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## Evaluation Methodology

This chapter provides a summary of the general methodology used to assess each of the potential railyard sites identified in the Burlington and Rutland areas. A brief summary of the approach to the evaluation is presented first. Following the discussion of the approach, the evaluation criteria required by the state enacted legislation is presented. This discussion includes the methods used to evaluate each criterion.

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### Approach to Evaluation

The steps in the process of identifying and evaluating the alternate railyard sites in Burlington and Rutland are as follows:

1. Through a series of interactive meetings, members of the Advisory Committee developed a list of potential sites to be explored for the relocation of the railyards.
2. The existing Burlington and Rutland railyards were reviewed to define the various infrastructure components and operational functions. A series of meetings with VTrans staff and Vermont Railway personnel were used to document the components of each railyard as well as to create a list of customers and operational practices employed by Vermont Railway.
3. Members of the Advisory Committee were provided with the criteria identified by the Legislature and were encouraged to expand and refine the list. Through the consensus of the Advisory Committee, an additional criteria to address cost was added to the list. This additional criteria was added to the evaluation process as an order of magnitude cost for comparison purposes.
4. The various criterion specified by the legislation were reviewed and the method of analysis for each was defined.
5. The results of the evaluation for each alternate site were placed in a matrix for comparative purposes. Sites were not ranked and a preferred alternative was not selected.

6. Following the technical review of this analysis, the results of the evaluation were critiqued at two separate meetings of the Advisory Committee. Based on comments received from meeting participants, several of the site locations were modified and the results of the evaluation matrix were revised to reflect this additional information.

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## Evaluation Criteria

Criterion for the evaluation of the relocation of the Burlington and Rutland City railyard was initially identified by the Legislature. These criteria reflect the State's desire that the relocation be beneficial to the environment, community, and economy. The legislation required that the following criteria be used in the evaluation of each potential site:

- Size (acreage) and availability
- Potential for adjacent industrial development
- Municipal and State permit requirements
- Compatibility with local land use and development planning
- Availability of power, water and sewer
- Access and proximity to municipal and State highways
- Environmental impacts including wetlands, flood plains, archeological and historical resources, contaminated soils and topography.

In addition, railroad operations and uses were considered in the evaluation of each site. These uses included but were not be limited to the following:

- ™ Administrative facilities
- ™ Existing railroad lines and routing
- ™ Storage of rail equipment, infrastructure materials and fuels
- ™ Repair facilities
- ™ Freight cargo storage and handling
- ™ Service of existing customers on site

In addition, relocation cost estimates were developed for comparison purposes.

Each of the operational components was analyzed with input from VTR to determine the potential impacts of the alternate sites on the railroad. In identifying potential sites, one important operational criteria not previously identified was used to guide the process. Relocation of the railyard can not realistically occur outside a radius of eight to ten miles of the existing location without significant operational impacts. Many of these impacts involve scheduling and train crew work rules. Other impacts would involve the ability to continue service to existing customers. Also, sites that were not on active rail lines and that would

require extensive track work and property takings were not included as potential sites in this analysis.

The following sections briefly describe each of the criteria and how it will be applied to the evaluation of potential railyard sites.

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## Size and Availability

Both the existing Burlington and Rutland railyards each contain approximately 50 acres. This acreage is a specific shape which allows the various functions and operational requirements of the yard to be incorporated. Long narrow sites are preferable to shorter, wider sites as they allow for easier makeup and storage of train consists. For the purpose of this study, each potential railyard site would provide at a minimum the current acreage of the existing facility and be of a shape to accommodate the functional and operational needs.

A second part of this criterion is the availability of the individual parcel(s) that make up each alternative site. The site identification process considered both private and publically held properties and developed and undeveloped (as well as under-developed) parcels. The potential availability of the parcel(s) making up each alternative site was considered.

Estimates of each alternate site's acreage were developed using GIS technology. Advisory Committee members developed the approximate limits for each site. They also provided input regarding the potential availability of the site.

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## Potential for Adjacent Industrial Development

As noted in the description of the existing railyards, there are rail dependent industries located adjacent to the yards. In the evaluation of alternative sites, the potential to locate or relocate similar industries adjacent to the new railyards was considered. The potential to locate industry adjacent to the alternative sites provides the local communities with new opportunities for economic development. The zoning of property for industrial uses coupled with the advantage of direct rail access can potentially spur economic development in this area. Potential for industrial development was determined by considering existing land uses and by the availability of undeveloped land adjacent to the alternate site.

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## Municipal and State Permit Requirements

Each alternative site considered would need to complete the municipal and state permitting processes. The state process will be the same for each site while the local processes may vary slightly by site. The potential to meet the permitting requirements however could vary significantly. The criteria assessed the anticipated level of difficulty required to meet the permitting process requirements. More difficult sites resulted in a lower rating or ranking of the site.

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## Compatibility with Local Land Use and Planning

The two existing railyards are located in developed, industrial areas. The activities of a railyard generate noise, air quality, and social impacts typically associated with industrial and commercial development. The focus of this criterion evaluated the existing land uses surrounding the alternate sites and assessing the overall compatibility of a railyard with these uses. This evaluation considered the local land use plan to assess future potential impacts and compatibility issues. In particular, potential impacts to existing residential neighborhoods were included. The more compatible an alternative site was with existing and future planned uses the higher the evaluation score. Advisory Committee members provided insight into development opportunities that were occurring in the vicinity of proposed railyard sites. Additional field visits to each of the proposed sites were conducted to examine existing land uses.

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## Availability of Utilities

The availability of electric, water, and sewer services is critical to the development of an alternative site. Sites where these utilities already exist rated the highest score. If these utilities are not present at the site, the ranking was lower.

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## Access/Proximity to Municipal and State Highways

Access to the regional highway system is important to the railroad as much of a railyard's local distribution activity depends on the movement of goods by truck. In evaluating each alternative site, the proximity of the site to the regional highway system will form the basis of this criterion. Also part of the consideration was the type and condition of the municipal street(s) accessing the regional system. The shorter the distance and the better the access route, the higher the score will be for

the alternative site. It is crucial that the relocated facilities continue to provide good access to minimize the impact of the truck traffic on local roads. The distance to municipal and State highways was approximated using GIS technology based on the current street patterns.

Several of the potential sites would require construction of new roads to provide improved access to the site or to better connect the site to the regional road network.

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## Environmental Impacts

The environmental impacts criteria includes consideration of wetlands, flood plains, archeological and historical resources, contaminated soils, and topography. The criterion considered the presence of and potential impact on the environmental and archeological/historic resources at each alternative site. Sensitivity to the natural environment as well as preservation of archeological and historical resources were important considerations in the evaluation of each of the location. Potential for contaminated soils to be present and the impact of the existing topography on site development was also a factor. A rolling topography requires more earthwork to prepare it for development as a railyard than a site that is relatively flat. A contaminated site could potentially add significant cost to the development process.

Information regarding environmental sensitivity was supplied by the State. Wetland, floodplain, and topographical information was obtained from the State's GIS data base and supplemented by the National Wetlands Inventory, the United State Geological Survey, and ortho photos. Field verifications were not conducted as part of this study. VTrans provided information regarding potential for historical/ archeological significance.

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## Administrative Facilities

Both existing railyards provide an administrative function for the operating railroads. The alternative sites would also provide this function. The capability of each site to perform this function will be based on the ability to provide an appropriately sized structure containing the necessary operational features and amenities. In some cases, local zoning requirements may restrict the size, height, or function of the structure.

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## Proximity to Existing Rail Lines

The existing railyards are strategically located to serve the function of the railroad. A large volume of locally destined freight moves from each facility annually. The existing locations also provide for convenient interchange points between various railroads. The alternative sites need to provide the same functions as the existing yards in a location that is conveniently accessed by rail. The railyard by definition cannot be isolated from the main line activity of the railroad. The location must allow for the timely movement of freight into and through the region it services. Ideally, the alternative sites are located adjacent to the existing railroad main line and as close as practical to the urban areas they service.

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## Storage of Rail Equipment and Materials

The operating railroad needs a place to store (park) unused equipment and to stockpile necessary maintenance materials. The equipment storage requirement includes rail mounted and rubber tired track maintenance equipment, excess freight cars, and other non-revenue railroad cars. Material storage ranges from sections of rail, ties, ballast, other track materials, crossing gate arms, and many other items. The alternate sites have adequate room to fulfill the storage requirements in a manner that does not adversely affect the daily operations of the railroad.

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## Repair Facilities

The operating railroad needs an area within the railyard to perform both the daily servicing of railroad equipment and the overall/rebuilding of equipment. The most important aspect of this function is for an appropriately sized and weather-tight facility to service the locomotives. The locomotive fleet requires daily servicing and inspection. The type and timing of each inspection is mandated by the Federal Railroad Administration. In addition, the railroad's rolling stock requires maintenance and repair facilities. The alternate sites considered the railroad's need for these facilities and also the need for space to store equipment waiting for repair.

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## Freight Cargo Handling and Storage

The primary function of a railyard is to handle the freight traffic that originates, terminates, and passes through it each day. As a regional freight terminal, the facility must be able to efficiently handle the locally

generated and destined cargo. This requirement includes the provision of adequate and proper facilities to store, transload, and handle a variety of freight. Each alternative site was evaluated to assess the effects of the location on existing customers of the railroad that depend on the railyard facilities.

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### Service To Existing On-site Customers

As summarized in the description of the existing railyards, there are presently a number of industrial/commercial facilities located within the railyards on railroad owned property. The ability of each alternate site to potentially accommodate these users and the potential impact of the yard relocation on these businesses must be addressed. Several of the existing on-site businesses have fixed facilities that would be expensive to relocate. The existing yard locations may provide better customer service. These and other on-site customer related issues must be carefully weighed in the evaluation of each proposed site.

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### Relocation Cost Estimates

Relocation costs for each of the potential railyard sites have been developed based upon unit pricing of key components. Each of the existing railyards was broken down into individual components and a cost estimate for each of these components was identified. Further information regarding these components and their estimated costs are included in Appendix E.

Based on these unit prices, estimates were created for each of the proposed railyard relocation sites. It is important to note that these estimates do not include costs associated with engineering and design, environmental mitigation, or land acquisition costs.