columbia Office of Planning, USACE, DCHPO, and DDOE.
- Obtain compliance for environmental laws and regulations such as:
 - NEPA
 - District of Columbia Environmental Policy Act (DCEPA)
 - Section 404 clearance
 - Section 4(f) clearance
 - Section 106 clearance
- Consider the economic and budget constraints.
- Develop multiple conceptual designs in context with the design elements, based on stakeholder review and comments.
- Identify and address design deficiencies through stakeholder feedback.
- Screen the designs and select the one that most effectively fits the project purpose and need, taking into consideration environmental impacts, and community’s needs and wishes.
- Complete environmental compliance process.
- Develop mitigation measures, if required.
- Complete the final design.
- Notify the community and stakeholders about construction schedule.
- Begin construction.
- Include stakeholder reviews and incorporate their comments in every step of the process.
- Coordinate closely with the other administrations within DDOT.

13.6 Continuation through Design and Construction

Commitment to CSS and public participation should be carried out during the construction phase of the project. This is the time when the agencies have an opportunity to demonstrate that they are fulfilling the commitments they made to the public. Many public involvement processes conclude at the end of the alternative selection process, which in turn causes the agencies to lose sight of the continuing interest many stakeholders have in the ongoing details of final design and construction. It also ignores the importance of maintaining agency credibility for communicating any changes in the project that occurs during these postplanning activities. Poor accommodation of stakeholder issues at this stage can often break down much of the goodwill and trust that had been carefully built up to this point in the project process.

A more extensive outreach program during construction should be considered to provide travelers with information about revised routing and adjacent property owner/renters with information regarding planned construction activities. Changes to the project plan, schedule delays, changes to construction detours, and so on all present risks if they are not clearly communicated to stakeholders. Some options are to use existing newsletters and websites to update stakeholders and schedule occasional meetings with existing advisory groups and elected officials at key milestones.

The project team should fully communicate all key design decisions and stakeholder issues to construction staff and should be available to resolve construction issues and problems. This can be accomplished through a short conference call or a meeting that includes planners, designers, and construction staff. The public and stakeholders require continual updates and information on construction. The design staff must communicate any changes in the field that affect commitments to stakeholders. It is important to remain open and honest with stakeholders when field changes are necessary.

13.7 Additional Information

District Department of Transportation – Context Sensitive Solutions: <http://www.ddot.dc.gov/csd>

FHWA and Context Sensitive Solutions: <http://www.fhwa.dot.gov/context/index.cfm>

Context Sensitive Solutions: <http://www.contextsensitivesolutions.org/>

Center for Environmental Excellence by AASHTO – Context Sensitive Solutions: http://environment.transportation.org/environmental_issues/context_sens_sol/

A Guide to Best Practices for Achieving Context Sensitive Solutions – NCHRP 480: http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_480.pdf