

Step 3

Develop Vision and Strategies

Overview

The third step in undertaking the corridor study is to develop a common vision for the corridor and a set of corridor management and improvement strategies. These strategies should be specifically designed to address the issues and needs identified. The outcome of this step will be a limited set of prioritized strategies for the corridor that will move forward to implementation planning.

Develop Vision and Strategies – Major Activities

- Establish vision and goals for the corridor;
- Develop objectives and performance measures;
- Identify and screen potential strategies;
- Define and analyze strategies in more detail; and
- Select and prioritize strategies.

The vision identifies the key values in an ideal corridor.

Establish a Vision and Goals for the Corridor

Before developing strategies for the corridor, stakeholders should work to identify a common vision and goals for the corridor.

The *vision* is a concise statement that paints a picture of the desired future for the corridor – from both a land use and a transportation perspective.

The *goals* support the vision, and lay out desired long-range outcomes to be achieved by the corridor plan.

The initial set of goals for the corridor management study that were established by the Advisory Group prior to the study scoping (in Step 1) should serve as the starting point for this activity, which will involve developing a consensus across a broader set of stakeholders.

The process of establishing a vision and goals creates an opportunity for stakeholders to discuss the core function(s) of the corridor. For example, should the primary roadway in the corridor serve as a high-speed facility providing efficient access between different regions of the State? Or is it a “main street” of historic communities where speed for through traffic is traded off against creating a quality pedestrian environment? What type of development should occur along the corridor, and how should access be provided?

In many cases, corridors serve multiple functions. The vision and goals may acknowledge the need to balance competing desires, and that different strategies may be appropriate according to the roadway context (e.g., rural versus urban/village).

The corridor vision and goals should:

- Establish a unified vision across jurisdictional boundaries, even while recognizing different corridor development contexts (e.g., urban versus rural);
- Consider the range of social, economic, and environmental issues;
- Reflect existing roadway designations (e.g., functional class, access management category, NHS, truck route, scenic byway);
- Reflect existing policy documents such as local comprehensive plans and statewide and regional transportation plans;
- Incorporate and reflect current public input about how local residents view their communities and the transportation corridor; and
- Recognize the needs of those who may not be well-represented within the corridor planning process, such as through travelers from outside the study corridor or visitors from other states.

If possible, the vision and goals statements should be supplemented by graphics such as maps showing the roadway context (urban, transitional, rural) and growth policy areas (e.g., village conservation areas, designated growth centers, rural conservation areas), as well as by illustrations of typical development patterns and roadway cross-sections specific to these areas.

Example of Corridor Vision Statements and Goals

Vision Statement

The U.S. Route 7 transportation corridor between Burlington and Georgia Exit 18 provides an increasingly important link in the economic and social lives of the communities it serves. The parts of the transportation system within this corridor are closely interwoven with each other and with the economic and social life of the communities. This system should be enhanced to effectively serve person travel and goods movement within and through the study corridor, support municipal and regional land use visions and plans, preserve or enhance the quality of life for those living within the corridor, and should resolve the numerous identified site-specific problems. Although alternatives to private motor vehicle transportation should be fostered within the corridor, private autos and trucks using public roads and highways will remain the principal means of transport over the 20-year planning horizon of this study.

Goals

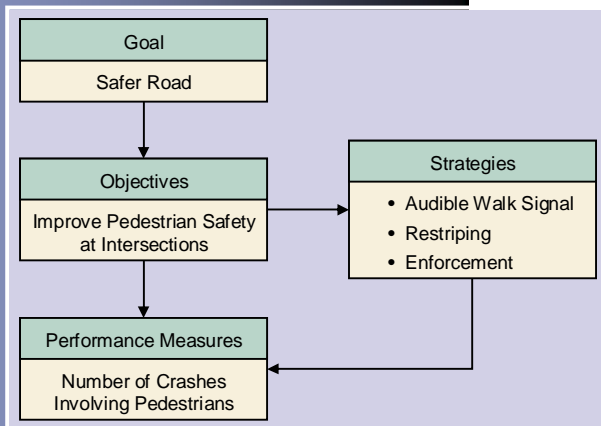
- Provide a safe highway and transport environment for highway users and abutters;
- Provide meaningful alternative means of transportation;
- Use transportation service and facilities to support, further, and enhance community land use and development strategies;
- Balance growth and economic development with environmental protection and community preservation;
- Design transportation facilities to complement the areas in which they are located; and
- Provide for sound and effective long-term fiscal management of necessary improvements within the corridor.

(Adopted from the U.S. Route 7 Winooski – Georgia Corridor Study.)

Performance measures can be used to clearly define specific desired outcomes to be achieved.

Develop Objectives and Performance Measures

For some small-scale corridor planning efforts, having a statement of vision and goals will be sufficient to move ahead with defining strategies. For larger efforts, it may be helpful to develop a set of more specific objectives and quantitative performance measures that back up the vision and goals. This will provide a useful framework for identifying strategies. It also will provide a framework for future monitoring to see if the actions taken were effective, and if additional actions are needed to achieve the desired outcomes.



For example, the *goal* of a safer road might be backed up with specific *objectives* for improving pedestrian safety at three key intersections. A *performance measure* could be defined based on the number of crashes involving pedestrians at the intersections. *Strategies* to achieve the objectives might include intersection redesign, stepped-up enforcement, or improved signage. The performance measure could be used in the future to determine how effective these strategies were, and if additional strategies are needed.

The following table lists some of the key impacts for consideration in corridor studies. It can be used as a resource for developing corridor goals and objectives.

Impacts to Consider in Corridor Studies

Mobility and Accessibility

- Travel time and delay for roadway corridor users;
- Access to jobs, services, other activities for transportation-disadvantaged; and
- Access for recreation and tourism uses.

Safety

- Motor vehicle safety; and
- Bicycle and pedestrian safety.

Economic Development

- Impacts on local property values and business sales;
- Local and regional business attraction and expansion; and
- Local, regional, and statewide freight mobility.

Environment

- Loss of productive agricultural and forest land;
- Loss of important habitats (wetlands, forests, prime wildlife habitat, endangered species habitat);
- Habitat connectivity and wildlife movement (land and water);
- Stream alteration and water quality; and
- Watershed impacts – runoff and Total Maximum Discharge Limits (TMDL).

Quality of Life

- Noise and vibration;
- Air pollution;
- Aesthetic and visual impacts;
- Impacts on recreational areas and open space; and
- Historic and archeological resources.

Secondary and Cumulative Impacts

- Transportation-induced growth patterns and related secondary impacts; and
- Cumulative impacts of past, present, and future transportation, land use, and other actions.

Some examples of commonly used quantitative measures of performance are shown below. These may be helpful for those corridor management efforts wishing to pursue a quantitative approach to analyzing strategies and monitoring future performance.

Examples of Performance Measures and Targets		
Objective	Performance Measure	Target
Safety	<ul style="list-style-type: none"> Number of major crashes per year Number of high-crash locations 	<ul style="list-style-type: none"> Five percent reduction from 1998 to 2008 Eliminate all those with identified cost-effective fix
	<ul style="list-style-type: none"> Number of crashes involving pedestrians or bicyclists 	<ul style="list-style-type: none"> Reduce
	<ul style="list-style-type: none"> Percent of corridor with adequate shoulders for bicyclists 	<ul style="list-style-type: none"> 100%
Mobility	<ul style="list-style-type: none"> Average travel time between major cities 	<ul style="list-style-type: none"> No decline in average travel time from current levels
	<ul style="list-style-type: none"> Intersection delay 	<ul style="list-style-type: none"> < 5% increase over 10 years
	<ul style="list-style-type: none"> Maximum volume-to-capacity ratio 	<ul style="list-style-type: none"> 0.7
	<ul style="list-style-type: none"> Number of geometric roadway deficiencies for large trucks 	<ul style="list-style-type: none"> Eliminate all those with cost-effective fix
	<ul style="list-style-type: none"> Modal diversion (truck to rail) 	<ul style="list-style-type: none"> Increase in rail traffic on parallel facility
Transit Performance	<ul style="list-style-type: none"> Passengers per hour on established route 	<ul style="list-style-type: none"> 100% at acceptable levels (locally defined)
	<ul style="list-style-type: none"> Cost per passenger on established route 	<ul style="list-style-type: none"> 100% at acceptable levels (locally defined)
Resource Protection	<ul style="list-style-type: none"> Loss of critical environmental habitat 	<ul style="list-style-type: none"> No net loss
	<ul style="list-style-type: none"> Percent of growth occurring in designated growth centers 	<ul style="list-style-type: none"> 90%
	<ul style="list-style-type: none"> Resident perception of community impact 	<ul style="list-style-type: none"> No target

For corridor plans that involve state highways, the performance measures established in the Vermont Highway System Policy Plan and subsequently adopted or updated in the VTrans Performance Measures Report (February 2005) should be considered. The Performance Measures Report also establishes measures that should be taken into consideration for other transportation modes, programs and facilities (e.g., bicycle and pedestrian, public transit, aviation, park-and-ride facilities).

Identify Strategies

The first step in identifying strategies is to compile a list of transportation improvement projects that currently are underway, or which are programmed and have a high probability of moving forward. The Statewide Transportation Improvement Program (STIP) can be a good source of information for this. This set of projects should serve as a baseline for the development of additional transportation strategies. In addition, other planned programs or initiatives impacting the corridor that are not capital in

Identify transportation improvements already in the works.

Review existing plans to see what has already been recommended.

Gather ideas from the stakeholder community.

nature should be identified. These might include pending modifications to zoning codes, or bus service changes.

After identifying what is likely to happen, the next step is to see what other strategies already have been recommended in existing planning documents. The statewide Capital Program and Project Development Plan (CPPDP) should be reviewed to identify projects affecting the corridor that have not yet been programmed in the STIP. All of these projects should be evaluated within the corridor management study for consistency with the established vision and goals for the corridor. A valuable result of the study will be a determination as to whether these projects should be eliminated from the CPPDP, move forward as is, or move forward with modification.

In addition to the Capital Program and Project Development Plan, other documents that may have recommended strategies for the corridor include previous corridor studies, local comprehensive plans, and statewide and regional transportation plans. The corridor management plan development process is a valuable opportunity to bring all of these proposed strategies together, rationalize them, and build consensus on what the priorities for the corridor should be over the next 20 years – given realistic funding scenarios.

Ideas also should be gathered from stakeholder and public input collected during the assessment of current conditions, issues, and needs. Initially, a full range of potential strategy types should be considered. Individual strategies (e.g., improve intersection at Main and Elm Streets) should be listed according to strategy type in order to facilitate further screening and analysis. At this stage, strategies may be conceptual in nature (e.g., initiate bus service between Cityland and Villageville) without specifying details (e.g., service frequencies, specific routing, and hours of operation).

Types of Corridor Management and Improvement Strategies

Strategy Type	Examples
<p>Minor Roadway and Operational Improvements</p>	<ul style="list-style-type: none"> • Improved signage and markings; • Signals and other intersection controls; • Bulbouts and pedestrian signals; • Off-road safety improvements (e.g., guardrails, vegetation clearance); • Drainage systems and maintenance practices to reduce environmental impacts, improve water quality, etc.; • On-street parking restrictions; • Designated truck routes; • Intelligent transportation systems (ITS) strategies such as traveler information and incident response; and • Seasonal and special event controls (e.g., traffic officer).
<p>Major Roadway Improvements</p>	<ul style="list-style-type: none"> • Lane additions at intersections; • Roundabouts; • Medians and channelization; • Shoulder widening; • Horizontal and vertical curve realignment; • Climbing lanes; • Passing lanes; and • New general-purpose lanes.

Types of Corridor Management and Improvement Strategies (continued)

Strategy Type	Examples
Zoning and Land Use	<ul style="list-style-type: none"> • Land use and zoning provisions to encourage concentrated development; • Designation of specific planning areas within town plans with guidelines for development, resource protection, and access management; • Designation of scenic view corridor; • Site plan review requirements for developments along the corridor; • Subdivision regulations that encourage pedestrian connectivity and internal street connections to reduce traffic volumes on main roads; • Provisions to allow for shared parking among adjacent uses; • Growth management tools, such as development phasing and infrastructure concurrency requirements; • Overlay districts to protect critical resources; and • Performance standards for new developments.
Access Management	<ul style="list-style-type: none"> • Driveway consolidation; • Turn restrictions and medians; • Intersection spacing; and • Local street infrastructure.
New Facilities	<ul style="list-style-type: none"> • New/expanded interchanges; • Bypasses; and • Intermodal facilities.
Alternative Mode Improvements and Travel Demand Management	<ul style="list-style-type: none"> • Signs and markings (pedestrian crossings, bicycle lanes); • Sidewalk improvements; • Off-road bicycle/pedestrian paths; • Transit service improvements; • Travel demand management programs, such as rideshare programs and employer transit subsidies; • Rail capacity and service improvements; and • Intermodal facility and access improvements (passenger, freight).
Modal Connectivity Improvements	<ul style="list-style-type: none"> • Park-and-ride lots; • Bike racks on buses; and • Shuttle services.

Consider organizing strategies into packages.

Some corridor planning efforts may find it useful to develop separate “packages” of strategies. Packages can be used for a variety of purposes:

- To group together synergistic or complementary strategies with a common purpose (e.g., alternative modes including new park-and-ride lot and transit service changes; land use strategies including zoning to promote infill, incentives for rehabilitation of existing buildings, and driveway consolidation for access management).
- To define different sets of strategies to be pursued under varying future funding scenarios (e.g., one package with a major capacity improvement and an alternative package with a set of lower-cost

traffic management strategies). This can help to ensure that a realistic set of strategies is produced.

- To define different sets of strategies to be pursued under varying future growth patterns. If future growth patterns in the corridor are highly uncertain, developing packages of strategies for “high” and “low” growth scenarios can contribute to a better understanding among stakeholders of the interplay between transportation needs and land use in the corridor.

Strategies for Main Streets

In many Vermont communities, Main Street also is a state highway, serving significant volumes of both car and truck traffic. While this traffic often benefits the community by generating sales for local businesses, it also may adversely affect quality of life in the community because of noise, aesthetic, congestion, and safety impacts. Balancing the needs of through traffic with the needs of Vermont’s urban and village communities is a common challenge in developing a corridor management plan.

One traditional solution to this problem has been the construction of a bypass to route traffic around the town. Yet this solution has become increasingly unacceptable in Vermont due to concerns that bypasses promote suburban “sprawl” development while draining vitality from the historic community centers, as well as to environmental and cost constraints. Communities in Vermont as well as other states are increasingly looking to less capital-intensive alternative strategies to improve community livability while still accommodating through traffic. Examples of these strategies include:

- The use of “gateway” treatments, such as splitter islands, neck-downs, signage, and other physical strategies, to slow traffic as it enters the town or village.
- Traffic calming treatments within the town or village to slow traffic and improve pedestrian safety, such as reduced lane and/or shoulder widths, marked or textured crosswalks, curb extensions, and median refuges.
- Driveway consolidation, signalization, turn restrictions, and other access management techniques to improve traffic flow and reduce crashes in congested areas.
- Low-cost intersection improvements, such as removing or relocating parking to create space for a turn lane.
- Signage and improvement of existing alternate routes that bypass the town center.
- Completion and/or improvement of sidewalks to make pedestrian travel easier for short trips.
- Pavement strategies, including maintenance and the use of low-noise pavements, to reduce noise and vibration from truck traffic.
- Building and site design guidelines to ensure that development in village centers supports pedestrian travel and is consistent with aesthetic and historic character.



Computer simulation of proposed U.S. 2 redesign in Danville.

Source: Dufresne-Henry and Vermont Agency of Transportation.

Use a screening process to identify strategies for detailed evaluation.

Develop Screening Criteria

Study partners should then work to develop a set of screening criteria that can be used to select a smaller number of strategies from the initial brainstormed list for more detailed definition and analysis. Criteria should consider feasibility; likely effectiveness in achieving the desired outcomes for the corridor; and consistency with established policy, plans and programs. Financial feasibility will be a key consideration in most corridor studies, both at the screening stage and later when strategies are prioritized and when implementation steps are defined. At each of these points, it is advisable to be aware of the full range of potential funding sources – including conventional Federal and state transportation resources, as well as potential innovative sources of funding such as Federal grant programs or local self-assessment (e.g., through a business improvement district). Some potential funding sources are described in Appendix C.

Study partners should use the screening criteria to eliminate those strategies that are not worth investing additional effort in analyzing. To a large extent, the screening process at this stage will be qualitative and will rely upon the judgment of study partners. It also may include simple quantitative measures, such as number of problem intersections addressed. A “checklist” approach may be taken, whereby the strategy is assigned a pass/fail assessment for each criterion.

Sample Screening Criteria	
Criterion	Considerations
Feasibility	<ul style="list-style-type: none"> • Cost (initial capital and ongoing maintenance) is in line with likely availability of funding from Federal, state, local, and private sources. Necessary legal authority established and implementation mechanism exists or could be established. • Precedent exists for similar strategies. • Strategy would be likely to obtain needed degree of public and political support. • Strategy would not face insurmountable opposition.
Effectiveness	<ul style="list-style-type: none"> • Strategy would likely be an effective way to address goals and objectives (use these criteria to screen out clearly inferior options for achieving the same goal).
Consistency with Vision, Established Policies, Plans and Programs	<ul style="list-style-type: none"> • Corridor Vision and Goals; • State Transportation Plan and Modal Policy Plans; • Regional Plans; • State and Regional Growth Management Policies; • Local Comprehensive Plans; and • State Transportation Improvement Program.

The results of the initial screening will be a systematic analysis that can be communicated to the public, documenting the strategies that were considered, and the rationale for selecting strategies for further analysis.

Strategies should be sufficiently well-defined to permit meaningful evaluation; detailed design is not needed.

Use Appendix B as a resource for investigating alternative analysis approaches.

Present the results of the strategy analysis in an easily digestible format.

Define and Analyze Strategies in More Detail

Strategies that have passed the initial screening may need to be defined in greater detail so that they can be evaluated in a meaningful way. For example, if the strategy “intersection improvements” was suggested, more specific options for intersection improvements (install traffic signals, add turning lanes, construct roundabouts) should be identified. It is not necessary to produce detailed designs or operating plans during the corridor study process. This kind of work can be left to the implementation process for strategies that are recommended.

Each strategy or package of strategies should be evaluated in order to provide the basis for setting priorities and making recommendations. The evaluation can involve quantitative analysis, qualitative analysis based on expert judgment or a mixture of the two – depending on the scale of the corridor study, the nature of the identified strategies and the level of resources available. Regardless of the level of sophistication, the evaluation should seek to answer the following questions:

- How well would these strategies address the goals established for the corridor?
- What other impacts would they have – both positive and negative?
- If resources are limited, which strategies should be undertaken first?

Use of quantitative methods for strategy evaluation can be of great value in helping stakeholders to understand likely impacts of alternative strategies. If used skillfully and appropriately, they can lend considerable credibility to the corridor study results.

Appendix B provides a list of some available analysis tools and methods, along with their applicability, advantages, disadvantages, and examples of their application in Vermont and other areas. In general, as the sophistication of the tool increases, so do the data requirements. Prior to selecting a tool or method, it is always helpful to talk with others who have used it to get a solid understanding of what value it brings, what is required to use it (data, assumptions, skills) and what pitfalls to avoid. Analysis methods that are selected should be clearly explained and acceptable to stakeholders.

Qualitative evaluation will suffice for many types of strategies, and also can be used to provide a valuable supplement to quantitative analysis. For example, the evaluation of community impacts may involve interviews and meetings culminating in a statement of the positive and negative impacts of each strategy on corridor communities.































The results of the strategy analysis may be presented in different formats, including:

- A text description of findings (both quantitative and qualitative) of how each strategy performs on each of the evaluation criteria;
- Tables or matrices summarizing quantitative findings (e.g., travel time savings, crash reductions); and
- Graphics conveying impacts in visual terms (e.g., maps showing the degree of congestion by road segment/intersection, build-out development locations).

An evaluation matrix is commonly used to summarize all of the findings on a single page and to provide a clearly displayed comparison between strategies and their relative impacts. Columns of the impact matrix correspond to each strategy or strategy package. Rows correspond to each evaluation criterion or performance measure. A symbol is used to show how strongly (positively or negatively) each strategy rates on the specific criterion. In the example below, different packages of strategies for improving a corridor are compared based on six criteria. For each criterion, an assessment is shown as to whether the alternative would be better or worse than the existing conditions. An all-white circle indicates that the alternative would be the same as the existing condition; all green means “much better”; all red means “much worse.” Partially filled-in circles represent points in between. Note that these strategy packages are not necessarily mutually exclusive; for example, spot improvements (traffic signalization, pedestrian crossings, etc.) could be combined with land use and access management strategies.

Sample Evaluation Matrix

 = Much Better than Existing  = Much Worse than Existing

	Spot Improvements	Transit and TDM	Road Reconstruction/ Realignment	Land Use/ Access Management	Bypass
Travel Time and Delay					
Safety					
Aesthetic Character					
Bike/Pedestrian Access					
Environmental Impacts					
Cost					

Select and Prioritize Strategies

The qualitative and quantitative information provided through the analysis process should be used to place strategies into priority categories. Strategies should be prioritized as “high,” “medium,” “low,” or “not recommended,” based on considerations such as:

- Magnitude of problem/need to be addressed (major, moderate, minor);
- Certainty of need (existing/immediate, forecast and likely to occur, forecast but speculative);
- Cost-effectiveness of proposed solutions (high, medium, low);
- Level of support for strategy (widespread, mixed, weak);
- Potential availability of adequate funding (likely, uncertain, unlikely); and
- Negative impacts associated with strategy (minimal/none, moderate, high).

If separate strategy packages were developed for different funding scenarios or growth scenarios, prioritization should be performed within each scenario. If this is done, there also should be a clear definition of which is considered to be the most likely scenario, and what future conditions would trigger moving to an alternative set of strategies.

Strategies may be classified as “not recommended” after either an initial screening or a more detailed evaluation. Strategies should receive a “not recommended” rating if they do not effectively or cost-effectively address corridor needs; are inconsistent with the corridor vision or other policies; or if funding or other supporting actions are unlikely to be achieved in any reasonable timeframe.

A consideration related to strategy priority is the potential implementation timeframe for each strategy. Strategies may be classified into “short-term” (less than five years), “medium-term” (five to 10 years), or “long-term” (more than 10 years) categories depending upon considerations such as:

- Priority level;
- Timeframe over which need is likely to occur;
- Expected availability of funding;
- Length of study process required to design and implement the strategy;
- Coordination with other relevant processes (e.g., local comprehensive plan updates, statewide transportation planning process); and
- Other considerations, such as expected time required to gather adequate support for the project.

While short-term strategies also may tend to be high-priority strategies, timeframe and priority level are not directly correlated. For example, some high-priority strategies may be classified as “long-term” because they require more funding than is likely to be available in the immediate future, or because they require a lengthy planning and development process.

The criteria and process for selecting strategies, as well as the results of analysis conducted, should be documented. Documentation should address the rationale behind the prioritization of strategies and any thresholds or triggers established. Documentation also should address the reasons why other strategies were rejected or eliminated from consideration. This will provide an important record to inform future updates of the corridor plan and help to keep people from “reinventing the wheel.”