

Attachment A – Scope of Work

Vergennes Planning and Environmental Linkages Study (PELS) 2021

December 16, 2020

Introduction

The Vermont Agency of Transportation (VTrans) would like the Contractor to prepare a Planning and Environmental Linkages Study (PELS) as the next step in the evaluation of transportation alternatives to reduce the impacts of large trucks on VT Route 22A in Downtown Vergennes, while also enhancing the quality of life and economic vitality for residents in the City and surrounding towns. The primary outcomes will be the identification of transportation alternatives that may move forward for evaluation in an Environmental Impact Statement (EIS) as required in the National Environmental Policy Act (NEPA) and an implementation plan.

Background

There are over 700 trucks per day travelling on VT 22A as it passes through Main Street in the center of downtown Vergennes. Almost 60% of these trucks, 430 per day, are large tractor trailers that create significant noise, vibration, safety, and traffic operational issues affecting the quality of life for residents and visitors and hampering the economic vitality for Main Street businesses. Two significant planning efforts were conducted in the 1990s and early 2000s (1995 *22A Bypass Preliminary Design Report*, 2002 *Greater Vergennes Traffic Impact Feasibility Study*) that evaluated alternate routes and other options to mitigate the negative impacts of truck traffic. While some changes have been made to help calm traffic and improve the pedestrian environment on Main Street, the volume of trucks passing through Vergennes has continued to increase and the negative impacts persist. A proposal in 2016 by former Vergennes Mayor Bill Benton to divert northbound trucks to VT 17 was not well received by adjoining towns but served as motivation to again find solutions that are acceptable to the City and surrounding municipalities.

The May 2019 [*VT 22A Truck Route Study*](#) was conducted by the Addison County Regional Planning Commission (ACRPC) in partnership with VTrans in response to the renewed interest in addressing the truck issue. It evaluates three alternatives that include:

- modifications to Main Street (VT 22A) to improve safety, traffic operations and access for pedestrians and bicyclists;
- directing truck traffic to VT 17 (from VT 22A in Addison to US 7 in New Haven) with the necessary roadway improvements; and
- a new road on the west side of Vergennes with connections to VT 22A north and south of Downtown.

The study also contains a brief evaluation of the effect that planned upgrades to the VT Railway may have on reducing truck trips on VT 22A.

The 2019 *VT 22A Truck Route Study* recommends moving forward with the new road alignment. As the study evolved, the City of Vergennes recognized the potential opportunities a new road could provide and reframed the truck route alternative as the Vergennes Economic Corridor (VEC). The evolution of this alternative from a new road focused on removing trucks from Downtown to the Economic Corridor creates opportunities while also raising questions that will need to be addressed before proceeding to an

Environmental Impact Statement (EIS), which would be necessary for this project in order to use federal transportation funding.

There is a significant amount of work that needs to be completed in the meantime to refine the roadway design and alignment, and planning for the land use changes around the Economic Corridor. This work can set the stage for the EIS and could also provide information necessary for Act 250 and other permits.

VTrans recommended that a Planning and Environmental Linkages Study (PELS) be conducted to address these questions. The recommendation to prepare a PELS was supported in letters from the City of Vergennes and Selectboards in the six surrounding towns of Ferrisburgh, Panton, New Haven, Weybridge, Addison and Waltham. PELS, created by the Federal Highway Administration, provide a collaborative and integrated approach to transportation decision making that considers benefits and impacts of proposed transportation system improvements to the environment, community, and economy during the transportation planning process. The decisions and analyses in a PELS will inform and facilitate the EIS process. The PELS will help maintain the momentum generated during the 2019 *VT 22A Alternate Truck Route Study* and will help make the project competitive for future funding.

Compared to the 2019 *VT 22A Alternate Truck Route Study*, the PELS will be more comprehensive, with greater detail and much more outreach with the public, surrounding towns and stakeholders. Issues and questions that need to be addressed include:

- A comprehensive public and stakeholder engagement process. The process must include the robust involvement of the City of Vergennes and the six surrounding municipalities, as well as the public and other stakeholder groups.
- VEC alternatives with different location and design characteristics need to be developed and evaluated including but not limited to:
 - Roadway alignments that avoid or minimize resource impacts, minimize the potential to disproportionately impact minority populations and low-income populations, minimize ROW acquisition and construction costs, and that best achieve the purpose and need.
 - Whether the roadway should be limited access with at-grade intersections at local roads or fully controlled with grade separated interchanges where local road connections are desired, if any.
 - Intersection designs for connections to VT 22A and at local roads if applicable.
 - Roadway cross-section design features (design speed, lane and shoulder widths, medians, bicycle accommodations, and pedestrian facilities).
- The roadway design and access options need to be coordinated with a land use vision for the Corridor that will be developed as part of the PELS, goals such as enhancing the economic vitality of Downtown Vergennes and preserving the rural character of the surround towns, and the potential land use changes that a facility like the VEC could induce.
- Coordination with all applicable Resource Agencies to gather and document their feedback on potential resource impacts, mitigation options where required, and permitting requirements.

Ultimately, the PELS will identify the transportation alternatives that may be carried forward to the EIS. The PELS will also provide to the extent possible other information such as design plans for the alternatives and other documentation that can be incorporated into the EIS.

Project Management and Committee Structure

VTrans staff will be the contract and project manager. ACRPC staff will assist with guiding the Contractor, outreach logistics, and providing data and local knowledge. VTrans and ACRPC staff will form Technical and Policy Committees with the memberships and roles described below.

Technical Committee: The Technical Committee will be comprised of transportation planning and engineering, environmental, and land use planning subject matter experts from the VT Agency of Transportation, ACRPC, FHWA, and the affected municipalities. The role of the TC is to help guide, review and validate the Contractor's methods, analyses, findings, and recommendations on which the Policy Committee will make its decisions.

Policy Committee: The Policy Committee will include representatives appointed by the legislative bodies in Vergennes and the six surrounding municipalities, the Agency of Transportation, ACRPC, FHWA and stakeholders representing business and economic development, the environment, pedestrian and bicycle users and potentially other interests. The Policy Committee is charged with advising VTrans and Contractors on the assumptions and decisions necessary to conduct the PELS. Examples include but are not limited to endorsement of the Purpose and Need Statement, identification of alternatives to be discarded, development of the initial list of transportation and land use alternatives to be evaluated in the PELS, and recommendations on which alternatives should be carried forward to an EIS. The Policy Committee will consider the recommendations from the Technical Committee in combination with a broader view of other local, regional, state, and stakeholder values and policies.

SCOPE OF WORK

The tasks in the scope of work provide direction on some key issues and desired outcomes but are not overly prescriptive on methods and deliverables. The Contractor will provide the methods, deliverables, and meetings (per the stakeholder engagement plan) associated with each task.

Public and Stakeholder Engagement Plan

The Contractor must include a detailed public involvement and stakeholder engagement plan.

The engagement plan will include meetings with the Technical and Policy Committees at decision points and milestones integrated with the Contractor's proposed scope of work. Assume meetings with the Technical and Policy Committee will occur as part of Tasks 1-7. Regular check-in meetings with the VTrans/ACRPC management team should also be included.

The engagement plan must also include meetings at joint sessions of the selectboards/city council and local planning commissions in Vergennes and the six surrounding municipalities, and at the ACRPC Transportation Advisory Committee and full Commission meetings. Assume two rounds of these local and regional meetings during the development of the Purpose and Need (Task 2) and Alternatives Evaluation (Task 6).

The Contractor must identify other public and stakeholder meetings as recommended by the Contractor, including how the process will satisfy FHWA Environmental Justice requirements for the inclusion of minority and low-income populations.

The Contractors will develop and maintain a public facing project website. The Contractor will describe other techniques and tools that will be used to facilitate meaningful public engagement. The Contractor will

also explain the engagement methods and tools that will be used to satisfy Coronavirus Pandemic safety requirements.

Task 1: Project kick-off and Scope of Work Refinement.

The Contractors will prepare for and facilitate a meeting with the Technical and Policy Committees to review the scope of work and schedule. The scope of work will be revised to address any needed modifications following the meetings. If necessary, a contract amendment will be executed if proposed changes affect the budget or schedule.

Task 2: Purpose and Need Statement.

The purpose of this task is to update the Purpose and Need Statement in the 2019 *VT 22A Truck Route Study* and includes the initial round of meetings with the seven study area municipalities and the ACRPC.

The Existing Conditions section of the 2019 *VT 22A Truck Route Study* should be reviewed and updated as necessary.

The technical and resource data, base maps, and site plans required to support the alternatives development and analysis will also be compiled during this phase. The Contractors will be responsible for collecting and developing data that are not typically available from VTrans and ACRPC.

The Purpose and Need Statement included in the 2019 *VT 22A Truck Route Study* will be updated to reflect feedback gathered at the local outreach meetings in combination with findings from the existing conditions assessment. The effect of systemwide trends in freight movement (per the update of the Statewide Freight Plan) on the challenge of truck flows on VT 22A shall be considered. The draft Purpose and Need Statement will be reviewed by the Technical Committee and presented to the Policy Committee for its endorsement.

Task 3: Transportation Alternatives Initial Screening.

The purpose of this task is to identify the alternatives that will be refined and evaluated in greater detail in subsequent tasks, and to eliminate alternatives that do not warrant further consideration because they don't meet the purpose and need statement or have other fatal flaws.

The evaluation will be informed by coordination with Resource Agencies to document potential environmental and cultural resource impacts.

All alternatives that have been considered in past studies of the truck issue (*1995 22A Bypass Preliminary Design Report, 2002 Greater Vergennes Traffic Impact Feasibility Study, 2019 VT 22A Truck Route Study*¹) will be included in the initial screening, as well as other alternatives that may be identified as a result of the outreach and work in previous tasks. There have been many alternatives considered over the last 25 years, many of which are described at a broad, conceptual level. These alternatives will not be refined at this phase, but the screening process will need to be able to distinguish advantages and disadvantages, benefits, and costs as necessary to support decisions about which alternatives to move forward or eliminate. The Contractor must describe the methods that will be used to conduct the screening.

The goal of this task is to consolidate and compare all the ideas in one report and to document the reasons for continued consideration or elimination of alternatives.

¹ All related reports are available on <http://acrpc.org/communities/vergennes/>

Task 4. Alternatives Refinement

The purpose of this task is to refine and more precisely define the broad and conceptual alternatives identified in the initial screening for further consideration.

The Contractor will assume that one of the alternatives that will be carried forward for a detailed evaluation is the proposal for a new road, west of VT 22A referred to as the Vergennes Economic Corridor that is recommended in the 2019 *VT 22A Truck Route Study*. Several VEC alternatives will be defined based on different roadway alignment and design characteristics as described in the background section, in combination with different land use scenarios for the corridor as described in Task 5.

Other alternatives identified in the Task 3 initial screening for further consideration will be refined as necessary to support a more detailed analysis.

The Contractor should describe, and provide examples of, the level of detail for design plans and other deliverables that will be provided to carry out all aspects of the evaluation of alternatives.

Task 5. Develop Integrated Transportation and Land Use Alternatives for the Vergennes Economic Corridor

An integrated land use/transportation alternative combines land use scenarios with a supporting roadway design. For example, if the land use vision is to preserve agricultural uses and open space, the associated roadway may be designed to accommodate through traffic with higher speeds and no connections to existing local roads or to adjacent land. On the other end of the spectrum, if the land use vision is for commercial and industrial development with housing the associated roadway design may be a boulevard, with slower speeds, access to existing and future local roads, on-road bike facilities, pedestrian facilities, and perhaps some direct access to adjacent land. The 1995 *22A Bypass Preliminary Design Report* includes a discussion of a similar range of transportation/land use alternatives that demonstrate the possibilities.

This task will include the outreach and planning necessary to develop up to three VEC transportation/land use alternatives. The Contractors will engage the Vergennes Planning Commission and public in the planning to develop the land use scenarios. Specific questions to address include:

- Should Vergennes or the other six municipalities create new zoning districts to support a specific land use alternative? If so, what are the defining characteristics of those districts?
- What are the constraints for a specific land use alternative (e.g. sewer, water, ag. Soils, topography, wetlands, etc.), and how do those constraints affect the type of development that might occur? How would development patterns differ if constraints are resolved (e.g. sewer and water line extensions versus relying on septic systems)?

A direct and secondary growth impact analysis of the VEC will be used to inform the development of the land use scenarios and to evaluate the potential land use impacts in the six surrounding study municipalities. The impact analysis will identify the type and quantity of development that could be attracted by the VEC in combination with other factors that drive land use change. Examples include local goals articulated in the regional and municipal plans, water and wastewater availability, proximity to rail, environmental resources, and market forces. The designation of Vergennes as an Opportunity Zone and existing land use in the corridor, such as the Collins Aerospace and the Northland Jobs Corp facility on 400 acres of state-owned land, may also be important factors to consider when evaluating the potential land use impacts of the VEC. The planning will help guide the development of a land use vision for the corridor and identify strategies that can shape the direct and secondary growth in a manner that supports local goals such as enhancing the economic vitality of Downtown Vergennes and protecting the rural characteristics of the surrounding towns. The results will also inform the evaluation of alternatives in Task 6.

Task 6. Alternatives Evaluation and Recommendations

Each alternative selected for further consideration, and refined in Tasks 4 and 5, will be evaluated relative to the purpose and need statement and the related underlying issues. The Contractor should describe the issues that need to be evaluated and the methods that will be used in the evaluation. Issues include but are not limited to:

- Potential impacts to environmental resources based on Resource Agency review and sufficient analysis, field work, and data collection to categorize impacts into none, minor, moderate, high, or severe. This level of environmental analysis will allow the EIS to focus on the impacts identified as moderate to severe.
- Consistency with municipal and regional plans.
- Traffic pattern changes on state and local roads in the seven study area municipalities, related impacts to highway infrastructure and safety, and potential mitigation measures that may be required beyond the work limits of a specific alternative.
- Effect on pedestrian and bicycle travel.
- Effect on transit service operations.
- Effect on commercial vehicle operations.
- Total estimated implementation and operational costs. Implementation costs must be comprehensive including planning, engineering, operational and construction permits, construction, construction oversight and management, work zone management, right-of-way acquisition, etc.
- Potential for disproportionately high and adverse human health or environmental effects on minority populations and low-income populations per Environmental Justice requirements.
- Land use impacts per the direct and secondary growth impact analysis in Task 5.
- Economic opportunities and impacts.

The results of the alternatives evaluation will be presented for public comment per the Public and Stakeholder Engagement Plan. Comments from the public in combination with the results of the alternatives analysis will be presented to the Technical and Policy Committees to support their recommendation to the Agency of Transportation on which alternatives should be carried forward to an EIS.

Task 7. Implementation Plan

The PELS will describe the steps and timeline to move the recommended alternatives forward to the EIS. It will identify the planning actions necessary to support implementation of the land use scenarios in the corridor including actions that may be necessary to manage potential land use changes that may be incompatible with local plans.

It will identify and describe potential funding strategies and sources beyond the use of formula federal and state transportation funds which may include transportation and other federal program grants, public private partnerships, and value capture options.

Task 8: Draft and Final Reports

Consolidate all deliverables as appropriate into draft and final reports for review by the Technical and Policy Committees for comments from the public and stakeholders per the engagement plan.

All data, including traffic counts, GIS data, and CADD files will be conveyed to VTrans so they can be used as a foundation for work in the EIS.

The following pages represent the scope of work proposed by the Contractor and accepted by VTrans. The scope provided is now part of the scope of services to be provided under this contract.

SCOPE OF WORK

The following sections detail the WSP Team's approach to completing the scope of work outline in the RFP, including proposed innovations and examples of our success in applying these approaches on other projects.

Task 1: Project Kick-off and Scope of Work Refinement

Task 1 will setup the project for success by ensuring a shared understanding of task goals and outcomes, communication protocols, and risks to be managed. The WSP Team will organize a virtual joint kickoff meeting with the Technical and Policy Committees to present our proposed scope of work and schedule.

The presentation and draft schedule will be provided before the meeting for review. The primary purpose of the kickoff meeting is to discuss committee questions or clarifications on our proposal and work towards consensus on the necessary scope revisions. Kickoff meeting participants from the WSP Team will include the project manager, deputy project manager, task leaders, and the principal-in-charge as shown in the organizational chart (see Section D).

After the kickoff meeting, the WSP Team will provide a summary of the meeting, proposed revisions to the scope of work, and an updated project schedule. The VTrans/ACRPC management team will review the revised scope of work and confirm it is acceptable. Once finalized, a determination on any contract and budget modifications will be made and executed.

Task 2A: Public and Stakeholder Engagement Plan

Public Involvement Plan

WSP Team's Public Involvement (PI) specialists, led by Laura Toole, bring years of experience supporting projects in Vermont and New England and will execute a PEL specific public outreach program throughout the project.

The WSP Team will develop a comprehensive Public Involvement Plan (PIP) to map out all public outreach activities. The PIP will facilitate open communication between the project team, stakeholders, and the public and will be aligned with the scope of work, schedule, and PEL study objectives. This plan will identify clear public outreach goals and milestones in the PEL study process. Stakeholders with a particularly high degree of interest in the project (such as the Conservation Law Foundation, Vermont Public Interest Research Group, and trucking interests) may be identified in the PIP as potentially benefiting from focus group meetings early in the study. This will allow the planning process to hear and appreciate their perspective early with the goal of reducing the risk of project opposition later. The PIP will be presented to and reviewed by the Technical and Policy Committees before implementation. Our team has created comprehensive PIPs for projects of all sizes; these PIPs have been instrumental in implementing and maximizing public engagement efforts. Our Vermont public involvement experience includes the VTrans Exit 16 Diverging Diamond Interchange, the City of Burlington Champlain Parkway, and Colchester I-89 Bridges. Importantly, our team has deep understanding of outreach specifically for environmental studies of all kinds, including the PEL process.

The comprehensive PIP will identify target audiences for public outreach, including environmental justice populations; the neighboring municipalities of Ferrisburgh, Panton, Waltham, Addison, New Haven, and Weybridge; commuters; the Vergennes Partnership; area schools; large area employers such as Collins Aerospace and Northland Job Corps; first responders; the Addison County Chamber of Commerce; Vermont Truck & Bus Association; Vermont Railways; Tri-Valley Transit; and residents. Review and



WSP's public involvement experience across Vermont.

consultative meetings with the Technical and Policy Committees and VTrans/ACRPC management team will be built into the project schedule and outlined in the PIP. In addition, meetings with key stakeholders, such as joint sessions of the select boards/city council, the ACRPC Transportation Advisory Committee, and full commission meetings, will be included in the project schedule and aligned with the relevant task, as outlined in the PIP. The PIP will include tailored tools and techniques to comply with FHWA Environmental Justice and COVID health and safety requirements. Tools and methods will include but are not limited to; the project website, social media (Front Porch Forum, Facebook, etc.), a brochure, a factsheet, surveys, direct mailers, virtual public meetings and virtual workshops, press releases to the media, Vermont Community Access Television/Channel 17, and radio. We will coordinate with the VTrans outreach staff to incorporate project announcements in social media. Our team of outreach specialists will use their expertise to gather measurable input and convey the PEL study goals to the public. During the COVID-19 pandemic, our PI team has risen to the challenge of continuing public engagement in a safe manner. Across New England, we facilitate virtual public meetings, workshops, and surveys to gather public input and convey findings during the alternatives analysis process.

Agency Coordination Plan

The WSP Team will prepare an Agency Coordination Plan as part of the PEL study to formally identify cooperating agencies and the roles and responsibilities of each agency in the study process consistent with 23 USC 139. The Agency Coordination Plan will detail the anticipated PEL study schedule and the two formal concurrence points in the study (purpose and need and initial alternatives screening). We propose to consult with the cooperating agencies on the alternatives to be advanced for further study, however this is not envisioned to be a formal cooperating agency concurrence point during the PELS. The alternatives to be advanced to NEPA will be endorsed by the Policy Committee at the conclusion of Task 6. The Agency Coordination Plan will also detail the opportunities agencies will have to provide input throughout the study, including on the proposed methodologies to evaluate the alternatives, baseline data collection, and environmental impact indicators to be considered in the comparison of alternatives. The Agency Coordination Plan will identify logistical details such as the length of time agencies will have to review documents, the anticipated schedule of interagency meetings (including an agency kickoff meeting), and how agency comments will be incorporated in the project record.

The Federal Highway Administration (the anticipated federal lead agency for any potential future NEPA process) will participate as a member of Policy Committee and will be invited to engage in greater detail in the project through the Technical Committee. Other federal and state agencies with permit authorizations or special expertise in the issues

Table 2: Potential Agencies to Invite to Participate in PELS*

FEDERAL AGENCIES
<ul style="list-style-type: none"> • Federal Highway Administration (FHWA) • U.S. Army Corps of Engineers (USACE) • U.S. Coast Guard • U.S. Environmental Protection Agency (USEPA) • U.S. Fish and Wildlife Service (USFWS) • U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) • U.S. Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA)
NATIVE AMERICAN TRIBES
<ul style="list-style-type: none"> • Stockbridge-Munsee Band of • Mohican Indians • Delaware Tribe • Elnu Abenaki Tribe • Nulhegan Abenaki Tribe • Koasek Traditional Band of the Koas Abenaki Nation • Abenaki Nation at Missisquoi
STATE AGENCIES
<ul style="list-style-type: none"> • Agency of Natural Resources • Agency of Commerce and Community Development • Agency of Agriculture, Food and Markets

** to be supplemented through additional research during preparation of the agency coordination plan and to incorporate Technical Committee input*

expected in the project will be identified and invited to participate in the study process as cooperating agencies. Federal and state recognized Native American Tribes will also be invited to participate. Table 2 summarizes an initial list of agencies that may be considered for invitations to participate in the study, subject to refinement by the Technical Committee. The Agency Coordination Plan will also explain the role of the Technical and Policy Committees in the study and that these committees will be the primary means of gathering feedback from VTrans, FHWA, ACRPC and the seven study area municipalities.

Task 2B: Purpose and Need Statement

The Purpose and Need Statement is a critical element of the subsequent alternatives analysis, and therefore, must be supported by robust public outreach and data analysis. Utilizing the Purpose and Need Statement in the 2019 VT 22A Truck Route Study as the starting point, our team will collaborate with VTrans, ACRPC, cooperating agencies, and the study area communities to develop a Purpose and Need Statement that will meet PEL/NEPA requirements.

Cooperating agency concurrence with the Purpose and Need Statement supports eventual project compliance not only with NEPA, but also with other substantive environmental requirements including Section 404 of the Clean Water Act (USACE basic project purpose). The Purpose and Need Statement should be focused on the problem at hand yet worded broadly enough to apply to a range of alternatives. The framing of the Purpose and Need Statement is also critical to addressing FHWA's requirements with respect to logical termini/independent utility (23 CFR § 771.111).

Project objectives specified in local and regional transportation/land use plans provide an important foundation and support for the purpose and need and will be considered in preparing the updated statement. The terminology of the "Vergennes Economic Corridor" and preliminary consideration given to potential economic development opportunities along the alternate truck route in the 2019 study indicates the need to consider whether and how encouraging economic development should be included as an element of the Purpose and Need Statement. The decision on how economic development is incorporated in the statement will have a major effect on the alternatives screening process and subsequent NEPA evaluation of the project. For example, if the economic element of project purpose is tied to encouraging new commercial/industrial development to increase the tax base, this may narrow the study focus towards new roadway alternatives that will create new access to undeveloped land.

The inclusion of economic development in the Purpose and Need Statement creates several expectations under NEPA with regard to the evaluation of indirect effects. If economic development is explicitly stated as a project purpose, case law has shown that the NEPA document must address the environmental impacts of potential future land development. Potential land development impacts then can become an issue in federal and state permitting process, with resource agencies requesting that transportation agencies take measures to mitigate for future decisions by private developers over which the transportation agencies lack any direct controls. Our project manager has addressed induced growth issues for numerous NEPA highway projects, including the I-93 Exit 4A Supplemental EIS that included economic development as a specific element of the project purpose (see Section G).

Background Data Review

To inform the development of the Purpose and Need Statement, the team will conduct a thorough review of relevant state, regional, and local plans, including the 2019 Alternate Truck Route Study and earlier predecessor studies for the VEC; the Addison County Regional Plan; the VTrans Freight Plan Update; the Vergennes Municipal Development Plan 2020-2028; and land use plans of the other six study area municipalities.

Public Involvement

A variety of public outreach activities will be conducted to aid in the development of a well-rounded, inclusive Purpose and Need Statement, including the following:

- Individual meetings in each of the seven study area municipalities (e.g. the WSP Team presenting the project at individual town/city meetings of the select boards/city council and the planning commissions).
- Meeting with ACRPC Transportation Advisory Committee and the full Commission.
- Focus groups (up to four) comprised of key local stakeholders and one-on-one interviews as needed (up to five) will be conducted. The focus groups and interviews will be conducted by trained staff using a custom discussion guide outlining a framework of questions and topics to guide conversation specific to the study area.
- Public surveying tools, such as Metroquest, an interactive online planning and surveying tool, will be created and distributed to the public to gather input at various stages throughout the study as outlined in the Public Information Plan.
- Public information meeting to present draft purpose and need statement for review and input.

Summaries of meetings and interviews will be prepared to document perceptions of the various facets of the project need.

Agency Coordination

An interagency kickoff meeting will be held to review the agency coordination plan, protocols for communications, and the proposed data collection proposed to support the Purpose and Need Statement. One cooperating agency meeting will be held to obtain agency input on the draft Purpose and Need Statement, and review the technical data supporting the project need. Once any cooperating agency comments are addressed, the cooperating agencies will be asked to concur with the revised Purpose and Need Statement in writing.

Study Area

The study area is anticipated to consist of the seven study area communities. The WSP Team will prepare a map and a narrative rationale for the project study area, considering the location of Vergennes, and the need to account for potential direct or indirect traffic/land use effects of an alternate truck route on the surrounding communities.

Data Collection

This section describes the baseline data collection proposed specifically to support the development of the Purpose and Need Statement, including traffic data and noise monitoring. Additional environmental baseline data collection that will support the evaluation and comparison of alternatives is included as part of Task 6. The reason for delaying most environmental data collection until Task 6 is to enable a more targeted environmental evaluation of specific corridors than would be possible for the entire study area.

The WSP Team will work closely with VTrans, ACRPC, the City of Vergennes, surrounding towns, and other stakeholders to compile data, information and previous analysis and studies to enable a **comprehensive review of the VT 22A, VT 17, and US 7 corridors**. This effort will maximize use of existing data to compile base mapping data for the study area, traffic volume counts including truck data, crash data, and other relevant transportation information.

Freight Movement Data Collection

The VT 22A Truck Route Study assembled traffic counts for the areas within and around Vergennes, including baseline truck volumes.

The VT 22A Truck Route Study did not take a broader view of the movements of goods traveling through Vermont, which will be a very important element of supporting the project need. The WSP team hypothesizes that VT 22A's geometry and lack of low-speed sections makes it an attractive alternative to US 7 for trucks traveling to/from Burlington, and possibly beyond, such as in New York City and Montreal. Based on the Freight Analysis Framework, 86% of the goods to/from Vermont travel a distance less than 250 miles. The Vermont Freight Plan's statewide truck volume map shows that a significant amount of trucks using VT 22A are coming from New York, either crossing the Lake Champlain Bridge on VT 17 or crossing the bridge over Poultney River on US 4 in Fair Haven, the latter showing the highest truck volume using VT 22A. Existing traffic counts from VTrans show that approximately 69% of the trucks on VT 22A traveling through Vergennes are coming from Fair Haven, while 31% are crossing the Lake Champlain Bridge. From Fair Haven, there are two main routes to Burlington: VT 22A and VT 30/US 7. The truck traffic traveling on VT 22A is three times higher than that on VT 30. Normal travel times between the New York/Vermont state line on US 4 near Fair Haven and Vergennes is 53 minutes on VT 22A with a distance of 44 miles, while the normal travel time on VT 30/US 7 is 60 minutes with a distance of 48 miles. Our truck data collection and analysis effort will consist of the investigation of the movement of goods between points south of the study area and the origin-destinations, and a detailed evaluation of travel times between Fair Haven and Burlington along VT 22A, VT 30 and US 7. Specific elements of data collection related to freight movement patterns will consist of the following:

- **Truck Survey.** It is important to understand the truck flows, origins and destinations so that the alternatives selected meet the truck demands.

While previously completed work has identified the origin and destination patterns, a survey and review of operators and businesses that rely on VT 22A is essential to understanding why they choose to travel through Downtown Vergennes. This information will allow the project team to determine the potential impacts of shifting trucks to alternative routes (VT-17 or a bypass). This outreach can be particularly useful because it will also help quantify any potential impacts to major truck operators through the corridor. WSP will leverage the Vermont Truck and Bus Association to identify a subset of its constituency that currently traverses VT 22A regularly. Using a brief survey tool, we can identify priorities and needs of commercial operators, understand what their drivers experience traveling through Vergennes, and ultimately provide a database of contacts for additional outreach as the project progresses.

- **Vermont Freight & Rail Plans.** We will be evaluating the plans to identify existing trends, demands, and type of commodities that trucks carry within the study area.
- **Freight Analysis Framework Version 4 (FAF4).** We will be evaluating general freight movement characteristics for the region from the FAF4 developed through a partnership between the Bureau of Transportation Statistics (BTS) and FHWA. It provides estimates for tonnage, value, origin and destination, commodity type, and mode.

Geometric and Signal Timing Data

- **Street configuration and function.** We will catalogue existing roadway geometry, lane widths, lane assignment, traffic control, crosswalks, sidewalks, bike lanes, and share-used paths on all roads within the downtown Vergennes area. We will also catalogue the same information for VT 22A, VT 17, and US 7 in the towns Addison, Panton, New Haven, Weybridge, Waltham, and Ferrisburgh. This information will be used for the evaluation of the existing traffic operation conditions and the different alternatives. For a new truck route alignment, we will also catalogue existing lane geometry and existing lane widths for: Panton Road between VT 22A and Basin Harbor Road; MacDonough Drive between VT 22A and Walker Road; and Comfort Hill Street between MacDonough Drive and Tupper's Crossing.

- **Location and type of on-street parking and loading zones.** WSP will coordinate with the City of Vergennes and catalogue the existing on-street parking regulations and zones.
- **Signal timings.** We will work with VTrans and the City of Vergennes to gather the existing signal timings at all the signalized intersections within the study area. If unable to gather, we will perform a field visit.

Traffic Volumes

- **VTrans Traffic Data Management System (TDMS).** We will compile multimodal transportation volume data (where available) in all modes—including automobiles, buses, heavy vehicles, pedestrians, and cyclists—at key locations within the project area for assessing transportation patterns and operations. This will include daily traffic volumes for important points and peak period turning movement counts (TMCs) for critical intersections in the study area using existing data. To the degree possible, we will obtain existing data from previous reports and/or agencies such as VTrans and ACRPC. We will supplement this data with additional counts, where the data is missing and needed. WSP also understands that COVID-19 will likely impact the ability to collect new data. We will calculate an adjustment factor based on pre-COVID data which will be applied to any newly collected traffic data. Our team also has broad data collection experience from emergent providers including Streetlight, Inrix, and AirSage. The TMCs will be gathered at up to 16 intersections on the VT 22A, US 7 and VT 17 corridors.
- **Traffic Video Detection and Monitoring.** We will install two video detection devices on VT 22A to collect both vehicle and truck counts entering and exiting Vergennes. They will collect data for a 24-hour/7-day period and will also be used to monitor any queues and to estimate travel times within the downtown area. The data obtained from these devices will be used to calibrate vehicle and truck counts from the TMCs, freight plan, and FAF4.

Existing Conditions Traffic Analysis

WSP will develop a network model that will cover VT 22A, VT 17, and US 7 throughout the towns of Addison, Panton, Waltham, Weybridge, New Haven, Ferrisburgh, and the City of Vergennes. With the available and newly collected count data, as well as the travel demand model, freight plans and FAF4, we will develop the existing vehicular and truck volumes. Peak periods will be established, which can include a weekday morning peak, weekday midday peak, weekday afternoon peak, and weekend peak. Once the existing conditions data have been entered in the models, we will employ the following performance measures to evaluate the existing conditions:

- **Level of Service.** We will evaluate the existing volume data and new traffic counts to determine motor vehicle traffic capacity using Synchro, SimTraffic, and/or comparable software. The focus will be on those intersection hot-spots determined most likely to have congestion issues based on the traffic volumes and geometric conditions.
- **Queues.** We will evaluate the existing queues at select signalized and unsignalized intersections within the study area along VT 22A, VT 17, and US 7 using Synchro, SimTraffic, and/or comparable software.
- **Travel Time.** We will evaluate the existing travel times along VT 22A, VT 17, and US 7 within the study area using Synchro SimTraffic, and/or comparable software. We will compare resulting travel times within the downtown Vergennes area against the travel times from the video detection data.

Existing Safety Data and Evaluation

The existing conditions safety evaluation will consist of the assessment of the type, prevalence and patterns

of crashes including vehicles, trucks, bicycles and pedestrians on VT 22A, VT 17, US 7 and within downtown Vergennes. The WSP Team will gather 2015-2019 crash records from VTrans statewide crash records database at up to sixteen intersections. Anecdotal safety data will be collected from the Vergennes Police Department and Vermont State Police.

The safety analysis will be conducted by Bruce Nyquist, PE who is extremely familiar with the data and the general safety history of the project area. Based on an initial investigation of the 2012-2016 High Crash Locations, the intersection of VT 22A and VT 17 is identified as a high crash location, as is the segment of VT 22A in downtown Vergennes. We will work with VTrans and law enforcement agencies to collect crash reports and local anecdotal safety experience to further evaluate the causes. There is also a section of VT 22A between Otter Creek and Green Street that has an 11% grade; local officials constantly report trucks losing their transmission when negotiating the grade, creating a safety concern warranting further evaluation.

We are also familiar with safety issues on potential alternative corridors such as VT 17, specifically the Hallock Road intersection. VTrans has identified this intersection as a safety priority given the severity of crashes over the years by adding flashing beacons and gate posted intersection warning signs with advisory speed plaques. The southbound Hallock Road approach has poor sight distance for vehicles traveling westbound on VT 17.

Transit, Pedestrian and Bicycle

To identify baseline conditions and issues for pedestrians, bicyclists, and bus riders, WSP will review publicly-available GIS and General Transit Feed Specification (GTFS) data from VTrans, ACRPC, transit operators, and the local municipalities pertaining to multimodal operations, access, safety, and facility inventories. Active transportation and transit advocates will also be engaged in the Task 2 public outreach.

Orthoimagery, Topographic and Cadastral Data

Up-to-date orthoimagery and parcel data base maps will be needed for mapping to support the Purpose and Need Statement. This data will be downloaded at the start of the project from the Vermont Center for Geographic Information (VCGI) and coordination will occur with ACRPC to obtain any updated datasets not available from VCGI. The orthographic data sets currently available for Vergennes have a resolution of 0.15m and an acquisition date of 2017.

Noise and Vibration

To help substantiate the existing truck-related community impacts on Vergennes, the WSP team will collect existing conditions noise and vibration data and incorporate this information into the discussion of the project need. The availability of noise information and concerns regarding vibration impacts to historic buildings (such as the Vergennes Opera House) were concerns raised by the public during the 2019 study. WSP will collect existing ambient Leq(h) noise level data at one location for up to 48 hours to determine the worst noise hour and to understand the diurnal variation in the sound level. The integrating sound level analyzer (meter) used to obtain existing ambient noise monitoring data shall meet ANSI and IEC Type I or Type II specifications. To characterize existing vibration exposure, WSP will use a laboratory calibrated seismometer to collect baseline ambient vibration measurements for up to 48-hrs at one exterior location.

Purpose and Need Technical Memo

The WSP Team will update the purpose statement of the project (a single sentence) taking into consideration the input gained through the various outreach and data collection activities, and to conform to FHWA guidance on the Purpose and Need Statement. A longer narrative analysis of each element of the project need will be provided, focusing on understanding of the underlying freight trends behind VT 22A truck traffic. The

updated Purpose and Need Statement will be documented in a technical memo that includes supporting technical information from the baseline data collection, as well as a summary of the input obtained from the public and agency engagement efforts. The memo will be supported by study area photos illustrating the needs discussed in the text, as well as graphics detailing the study area and existing conditions/trends.



Public concerns regarding the potential for a hazardous materials spill due to a truck accident in Vergennes have been a recurring theme in prior outreach for this project.

Two rounds of review/revision by the Technical Committee are anticipated before formal adoption by the Policy Committee and final concurrence by the cooperating agencies.

Task 3: Transportation Alternatives Initial Screening

The objective of initial alternatives screening is to reconsider, in light of the updated Purpose and Need Statement, all potential alternatives from previous studies; concepts suggested by the public in prior outreach efforts; and public/agency suggestions on alternatives for the current study. Alternatives remaining after the initial screening will be developed in further detail in Task 4.

Public Involvement

Public outreach efforts during this task will include a series of workshops (up to three) designed to obtain input on alternatives that will be considered in initial screening, as well as feedback on the proposed initial screening criteria. The team will design workshops to safely, effectively, and clearly share alternative visuals, information about the alternatives, and provide multiple ways for attendees and the public to provide feedback. Feedback will be collected through live comments, online comment forms, and in-meeting polls. The workshop series will share the same information, but will be conducted separately to accommodate area communities, area businesses and residents to provide ample opportunity for stakeholder input. Once the draft screening results are available, the WSP Team will host a public information meeting to share the draft screening results and gather further input in order to finalize the initial screening step.

Agency Coordination

The draft screening criteria and its results will be vetted with the cooperating agencies, and cooperating agency comments addressed. At the conclusion of initial screening, the cooperating agencies will be asked to provide written concurrence with the alternatives to be eliminated from further consideration.

Initial Long-List of Alternatives

The alternatives to be evaluated in initial transportation screening are anticipated to include the following (to be refined/expanded based on Technical and Policy Committee input and public outreach):

- New roadway alternate truck routes, including the VEC as recommended in the 2019 study, as well as older concepts such as the far west alternative (corridor A) and the southern alternative (corridor C) from the 1995 study.
- Alternate truck routes using existing roadways, such as the VT 17 alternative considered in the 2019 study.
- Localized traffic calming measures in Vergennes that may encourage trucks to use alternate routes.

- Regional alternative concepts for reducing trucks in Vergennes suggested in previous public comments, such as encouraging through trucks to stay on I-87 in New York.
- Mode alternatives, such as encouraging freight rail or water-based freight movement. The robust freight data collection in Task 2 will be critical to discussing the feasibility of these options in light of the types of goods and the destinations for the goods moving through the project area.
- Emerging new mobility technology that could change livability impacts of trucking: automated and connected vehicles, truck electrification, advanced aerial mobility applications in the freight industry etc. WSP's Future Ready initiative provides access to global thought leadership and scenario planning resources to productively frame discussion of future changes and uncertainty.

Initial Screening Criteria and Methodology

The WSP Team will develop qualitative screening questions for assessing the performance of alternatives in their ability to meet the purpose and need. Depending on the exact wording of the updated Purpose and Need Statement, these questions may include the degree to whether the alternative would reduce truck traffic in downtown Vergennes to address quality of life impacts, whether it would impact other communities, and the degree to which it would support economic growth/vitality. If safety is determined to be an element of the Purpose and Need Statement, a screening question specific to addressing pedestrian safety or high-crash locations may be included.

Environmental issues will be considered at a very high level in the initial screening with a focus on potential fatal flaw issues. Existing information on environmental resources will be gathered and displayed for the various alternatives on project base maps. Environmental screening criteria and issues suggested by cooperating agencies will be considered for incorporation in the screening methodology. Criteria determined infeasible to implement during initial screening will be reconsidered for use during the later alternatives evaluation phase of the study.

Although the Vermont Statewide Model does not have sufficient granularity to assess local level alternate truck routes around Vergennes, the model will be considered a potential resource for the study if a quantitative screening evaluation of a potential alternative that could divert trucks on a large geographic scale is required (such an evaluation is not included in the base scope/cost).

Initial Screening Technical Memo

The initial screening methodology and results (including a matrix-format summary) will be documented in the initial screening technical memo. The memo will include a map of the approximate location of alternatives that are feasible to be shown on a map (some alternatives may not lend themselves to this type of mapping). The memo will also summarize the public and agency outreach undertaken during this phase of the study and will outline how that input was incorporated into the screening decisions. Two rounds of review/revision by the Technical Committee are anticipated before formal adoption by the Policy Committee and concurrence by the cooperating agencies.

Task 4: Alternatives Refinement

The purpose of Task 4 is to define the alternatives shortlisted in Task 3 to a greater level of detail that is appropriate for this study. For cost estimating purposes, it is assumed that the alternatives will involve up to three primary corridors. Within each alternative corridor, up to two design variations will be developed. One of the alternatives will include a refined version of the VEC alignment recommended by 2019 VT 22A Truck Route Study.

Public Involvement

The WSP Team will organize up to three public workshops to present the draft concept plans for the alternatives and obtain public comments and input. During the alternative refinement process, the PI team will again use a surveying tool, such as MetroQuest, to continue public dialogue and input.

Agency Coordination

One cooperating agency meeting will be held during Task 4 to obtain input on the draft concept designs, especially as they pertain to avoidance/minimization of environmental issues.

Concept Engineering

Our staff has provided similar preliminary alternatives design for pre-NEPA activities for various clients in the region, including conceptual alternatives development during the scoping process for the Circ-Williston EIS. Key members for that project are proposed for this assignment, including civil lead Timothy Higginson, PE. The steps listed below will be followed to define the shortlisted alternatives in more detail:

- Review information gathered in Task 2 on relevant design constraints include existing ROW and land use, environmental resources, location of adjacent roadways, municipal boundaries, etc.
- Confirm the design controls that will be used in the design of the various alternatives. These controls include design speed, lane and shoulder widths, maximum vertical grades, vertical clearance required by the US Coast Guard over Otter Creek, and other requirements set by the Vermont Agency of Natural Resources.
- Analyze the 2019 VEC to identify its major cost drivers and incorporate potential cost saving innovations, considering items such as the structure over Otter Creek, the value of the parcels impacted by the new roadway alignment, the environmental impacts and resulting mitigation, intersection types, etc. The location, length and cost of the Otter Creek bridge structure will be optimized considering the environmental resources present in the area, the topography, and the skew of the crossing.
- Determine possible intersection configurations for the various roadway crossings and tie-ins. These may include roundabouts, stop-controlled or signalized intersections, or grade separations. Identify the most promising intersection types at each crossing for presentation to the public and agencies for feedback.



VT 22A in Vergennes needs to service local and through-traffic, pedestrians, bicyclists and transit providers.

- Determine the need for and the location of pedestrian and bicycle facilities for each alternative.

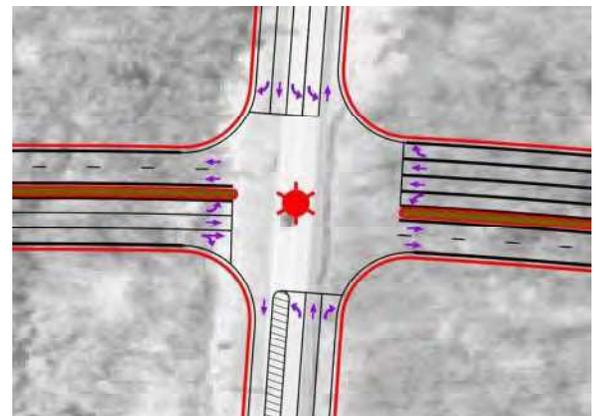
Conceptual design plans will be provided for the alternatives (up to three corridors and two variations within each corridor) to facilitate their evaluation and comparison in Task 6. It is expected that the following plans will be provided for each alternative: 1) typical sections, 2) horizontal layout plans, and 3) vertical profiles. These plans will depict lane and shoulder widths, location and type of structures (Otter Creek, grade separated intersections and major drainage structures), type and location of the various intersections (roundabouts, stop-controlled, signalized intersections or grade separations) and bicycle and pedestrian facilities. The plans will identify potential locations for stormwater treatment facilities, however such facilities will not be designed.

The plans will illustrate a preliminary project footprint (slope limits) to aid in the early evaluation of environmental impacts. A summary of major utility conflicts and potential right-of-way impacts will be provided, with appropriate disclaimers to make it clear this planning-level information is subject to change and is provided for the purposes of relative comparisons between alternatives.

The horizontal layout will be depicted on 11”x17” sheets at 200-scale and use aerial imagery in the background. Profile sheets will be presented at 200 horizontal scale. Vertical scale exaggeration may be used depending on the elevation range to be shown. It is expected that the OpenRoads software will be used for conceptual 3D modeling of the proposed alternatives to establish the project footprint. WSP has recently been coordinating with VTrans on other projects and is familiar with the intent to migrate to Bentley OpenRoads and implement latest workspace and CAD standards. It is assumed that VTrans will provide the CAD files for Alternative B in the VT 22A Truck Route Study dated Jun 1, 2019.



Horizontal Layout Plan Example 1



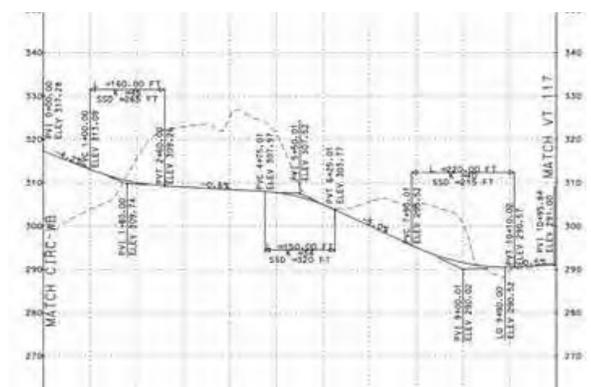
Horizontal Layout Plan Example 2

Visualizations

Up to six visualizations will be prepared to help illustrate key elements of the alternatives (such as the potential Otter Creek bridge structure and connections to VT 22A) in public outreach materials, meetings and on the project website. These visualizations may include photo simulations or low aerial 3D renderings depending on the message or story that needs to be conveyed.

Task 5: Develop Integrated Transportation and Land Use Alternatives for the Vergennes Economic Corridor

Transportation projects alone cannot change surrounding land use. However, in the presence of other supportive conditions (such as land prices, market demand, local land use



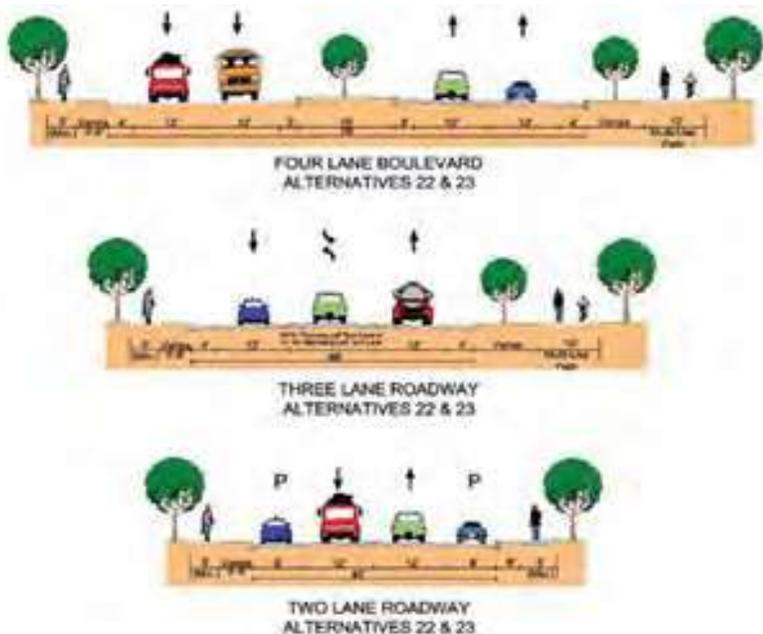
Vertical Profile Example

regulations, and environmental constraints), transportation improvements can affect the accessibility of places, which in turn can have an impact on land use and the environment.

The purpose of Task 5 is to develop up to three integrated transportation/land use scenarios for the VEC. As discussed in greater detail below, this type of visioning exercise has tremendous potential benefits for helping bring the study area communities together to decide on future priorities, and to ensure that land use and transportation planning goals are well coordinated. It is important to note, however, that any land use planning recommendations developed during this task are separate from the potential FHWA transportation project to be advanced to NEPA. These land use

recommendations will not be subject to cooperating agency concurrence points and, are included to help local planning/decisions only and will not be binding on any of the study area municipalities. However, land use forecast information may be very helpful in the future when addressing indirect and cumulative effects during the NEPA process.

We have applied this research experience on controversial and litigated highway projects nationally, including Vermont’s Circ Highway, New Hampshire’s I-93 widening program, I-93 Exit 4A, and Alabama’s Birmingham Northern Beltline, among others. Our team blends WSP’s NEPA- compliance oriented indirect effects expertise with the community planning and visioning expertise of Chris Sargent and Tripp Muldrow. Chris has successfully led similar visioning efforts throughout Vermont (including the Route 5 Corridor Master Plan described in Section G) and is very familiar with the local context as much of his career included working with Vermont regional planning commissions, including ACRPC. Tripp Muldrow, FAICP, is a nationally recognized leader in the intiuition of economic development strategies for small and medium sized communities and will provide strategic oversight of the visioning effort. Chris and Tripp have successfully worked together on similar planning efforts in Vermont.



Typical Section Example



Figure 1: Factors that Impact Land Use Change

Benefits of Incorporating Visioning in the PELS

While the NEPA process requires an analysis of the environmental, economic, and societal impacts of a proposed alternative, it is not required that the process explicitly engage communities in a proactive process of visioning to position them for eventual implementation of a preferred alternative. Lessons learned from projects like the Morrisville Alternate Truck Route show that there is benefit in engaging with a community directly to understand what their long-term vision for the future is as it relates to a proposed project like the VEC. The time from planning to construction is often lengthy; therefore, having a well-defined 10-20 year vision that has been vetted by the community can provide valuable guidance to VTrans and to stakeholder communities throughout the implementation process.

By carefully communicating with each stakeholder community, a community's vision can be considered and incorporated (where appropriate) into the design phase. The community vision may include elements such as the degree of pedestrian/bicycle accommodations on the new alignment, and the overall balance between encouraging economic development and protecting rural landscape character. These objectives can be incorporated in the development of the VEC directly (such as pedestrian accommodations and access management), or recommended for inclusion in local plans (such as zoning changes or infrastructure investments to support new growth).

By directly engaging municipal officers and local stakeholders in a process that includes a direct and secondary growth impact analysis, economic impact assessment, and a strong engagement and visioning element, each community will have a voice in the future of the VEC. We propose the following:

Baseline Land Use/Zoning Data and Policy Review.

The WSP Team will gather and review existing land use policy and regulation to understand each community's present-day approach to planning. This data will be used to inform the impact analysis and economic analysis and will provide a relevant starting point for the planning team as it engages each community.

The land use and zoning data review will also shape land use forecasting and heighten our understanding of the types and densities of development that are allowed under current policies along the VEC.

Infrastructure/Utilities Review.

The availability of supporting infrastructure is critical to anticipating the likely pattern of land use change. Many types of higher density development require water and sewer service and may not be able to locate in areas lacking this service. Data will be collected as it relates to existing and planned infrastructure, including areas with and without sewer service and water service. For lower-density residential development, septic-suitable soil mapping will be considered.

Environmental Constraints.

A high-level GIS assessment of areas where development is unlikely due to environmental constraints will be conducted, including data on wetlands, riparian areas and conserved lands.

Population, Household and Employment Data.

Population and employment data from the U.S. Census, ACRPC, Vermont Department of Labor, and Vermont Agency of Commerce and Community Development will be assessed to describe existing socioeconomic conditions and trends. Additional local data sources such as building permit and site plan review records will also be considered to understand where growth has occurred recently and the types of development most common in the study area. In and out migration data will be reviewed. We recognize that population trends for Addison County show a slight overall decrease, but that regional and global trends could change

this dynamic in the future (e.g. potential for climate-related migration or decentralization of certain types of employment due to remote working and new mobility options). The uncertainty associated with these potential scenarios will be discussed and disclosed; however, a detailed analysis of how these trends may specifically impact the study area will not be practicable within the project scope.

Regional and Municipal Interviews.

WSP team planners will coordinate individual meetings with municipal staff including public works, transportation and land use/zoning officials in order to identify any planned or future infrastructure investments in the project area and to assess existing and future growth patterns (with and without the VEC). Meetings will be limited to one meeting per community and will be conducted virtually. This task will also include interviews with ACRPC planning staff.

Land Use Forecasting.

In order to effectively discuss land use alternatives, it is first necessary to develop a No Project scenario (e.g. how the study area land use is expected to change without the VEC), and a business-as-usual scenario (e.g. the land use impacts of the VEC that could occur assuming the existing land use regulation framework remains unchanged). These two scenarios will provide the appropriate context for stakeholders to react to and provide more targeted input during subsequent visioning efforts. For example, low-density residential development may be the most likely form of development in areas along the VEC currently zoned for this use, which may prompt consideration of development that is meant to preserve open space and agricultural character. The No Project and business-as-usual scenarios will integrate existing regional and local land use projections, socioeconomic trends, and the input of local land use planning experts on the potential indirect effects of the VEC. A “growth pressure” map will be prepared to show in a generalized manner the areas where land use changes are currently planned or anticipated to occur due to the VEC.

An appropriate study area boundary and analysis year timeframe (such as 20- or 30-year outlook) will be established for the land use forecasts in coordination with the technical committee.

Public Outreach and Visioning.

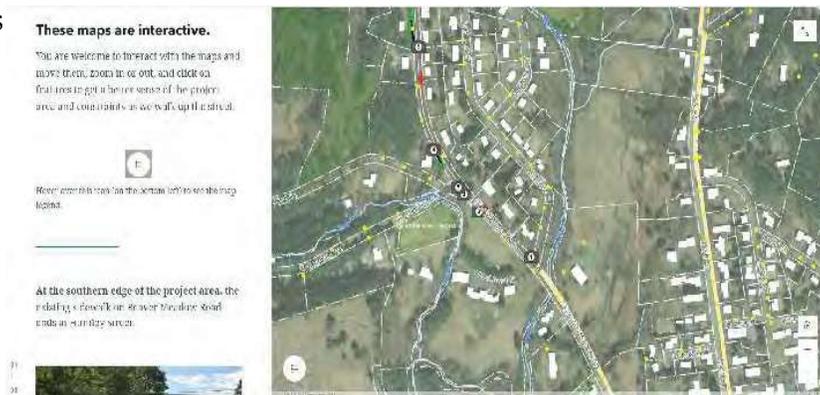
- **Kick-off Meetings.** The WSP Team will meet with Planning Commissions in the seven key stakeholder communities to begin the process of developing a vision within each community for the VEC. As part of this process, the team will conduct a brief discovery process that will allow for the identification of any key stakeholder groups that should be directly involved. The team will present the initial assessment of existing conditions.
- **Develop Project Overview Materials.** It will be essential at the outset of the project to communicate the purpose of the visioning process in a clear and concise manner. The project team will develop engaging

The WSP Team has tremendous strength in understanding the subtle legal sufficiency issues and pitfalls to be avoided while addressing integrated transportation/land use issues in NEPA.

- ◆ In 2002, WSP authored the National Cooperative Highway Research Program (NCHRP) Report 466: Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects.
- ◆ Our step-by-step approach has been recommended in the Federal Highway Administration's interim guidance on indirect and cumulative impacts and widely adopted by states, including North Carolina, Wisconsin, Washington, and California.
- ◆ Our project manager, Leo Tidd, AICP, developed Montana DOT's research and desk reference on Assessing the Extent and Determinates of Induced Growth.

and informative materials. These materials will be distributed digitally to stakeholder and local officials.

- **StoryMap Platform.** Good community engagement is multi-faceted with both online and offline options. The Planning team will create and maintain a GIS-driven StoryMap that will provide a visual way to discuss the key elements of the visioning process in each community. Throughout the project, D&K will update this StoryMap to include useful data to the community and guide viewers through the planning process.



StoryMap Platforms are a powerful public engagement tool to help with envisioning what is to come.

- **Community Visioning Sessions.** We will organize and facilitate a virtual visioning session in each stakeholder municipality that introduces the broader community to the project and provides an opportunity for them to communicate their vision for the future of the VEC. In addition to a quick summary of the process and a project overview, we would utilize a “world café” style format using virtual breakout rooms to tackle key questions related to the development of a vision. This information will be used to inform the development of each community’s preferred land use scenario, which will ultimately be compiled into a cohesive land use vision for the corridor.
- **Develop Draft Vision.** With information collected at prior meetings, the Planning Team will develop an initial draft of a land use vision for the VEC in each stakeholder community. The draft document will provide background and supporting data from the growth and economic analyses, as well as a summary of public input collected. In addition, maps, diagrams, plans, and one to three 3D renderings will be utilized to demonstrate the desired vision. Finally, the vision report will include an element which focuses on the strategies needed to support the vision as it relates to the VEC.
- **Present Draft Vision to Planning Commission.** Each local Planning Commission will be provided the opportunity to review and provide feedback on the Draft Vision Document. This feedback will be collected, documented and responded to before a final draft of the vision is completed.
- **VEC Corridor Land Use Vision.** Municipal Visions will be compiled and organized into a single, unified document that will provide VTrans and stakeholders with a well-documented strategic plan that can be used during the alternative review process to refine alternatives in a manner that supports Vergennes and stakeholder communities.

Task 6: Alternatives Evaluation and Recommendations

Task 6 presents the opportunity to evaluate and compare the alternatives developed in Task 5, in conjunction with additional public and agency feedback. The objective of this task is to help the Technical and Policy Committees identify a reasonable range of alternatives to be advanced to the subsequent NEPA review. A formal cooperating agency concurrence point on the alternatives to be advanced to NEPA is not proposed, but the agency coordination on the alternatives during this task will provide a solid foundation for formal concurrence with the alternatives during the NEPA phase.

Public Involvement

During the alternative evaluation and recommendation portion of the study, the PI team will revisit with the

groups engaged during Task 2.

- Individual meetings in each of the seven study area municipalities to review the conceptual alternatives and provide recommendations (e.g. VTrans/ACRPC project team presenting the project at individual town/city meetings of the select boards/city council and the planning commissions).
- Meet with the ACRPC Transportation Advisory Committee and the full Comissions.
- Focus groups (up to four) comprised of key local stakeholders and one-on-one interviews as needed (up to five) interviews. Similar to Task 2, these focus groups and interviews will be conducted by trained staff using a customized discussion guide.
- The team will host a series of public workshops (up to three) to present the draft results of the evaluation of the transportation, land use and environmental effects of the alternatives. The workshop series will share the same information but will be conducted separately to provide ample opportunity for community input. The format of the workshop will allow the public to understand how the alternatives were evaluated, ask questions of the design team, and share detailed insight and feedback. Meetings will provide multiple ways for attendees and the public to provide feedback. Feedback will be collected through live comments, online comment forms, and in-meeting polls. Our team will document and record meeting feedback and comments.

Summaries of meetings and interviews will be prepared as documentation.

Agency Coordination

In order to make the alternatives evaluation successful, we propose to provide the agencies with the opportunity to review the proposed evaluation methodologies before the analyses are undertaken and discuss the comments at an interagency meeting. This way, adjustments can be made early to address substantive concerns and rework loops can be minimized. To provide critical ground truthing of potential environmental issues, the applicable resource agencies will be given an invitation to attend a field review of the alternative corridors. We will organize and attend the field reviews and provide a memo summarizing comments obtained during and following the reviews. After the draft evaluation of alternatives is complete, a third round of agency outreach (including a second interagency meeting) will occur to gather further feedback and reactions. This information will be integrated into the final alternatives evaluation memo deliverable (described at the end of the Task 6 scope of work).

Traffic Analysis

Existing conditions data collection and analysis methods are described under Task 2: Purpose and Need Statement.

Future No Build

The future (2045) no-build condition will serve as the baseline for comparison with the benefits and impacts of the alternatives. The following are the major elements of the future transportation context:

- **Projected future no-build volumes.** WSP will develop a projected transportation network model for the future no-build condition based on existing traffic volumes overlaid with a regional traffic growth factor. We will also consider projected traffic from anticipated development in the corridor, surrounding towns and closer to the Burlington area (which could affect truck trips on VT 22A), and impacts of growth at trip generators in and near the study area.
- **Level of Service, Queues, and Travel Times.** As with existing conditions, we will evaluate the LOS, queues,

and travel times on VT 22A, VT 17, and US 7 within the study area. We will perform these calculations using the same methodologies as the existing conditions. These performance measures will serve as the baseline for assessing the benefits of the proposed alternatives.

Build Conditions

WSP will utilize the future no-build conditions model and modify it accordingly based on the alternatives developed in Task 4. The following are the major elements for evaluation of the different alternatives:

Projected future build volumes. WSP will develop a projected transportation network model for the different future build conditions, considering the potential effects of the alternatives on route choice for autos and trucks, and new trips generated by land use changes.

Level of Service, Queues, and Travel Times. As with the existing conditions and no-build conditions, we will evaluate the LOS, queues, and travel times on VT 22A, VT 17, and US 7 within the study area.

For each of the alternatives, WSP will perform a safety evaluation to address any safety concerns based on Highway Safety Manual (HSM) methods.

Mitigation

The WSP Team will identify potential traffic mitigation measures at a conceptual level to address potential adverse traffic impacts of the alternatives. Identification of areas potentially warranting mitigation will consider the potential for traffic impacts beyond the work limits of the alternatives (e.g. upstream/downstream intersections). These measures may include one or more of the following strategies:

- **Traffic calming.** Identify the range of traffic calming/multimodal access and safety measures that may be appropriate for the study area and possibly on VT 22A outside the study area to encourage trucks to shift to a different route. Assess the effectiveness of these measures at promoting safety, comfort, and attractiveness for all users, along with potential impacts on traffic operations.
- **Landscape treatments.** Develop potential landscape treatments, including street trees, landscaped medians, etc.
- **Access management.** Assess the safety and efficiency of access to key destinations and other transportation facilities. Improvement strategies to consider include traffic circulation improvements, turn restrictions, signal retiming, intersection and driveway reconfigurations, as well as wayfinding systems throughout the study area.



Otter Creek's benefits to Vergennes include power generation, scenic beauty, water-based transportation, recreation and wildlife habitat. The WSP Team's deep understanding of the rural and historic context of the project area will be vital to the success of the PELS.

Multi-modal considerations

Regardless of the type of active transportation infrastructure and transit services provided along the new

corridor, the project's benefits for pedestrians, bicyclists, and transit riders would primarily occur along the existing corridor and stem from shifting the noise, vibration, air emissions, and roadway capacity impacts associated with trucks from Main Street onto the VEC. Furthermore, the development of a new transportation corridor should respond to the needs of active transportation users, bus riders, and those with disabilities, as recognized by Vermont's Complete Streets Law (Act 34) and demonstrated during the launch of the similar Morrisville truck route in 2014.

Pedestrian and Bicycle

In terms of access to existing destinations and services located in downtown Vergennes, the impact of the alternatives on pedestrians and bicyclists will largely be based on the degree to which truck and total vehicular volumes along VT 22A decrease. For assessing pedestrian facilities on a new alignment, key variables affecting the comfort for users include adjacent vehicle speeds, the extent of horizontal and vertical separation, and intersection accommodations.

WSP will assess pedestrian accommodations along the VEC, as well as along key links and nodes of the existing corridor (i.e., cross-streets that intersect the VEC and either terminate downtown or intersect with VT 22A). The qualitative assessment will consider the physical and operational dimensions of both the new and existing roadway. In addition, the team will determine strategic locations where short segments of sidewalk could be developed to unite the new VEC network with existing facilities and enhance connectivity to key destinations along both corridors (e.g., northern halves of MacDonough Drive and Panton Road could be leveraged to connect with Collins Aerospace and Northlands Job Corp, respectively).

Given the high proportion of heavy vehicles and VTrans' prior investigations into bicyclist comfort along such rural roadways, WSP proposes to use the Rural Bicycle Level of Traffic Stress (BLTS) methodology identified within the recent VTrans On-Road Bicycle Plan (Table 3.5) to evaluate segment-level conditions for bicyclists along each alternative. We will also qualitatively apply the weakest link principle and evaluate how intersection-specific approaches to managing conflicts could ease crossing challenges and influence the overall level of comfort along new bike facilities, as well as existing regional routes like the Champlain Bikeway running between Panton Road and US-7.

Transit Service Operations

The WSP Team will assess potential impacts on existing transit operations qualitatively considering factors such as the extent to which the pedestrian environment near transit stops is improved and the potential for reductions in operational delays due to the diversion of trucks to the VEC.

Effect on Commercial Vehicle Operations

As conceptual alternatives are developed, WSP will review the compatibility of proposed improvements with typical commercial vehicle types that traverse this corridor. This will include a vehicle swept path

WSP has experience with analyzing the effects of truck traffic mitigation strategies for similarly scaled communities and state highways.

- ◆ WSP recently completed study for the Harrisburg Area Transportation Study (HATS), the Harrisburg (Pennsylvania) Region's Metropolitan Planning Organization.
- ◆ HATS requested guidance for three rural centers dealing with an influx of large truck trips overwhelming state highways that were not built to accommodate hundreds of 48- and 53-foot tractor trailers daily.
- ◆ WSP provided planning-level concepts that ranged from lower-cost signing, striping, and wayfinding concepts, to larger capital improvements including the construction of a new interchange on Interstate 76.

analysis using AutoTURN of key intersections or conflict points, which will allow our team to understand where physical barriers to truck mobility may already exist or may be created. Additionally, WSP will review average travel times for typical commercial vehicle types under existing conditions and build conditions, including any alternative routes identified. The goal of this analysis will be to convey any expected impact to commercial traffic.

Environmental Impacts

Potential impacts to environmental resources will be evaluated for up to three alternative corridors. All quantification of impacts will be carefully explained as preliminary and subject to change during further study. The purpose of the early quantification of impacts is to provide a consistent basis for comparing the alternatives and determining which have potential impact in the different resource areas. For each resource area and alternative, overall impacts will be rated as none, minor, moderate, high or severe. A transparent and consistent rating methodology will be developed.

Wetlands

Wetlands along potential alternatives will be field reviewed at a planning level. We note that wetlands will not be formally delineated (three-parameter USACE methodology) during this field work. Existing VGIS mapping—available on the VANR Natural Resource Atlas (NRA) maps—will be reviewed, including the layers for known and mapped Class II wetlands, the wetland advisory layer, and the hydric soils layer which can be a useful indicator for the potential presence of wetlands such as Class III wetlands, which do not appear on the NRA maps. The potential alternative routes with existing wetland information will be transferred to a GPS unit to allow navigation along the routes in the field during the growing season. Mapped wetlands, advisory layers, and hydric soils will be spot-checked in the field, and approximate wetland boundaries will be identified along the routes.

Potential impacts of the alternatives will be calculated based on the conceptual slope limits of the alternatives.

Water Resources

NRA maps will be reviewed for the known and mapped presence of streams, ponds, and lakes. This layer will then be added to the background GPS files to be used for navigation along the potential alignments. The presence of water resources will be recorded with GPS during the field review. The presence of intermittent streams will be a focus of the field work, to identify such resources which typically do not show up on NRA mapping.

Floodplains

FEMA floodplain mapping will be obtained for alternative corridors. Acres of encroachment will be calculated for the alternatives. Special attention will be given the degree of encroachment to the Otter Creek regulatory floodway. Using Natural Resource Atlas mapping, mapped State River Corridors within the potential alignments will be identified and added to the project base mapping.

Vegetative Communities/Wildlife Habitat

Mapped significant natural communities will be field-reviewed during the growing season for conformance with VANR descriptions, or for verification or apparent deviations from existing mapped limits.

The preliminary identification of significant natural communities will be used to summarize the encroachment of the alternatives, as well as information on the number and types of communities potentially impacted by each alignment.



The potential VEC crossing of Otter Creek presents a critical focus area in the development and evaluation of alternatives , with major implications to cost, environmental impacts and property impacts/ displacements.

Rare, Threatened and Endangered Species

A review of NRA maps indicates that there are 16 listed animal species within the Otter Creek area, including the upland sandpiper. This area is summer range for the listed Indiana Bat, and the entire state is habitat for the listed Northern Long-Eared Bat. We will determine the likelihood of special-status species being present in the alternative corridors based on the habitat suitability, previous recorded observations, and input from the resource agencies.

Detailed field inventories for unmapped rare, threatened, or endangered species will not be conducted at this preliminary planning stage of project development.

Farmland

Using the Natural Resource Atlas mapping, statewide and prime agricultural land along the proposed alternative alignments will be identified. Agricultural value groups for each of the soil types will be determined. Approximate acreages of the soils in these categories to be impacted will be calculated and displayed on project plans.

Cultural Resources

WSP will conduct a cultural resources screening study that will include a review of the materials, reports, and site forms available from the Vermont Department for Historic Preservation’s Online Resource Center (VDHP ORC), as well as all documentation available from WSP’s own report archives. Alternatives will be compared based on the number of known archaeological sites potentially impacted, the area of encroachment in areas determined as high archaeological sensitivity, and potential impacts to known built environment historic resources eligible or listed on the National Register. A detailed field inventory of cultural resources is not included.

WSP has been providing cultural resource services to VTrans for years.

As a repeat on-call archaeological and historic architectural resource consultant to VTrans and VELCO, WSP has completed more than 75 projects in all 14 counties of Vermont including a recent cultural resources survey on VT Route 22A between Fair Haven in Rutland County and Orwell in Addison County.



WSP's extremely experienced design visualization specialists use the latest software and hardware technologies to develop the best visualization solution for each project's needs.

Parkland and Recreation Areas

Known parklands included in local plans and existing databases will be inventoried and the number of parks and properties with conservation easements potentially impacted by each alternative compared. Key issues include the Lower Otter Creek Wildlife Management Area, a portion of which is located just west of the Vergennes border in Ferrisburgh.

Hazardous Materials

The Natural Resource Atlas Waste Management layers will be reviewed to identify potential hazardous materials considerations for the alternatives. Details of any areas of potential concern will be obtained from the background information associated with the element mapping or directly from the Vermont Hazardous Waste Management Program. Potential impacts in the vicinity of any such elements will be estimated based on the slope limits of the conceptual alternatives.

Noise

Potential changes in traffic noise will be estimated at a screening level based on the traffic forecast and FHWA's Traffic Noise Model. Modeling the alternative routes in detail is not feasible at this stage of the project, but one to two typical sections can be modeled to estimate the general distance at which traffic noise impacts may occur. This is not a formal determination of traffic noise impacts, but rather a comparative screening measure. The number of sensitive receptors within the screening distance for each corridor will be compared. The potential benefit of reduced noise on Main Street through Vergennes will be estimated based on the traffic volume/mix change and the baseline noise data collected in Task 2.

Visual Resources

The WSP Team will identify critical visual resources and viewsheds potentially impacted by the alternatives.

Residential and Business Displacements

Anticipated ROW impacts developed in Task 4 will be incorporated in the comparison of the alternatives. Alternatives will be compared based on the total acreage of right-of-way acquisition, acreage of private property acquisition, and the estimated number of residential and business displacements.

Land Use/Consistency with Municipal and Regional Plans

summary matrix will be prepared addressing consistency of the alternatives with local and regional plans (based on current plans). The narrative supporting this comparison will acknowledge that plans may change or be updated as a result of the land use visioning (Task 5).

Environmental Justice

The team understands the importance of initiating an early screening identification of potential environmental justice issues to set the project up not only for compliance with FHWA's Guidance on Environmental Justice and NEPA, but for going beyond compliance to identify opportunities for the project design to improve equity. The environmental justice evaluation will include identifying the relevant study area boundaries based on Census geographies, analysis of minority and low-income population data within the study area, identification of potential clusters of environmental justice populations, and incorporation of an environmental justice outreach strategy in the Public Involvement Plan. The preliminary environmental justice screening will not be limited to Census data alone, other local sources of information gleaned from the Task 2 interviews and workshops will be considered. One known potential environmental justice (EJ) consideration for the project is the mobile home park (Otter Creek Park) near the alignment of the VEC.

Cost

The WSP Team will develop conceptual cost estimates for the alternatives. The cost estimates will quantify construction items such as pavement, roadway select materials, earthwork, structures, and other major items as appropriate, and apply the VTrans' current weighted average unit prices. Other items such as drainage and work zone management will be estimated on a percentage basis. Project soft costs including planning, design engineering, environmental permitting and mitigation, geotechnical investigations, construction oversight and management, etc., will be assessed based on similar projects and standard industry practices. Right-of-way acquisition costs will be determined from the approximately assessed value of impacted properties. To appropriately reflect the uncertainty in cost estimates inherent at this stage of design, the preliminary cost estimates will be presented as a range.

Economic Opportunities and Impacts

The WSP Team will provide a qualitative comparison of the alternatives in terms of economic development opportunities and impacts (including jobs and property tax revenue), considering both effects on downtown Vergennes and development potential along the VEC (based on Task 5). While the VEC has the potential to enhance downtown business conditions, the potential for negative impacts on downtown if a portion of auto traffic uses the alternate truck route will be vetted based on the travel time difference and summaries from the relevant literature (e.g. EconWorks: Transportation Project Impact Case Studies).

Alternatives Evaluation Technical Memo

The evaluation and comparison of the alternatives will be summarized in a technical memo that includes a description of each alternative, the criteria and methods used to compare the alternatives, the results of the alternatives comparison, public involvement and agency coordination during this phase of the project and identifies the short-list alternatives to be advanced to NEPA. The draft technical memo will be reviewed by the Technical Committee and the cooperating agencies. After an opportunity for public review, the alternatives to be advanced to NEPA will be approved by the Policy Committee.



Major Vergennes employers such as Collins Aerospace and Northlands Job Corps Center will be important stakeholders in the PELS and assessment of economic effects of the alternatives.

Task 7: Implementation Plan

The WSP Team will prepare an Implementation Plan and revise the plan to address review comments from the Technical and Policy Committees. The Implementation Plan will be publicly available on the project website, but public information/outreach efforts specifically focused on this study deliverable are not proposed. Key elements of the Implementation Plan are discussed below.

Next Steps to Move into NEPA Phase

The Implementation Plan will provide an overview of the immediate next actions for VTrans to initiate the NEPA process, including formal determination of the NEPA class of action, procurement of the NEPA consultant, the Project Initiation Letter to FHWA, the NEPA and permitting schedule, and the Draft Notice of Intent, as appropriate. Building on the coordination and research conducted during the PELS, we will provide a list of the likely transportation and environmental technical studies that would be required to support the NEPA document development.

Implementation of Land Use Recommendations

The Implementation Plan will provide a brief discussion of the local planning decisions and actions necessary to advance up to three land use visions for the VEC (such as potential zoning changes or changes to local land use plans to accommodate the VEC). These recommendations are purely advisory and will not be considered binding on any of the study area municipalities.

Funding and Financing Strategies

A potential new alignment project such as the VEC will require the consideration and evaluation of conventional and innovative alternative funding and financing options to bring it to reality. The Implementation Plan will provide an analysis of the potential funding gap for the VEC and the available funding and financing options, including federal, state and local funding sources. The funding and financing options will be assessed under various quantitative and qualitative evaluation criteria to identify a short-list of the most promising strategies warranting further consideration as the project development process advances. Evaluation criteria may include: eligibility, revenue potential, fund stability/ predictability,

likelihood of funding, timing of availability, administrative and collection burden, legal authority/ authorization, and equity and economic impacts

In addition to the formula funding and competitive grant programs typically used to fund infrastructure projects, the analysis will evaluate the feasibility of value capture strategies to monetize projected economic growth resulting from the VEC project. Value capture requires appropriate statutory authorization and options not supported by current law will be identified as low probability. One potential value capture option allowed under Vermont state law is the creation of a Tax Increment Financing (TIF) District. TIF Districts are created by municipal government with a portion of the incremental increase in property tax revenues resulting from the infrastructure investment available to repay debt service. We will provide VTrans and ACRPC background information on the benefits and potential risks of creating and leveraging a TIF, such as the risk of authorization by the municipality and volatility in property values over the life of the assumed debt repayment. A detailed analysis of the feasibility of implementing a TIF would require further evaluation beyond the level that can be accommodated within the scope of this PELS.

The WSP Team will provide an assessment of a Public Private Partnership (P3) options as a project delivery and financing strategy, taking into consideration the requirements of the five-year VTrans P3 program authorized by Act 158 of 2018. Building on WSP's vast alternative project delivery experience nationally, we will provide a general discussion of advantages and disadvantages of P3 approaches to the VEC to enable VTrans, ACRPC and the study area communities to decide whether further detailed evaluation of P3 alternatives should continue, potentially as an optional task outside the scope of this PELS.

Task 8: Draft and Final Reports

The draft Vergennes PELS Report will serve to summarize the entire study process, data collected, analyses performed and results/conclusions, including the results of the public engagement activities. The report will also include the FHWA PEL Checklist, which helps to document that PEL standards were met and the planning products and decisions are appropriate to carry forward into the NEPA process. The report will include a letter from the FHWA Division office recognizing the PELS and that the study was conducted consistent with FHWA regulations and guidelines for incorporation of planning products and decisions into the NEPA process.

Up to two rounds of revisions are anticipated to address comments on the draft report by the Technical and Policy Committees. Since public and agency engagement will have been integral to all the previous deliverables and task work preceding the final report, it is not necessary to conduct a substantial outreach effort on the draft final report (the report is a summary of all the study work completed). The final report will be made available for the public to review on the project website and a final project wrap-up public informational meeting will be held.

All data generated or used by the WSP team during the PELS, including traffic counts, GIS data, and CADD files, will be conveyed to VTrans so they can be used as a foundation for work on the resulting NEPA evaluation.