

New Hampshire

Park and Ride Toolkit

A guide for municipalities and park and ride supporters

Prepared by SWRPC, SRPC, CNHRPC



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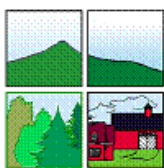
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Legal Disclaimer: The information contained in this publication is meant to be generalized for most potential park and ride developments. However, it should not be relied upon as legal advice. All park and ride developments should be done only in cooperation with an attorney retained for the particular project. Although this Toolkit includes sample legal documents and agreements from actual projects, they are not intended as templates.



Why Use This Guide?

This report and set of 27 tools is designed as a guide for municipalities and park and ride supporters. The Park and Ride Toolkit lays out the criteria and processes to establish a park and ride facility that meets a community's transportation needs.

The Report offers general guidance for developing a park and ride project from concept to the beginning of construction. It is aimed at providing an overview for moving park and ride projects ahead and providing information about important contacts and partners who will be able to provide assistance for different stages of the project development.

The Toolkit provides easy-to-understand guidance for navigating through the park and ride development process including: how to assess the need for a park and ride, picking the right location, and best practices in design. It also provides discussion on common legal hurdles throughout the development process and other strategies to reduce/minimize risk. This Report and Toolkit are organized to flow logically through the park and ride implementation processes from planning and design to management and operations.

The Toolkit provides stakeholders with information and resources to facilitate engagement and serves as a guide to drive the multi-year process of planning and implementing a park and ride forward in an efficient and organized manner. The Toolkit is intended for municipalities, individuals, and groups that are investigating the feasibility and need of developing a park and ride as well as those who are ready to begin planning and implementation.

Executive Summary

Travel demand on many of New Hampshire's highway and transit networks has been increasing over time, while funding for the transportation system, relative to the cost of maintaining the system, has been declining. In response, many communities have put a premium on achieving the maximum efficiency possible from our transportation system to reduce the need for costly transportation capacity expansion projects. As part of this new reality federal, state and municipal governments are investing in a wider variety of transportation modes to meet the needs of the public.

One way to enhance the efficiency of the transportation system and to promote alternative travel modes in New Hampshire is the park and ride lot. Park and rides provide a means for encouraging transit ridership and carpool formation by providing a staging area to transfer from low occupancy or non-motorized modes to higher occupancy vehicles.

The purpose of this Report and Toolkit is to help local park and ride supporters and advocates in developing their own park and ride projects. It is written as a guiding document to work through the process. This Report and Toolkit is also intended to document many informal processes at the New Hampshire Department of Transportation and regional planning commissions when it comes to interacting with community members on how to develop park and rides.

The Report consists of six core chapters and the Toolkit, which is interwoven throughout the Report.

Chapter 1: Getting Started: Park and Ride Overview

This section provides a basic introduction to park and rides that includes background information for topics ranging from what a park and ride is to general funding information. The goal of this section is to visit key topics that should be under consideration from the beginning of the project development process.

Different types of park and rides and how they fit in with the larger transportation system are explored in this section to provide a foundation of understanding that will inform the reader throughout the Report and Toolkit.

This section also offers guidance for successful project planning including information about effective community engagement strategies to ensure projects meet the needs of the public, followed by information about project funding options and the extent to which different funding sources can help finance a project. The chapter closes with a review of different forms of park and ride ownership and the legal implications of ownership types.

Chapter 2: Assessing Need, Demand, and Feasibility

This section walks through the next steps in the planning process. It focuses on building an understanding about factors that drive the need for a park and ride project. The process consists

of data gathering to generate a high level regional picture of existing conditions on the transportation system.

This section also provides information and tools for assessing the actual demand and feasibility for a park and ride project.

Chapter 3: Design: Conceptual to Final

This chapter helps the reader transition from a regional view of demand and feasibility for a park and ride project to the identification of the best project park and ride locations. This section helps pinpoint park and ride design elements that are necessary to best serve the public, mitigate environmental impacts, and promote safe use of the lot.

This chapter goes into greater depth exploring ownership options and legal requirements of each type of ownership. Maintenance and operations responsibilities and agreements are also discussed briefly in this section to ensure these costs are considered early on in the project development phase.

Chapter 4: Preparing for Construction

This section is not intended to provide specifics on the construction phase, but instead focuses on a quick overview of the final design to construction process, provides some details on cost estimation, and finishes with the NHDOT project development process.

Chapter 5: Finalizing Agreements

After the park and ride has been built, maintaining it is critically important for the facility to successfully achieve its goals. Maintenance and operations are directly connected to safety and perceived safety by users, which is important in growing a facility's use. Maintenance is also an important component to extending the life of the facility, thus avoiding the premature need for expensive reconstruction repair or replacements. As such, it is an ongoing responsibility of the entity responsible for maintenance and is a tall order given dwindling resources and increasing demand for facilities.

Chapter 6: Evaluation and Promotion

If there is a nearby existing park and ride, or construction of a new park and ride facility has been completed recently, it is a good idea to implement a basic monitoring program to evaluate its impact. This would require the identification of a party that is responsible for monitoring its use on an ongoing basis. Ideally this party is someone that already drives by the location frequently or whose home base is nearby the facility. Often park and ride evaluation can be formally integrated with maintenance responsibilities.

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Introduction

Travel demand on many of New Hampshire's highway and transit networks has been increasing over time, while funding for the transportation system, relative to the cost of maintaining the system, has been declining. In response, many communities have put a premium on achieving the maximum efficiency possible from our transportation system to reduce the need for costly transportation capacity expansion projects. As part of this new reality federal, state and municipal governments are investing in a wider variety of transportation modes to meet the needs of the public.

One way to enhance the efficiency of the transportation system and to promote alternative travel modes in New Hampshire is the park and ride. Park and rides provide a means for encouraging transit ridership and carpool formation by providing a staging area to transfer from low occupancy or non-motorized modes to higher occupancy vehicles.

The following document is the State's first-ever Park and Ride Report and Toolkit. Its purpose is to help local supporters and advocates in developing their own park and ride projects. It is written as a guiding document to work through the process.

It is important to note that this Report and Toolkit is meant to be an overview of a long-term process. Successfully moving a transportation project through the planning process is a commitment that will often take numerous years to come to fruition. For all transportation projects there are many facets to consider. The process is intentionally thorough to ensure federal, state, and municipal funding is directed to projects that provide the greatest public benefit.

Why Develop a Park and Ride?

Park and rides have varying functions depending on factors including their location, size, amenities, and the modes of transportation they are served by. Factors, such as the demand for greater access to multi-modal transportation options and local parking constraints also influence the siting, design, and purpose of a park and ride facility.

There are environmental, economic, and social benefits associated with integrating park and ride facilities within a sustainable transportation system.

Park and rides provide individuals with the opportunity to share a vehicle or take a bus and therefore reduce the number of vehicles on the road and the net emissions associated with automobiles. The Environmental Protection Agency (EPA) estimates that carbon dioxide (CO₂) emissions from a single gallon of gasoline are 19.5 pounds, or approximately 2 cubic feet.¹ The typical passenger vehicle emits over 4.7 metric tons of CO₂ annually.² In addition to carbon dioxide nitrogen oxide, vehicles release other emissions including particulate matter (PM₁₀),

¹ "Greenhouse Gas Emissions from a Typical Passenger Vehicle." US Environmental Protection Agency. 2014. <http://epa.gov/otaq/climate/documents/420f14040a.pdf>

² Assumption: 21.6 miles/gallon fuel economy and 11,4000 miles traveled per year

sulfur dioxides, nitrogen oxide, and reactive organic gases. Although CO₂ accounts for the vast majority of emissions, many of these other pollutants have a significantly higher – up to 1,430 times greater – global warming potential than CO₂.¹

At an individual level, major benefits of rideshare programs include reduced personal transportation expenses, potential time savings, and commuter tax benefits. Individuals who use rideshares, vanpools, or transit also reduce their carbon footprint. Employees who commute via ride share or transit may be eligible for a range of benefits and incentives such as monthly transit card reductions; federal commuter tax benefits; preferred, subsidized, or free parking; guaranteed ride home; or gift cards. Additionally, carpooling can be an enjoyable experience that reduces stress associated with solo commuting.

Benefits of Park and Ride Facilities

- Reduce the number of cars on the road
- Enhance efficiency of the transportation system
- Enhance multi-modal transportation system
- Reduce CO₂ and other harmful emissions
- Mitigate impacts to air quality associated with transportation projects
- Reduce personal transportation expenses for gas, tolls, parking, and repairs
- Reduce congestion and demand for parking
- Reduce construction and maintenance cost
- Reduce need for future roadway expansion
- Encourage transit ridership and carpool formation
- Increase transportation options in rural communities
- Improve access to work, education, and other opportunities
- Support benefits and incentives for commuters from employers

Park and ride facilities are an asset for municipalities that can help ease local parking and congestion issues as well as attract residents and businesses. They can also attract transit providers and increase the viability of regional transit systems by promoting ridership. Because park and ride and rideshare programs can be tailored to meet the needs of users depending on size, scale, budget, and other constraints, they are a flexible and adaptable strategy to increase access to local and regional destinations.

Integrating additional park and ride facilities throughout the state will help achieve Partnership for Sustainable Communities³ goals including:

- Seamless transition between modes of transportation
- Development of communities that provide a diverse mix of uses within close proximity
- Affordable housing and transportation for households
- Improved access to work, education, and other opportunities
- Increased transportation options for rural communities

See Appendix C “Benefits and Incentives of Ridesharing” for more information.

³ US HUD, US DOT, and US EPA. Partnership for Sustainable Communities. <http://www.sustainablecommunities.gov/>

The following figure is a basic project timeline to assist in guiding toolkit users through the park and ride development process. See *Tool 1: Project Timeline and Checklist*.

Tool 1



Figure 1: Park and Ride Project Timeline

1.0 Getting Started: Park and Ride Overview

Park and rides in New Hampshire are **intermodal facilities** where people arrive by one mode of transportation, convene with or separate from others, and leave the facility by a different transportation mode (see Figure 2: “Park and Ride Facilities Are Intermodal”). Given that single occupant automobiles are the dominant mode of transportation in New Hampshire, a common function of a park and ride is to temporarily park vehicles. However, the function of a park and ride really depends on modes of transportation that are actively used and supported at and around the facility. For example, if there is a bicycle path connecting to the park and ride, it can be used to arrive or depart from the facility by bicycle. If it is served by transit, people can arrive or depart by transit. The **mode** of transportation choice will depend on the availability and convenience of the transportation options near each person’s trip origin, their destination and the park and ride.

What is an intermodal facility?

An intermodal facility can be defined as a place where interface occurs between transportation systems. In a park and ride, people enter the facility by one mode of access (e.g. by car alone, by carpooling, on foot, riding a bicycle, by bus or train, etc.) and leave by another.

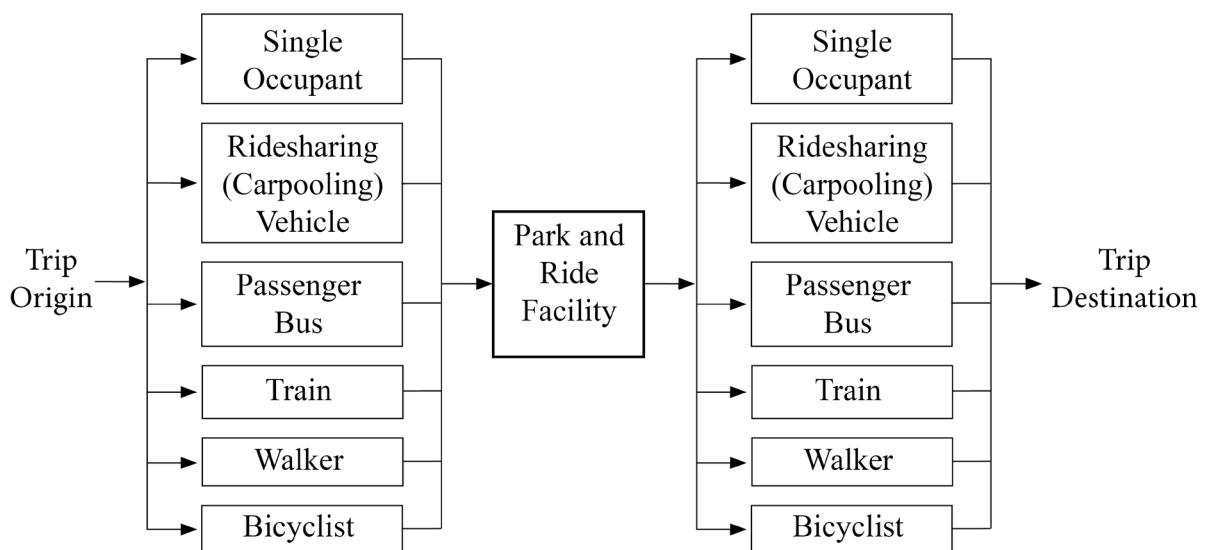


Figure 2: Park and Ride Facilities Are Intermodal

Park and rides have existed in the United States almost as long as the automobile has been a major component of the transportation system.⁴ These facilities are typically developed as a way to manage traffic congestion on a corridor by providing relief to those corridors. Another purpose is to save travelers money on gas and wear and tear on their vehicles by providing a safe harbor to leave their vehicle behind. A final common purpose of park and rides, particularly near central urban districts, is to provide **satellite parking** for areas with a limited supply of parking.

⁴ Guide for Park and Ride Facilities. AASHTO, November 2004, p. 3.

1.1 Types of Park and Rides

The people that are attracted to use a park and ride choose that facility for different reasons, including where and how far they need to travel, and the kind of transportation options available.⁵ The distance between the origin and destination is an important consideration. Do people at the origin have a long drive (30 or more miles)? If so, these facilities tend to work best near transportation facilities or services that provide express travel options to numerous intercity destinations. Common examples include park and rides near interstate highways, train stations, or in some cases, the crossroads of uncongested rural arterial highways leading to important regional destinations. Do people at the origin have commutes of ten to 30 miles? In this case, these facilities tend to be utilized more when there is a congestion issue on the roadway, the price of gas is high, and/or parking is limited or costly at the destination. A final category of park and rides are satellite or **peripheral park and rides**. If a downtown or central business district has limited parking, and the local transportation mix includes a convenient and safe level of transit service, bicycle infrastructure, or walking environment; a satellite park and ride might be a good option for a city. Destinations that have large events where parking is easily overwhelmed may also be served well by satellite park and rides.

What are some reasons for developing park and rides?

Common reasons are to reduce congestion, reduce air pollution, reduce greenhouse gas emissions, reduce wear and tear on roads, reduce demands on premium parking spaces and/or to provide an option to save citizens money on household transportation costs.

Another important differentiating point is that park and ride locations can be **informal or formal facilities**. Everywhere you drive there may be people that have temporarily parked their car in a parking facility using that facility as a staging point to carpool with others, even though there is no signage or advertising indicating park and ride spaces. An example of a common informal facility is a parking lot at a convenience store where an owner allows patrons to park in a section of its parking lot because the owner has excess parking spaces. Another example is a church that allows people to park in their parking lot during the weekdays, because its parking needs are restricted to only nights or weekends. In addition a landowner could offer a plot of vacant land and give permission for the public to park their cars temporarily while the owner waits to dedicate the land to another purpose.

As you see from the convenience store and church examples, informal park and rides are often **jointly-used** for other purposes, or are **opportunistically** used when the facility is not being used for its main purpose. Informal facilities can and do play meaningful roles as park and ride locations, but are only recommended if an arrangement can be made between the parking lot owner and the person that parks their vehicle. Caution should be used in these situations due to liability and insurance issues.

While formal facilities can be privately owned, they tend to be owned by municipalities or the State. Formal public facilities can also be opportunistic or joint use facilities. For example, some municipal parking facilities located in a town hall with excess parking might allow long term

⁵ Other important considerations are the location of the facility, attributes and design of the facility and attributes and attitudes of the park and ride users themselves.

parking for residents needing to carpool or take transit. Some State Parks can be used incidentally as park and ride locations. NHDOT maintenance facilities are sometimes ideal locations and have the capacity to accommodate park and ride spaces. The difference between a public and a private facility is that public facilities (or designated spaces within the facilities) are intended for the general public and previous permission is not required. While this is not the case for private facilities, public facilities are created with the public policy purpose of providing an intermodal transfer point for users of the transportation system.

1.2 Park and Rides as Part of the Transportation System

How are park and rides part of a transportation system? Remembering that park and rides are intermodal facilities, they are integral wherever there is demand to move from a vehicle to transit or bicycle, or from a single occupancy vehicle to a higher occupancy vehicle. Some of the reasons for having such a location have been described above. Park and rides are best serving their role as part of the transportation system when they are located properly. Like the real estate mantra “location, location, location,” the same is true for park and rides. Therefore the park and ride is optimally located where different modes of transportation cross paths, and/or where people are willing to join a higher capacity vehicle due to incentives or disincentives in the trip ahead (high occupancy vehicle lanes, providing temporary parking for common long distance trips, congestion, expensive parking, etc.).

One way of conceptualizing the importance of park and ride location as part of a transportation system is to compare individual vehicles to droplets of water and the paths they take across a region to reach common destinations. In hydrology, this is called a watershed—a geographically defined region that describes how water moves from origins to destinations. Similarly, transportation modes move in a geographically defined area between origins and destinations. Borrowing from hydrologists, transportation planners sometimes call these areas **travel-sheds or traffic-sheds**. Like rivers and streams in a watershed, traffic moves in a hierarchy of road systems that start as municipal roads (small streams), enter collector roads (larger combined streams) and finally reach main artery roads (rivers) until they reach a destination (lake, pond or sea). A park and ride is a human invention to intercept some of the traffic in order to decrease traffic demand (water flow) downstream. Take a look at Figure 3: Conceptualizing Park and Ride Use for more explanation of this concept.

Like transit service, bike lanes or sidewalks, park and rides also help increase the flexibility of the transportation system, allowing users more transport options to fit their lifestyle or help them to avoid taxing their household income with excessive transportation costs. For non-park and ride users, an investment in a park and ride can reduce the need for future roadway expansion and increase community resilience. The recent high volatility of gas prices, as an example, provides a real life experience for all of us as to how park and rides can help communities adapt to the ups and downs at the gas pumps, while minimizing impacts on our lifestyles.

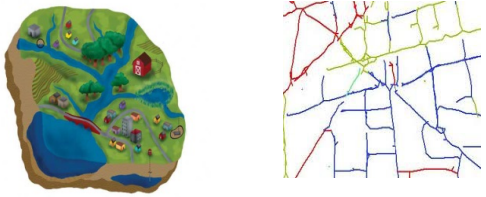
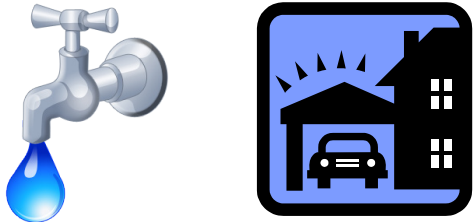

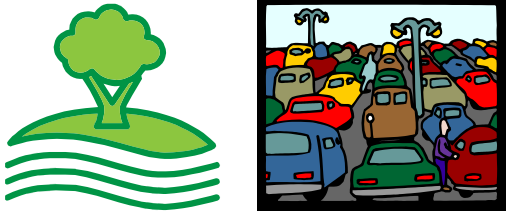
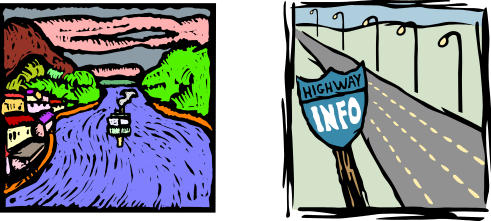

Traffic Shed	Imagine cars flowing onto roads like droplets of water flowing into streams. Planners use the “watershed” concept as a useful way to illustrate “traffic sheds.” Cars start on small roads (streams), flow into collector roads (river tributaries) and finally converge onto arterial roads (rivers) to reach a common destination. Jobs, shopping and other destinations serve as the gravitational force that moves vehicles in a particular direction.	
Upstream Residential Communities	Upstream communities are those areas where a definitive origin-destination trip pattern in a particular direction (downstream) can be identified. Upstream communities tend to be residential in nature and populate the traffic shed with vehicles “drops.” Most vehicles from upstream communities tend to be in close proximity to a collector road no more than 12 miles upstream from a convergence point.	
Collector Roads	Collector roads “collect” traffic from small municipal roads that are populated by residential use in the upstream communities and carry the traffic downstream. The purpose of these roads is to connect municipal roads (streams) with arterial roads (rivers).	
Host Community	Proposed park and rides should be located in a logical convergence point downstream of where the collectors will meet. Think of it as an island just downstream of the tributaries on the river. This convergence point should be located upstream of traffic congestion. The host community should also have many “drops” of its own to populate the park and ride. Park and rides are shown to get at least 50% of their demand within a 2.5 mile radius.	
Arterial Roads	The primary function of an arterial road is to deliver traffic from collector roads to urban centers at the highest level of service (greatest efficiency) as possible. Access to the road from adjoining land use is restricted in order to accommodate free flow of traffic. The arterial should provide direct access to the downstream destination. When available, transit should be an option in addition to park and “carpool.”	
Downstream Destination	The downtown destination is point b where a planner can definitively draw a line representing a trip from point a to point b. Destinations tend to be regional urban centers where there are jobs, shopping and entertainment. Park and riding from the host community will be more successful in cases where parking is limited. Destinations tend to be 10 miles or more away from the host community.	

Figure 3: Conceptualizing Park and Ride Use

1.3 Community Engagement

“It takes a village.” This familiar adage used for raising a child may just as well be applied to developing a park and ride. From the time the concept of a park and ride is born until its eventual construction, there are a number of people in the community that should be pulled into the process in order to help the project avoid pitfalls and ensure its success. The project is more likely to succeed with someone who will shepherd the project, help it along the way and provide ongoing guidance and support. To serve this purpose, we recommend adopting a municipal park and ride task force to provide that steady hand to the project. If possible, look for people on the team that have qualities, skills or talents as organizers, champions and strategists. Find people that are well respected and connected with the broader community. Look for people with technical skills, such as a professional engineer, to help the group tackle technical questions along the way.

It may be difficult to pull all of these people into a task force. Some people will need to be involved in the project by virtue of their positions in local government or their expertise. See *Tool 2: Forming a Park and Ride Task Force* to help brainstorm and write down names of individuals that should be included as part of a task force or at least a support network.

Tool 2

Then there’s the rest of the “village.” Park and rides are not common enough that residents of New Hampshire will welcome them with open arms (see the excerpt news story from the *New Hampshire Union Leader*, Figure 4). Dialogue with community stakeholders, particularly neighborhood residents or business owners near a proposed park and ride is very important. When working with stakeholders it is important to communicate plans, listen and respond to concerns, and if warranted, adapt plans accordingly. Educating the population about the need for a park and ride in a community is a critical component which will involve thoughtful research and analysis. After that, expect community conversations that revolve around park and ride costs, public safety and how the park and ride will impact neighborhood property values. These issues and others will be addressed later on in this Report.

1.4 Introduction to Funding

Traditionally, the lion’s share of transportation funding in New Hampshire has been provided through the fuel tax. The federal fuel tax was last raised in 1992 to a flat 15-cent-per-gallon rate and the New Hampshire fuel tax, currently 18 cents, has not increased since 1991. These fuel tax rates are not tied to inflation, fuel cost, or actual transportation needs. Over time, inflation, increased vehicle efficiency, the emergence of electric vehicles, the decline in per-capita **vehicle miles traveled**, and the resistance to increasing the fuel tax has created a situation where it is difficult to fund the transportation system at the necessary levels, and every dollar spent takes on heightened importance.

Even in the best of times funding a park and ride can be a challenge, but with proper foresight and adequate support for a project, the funding challenge can be overcome. Finding funding to construct a project is one of the major hurdles in seeing a project through to implementation and can be one of the most time consuming aspects of the park and ride development process. Funding for all project stages—planning, design, construction, and maintenance—should be

under consideration from the project outset. Fortunately, there are a number of ways to generate revenue to support a project at the municipal, state, and federal levels.

New Hampshire Union Leader
February 11, 2013

In Nashua, land for park and ride plan has critics

With aldermen set to vote tonight on whether to purchase land for a future park and ride facility and possibly a train station, residents voiced numerous concerns about the proposal on Monday.

By KIMBERLY HOUGHTON
Union Leader Correspondent

NASHUA - With aldermen set to vote tonight on whether to purchase land for a future park and ride facility and possibly a train station, residents voiced numerous concerns about the proposal on Monday.

Fewer than 10 local citizens attended a Ward 7 neighborhood meeting to discuss the merits of a \$1.4 million land purchase by the city.

After nearly a year of postponements, the board of aldermen is set to vote today on whether to acquire two parcels at 25 Crown St. for the proposed park and ride facility. A handful of residents, however, say they have serious reservations about the land buy.

"What is this going to do to my property value, and what about crime?" asked Melissa Hammond, who lives next to the site. "When we add more cars, we are going to be adding more crime."

Traffic will significantly increase in the nearby neighborhoods once a park and ride facility is operational, said Hammond, who is concerned about how the small, narrow roadways will handle the additional cars. She said drugs and robberies are already a problem in the area and that she fears it will only get worse if more motorists are frequenting a park and ride site. If the city doesn't purchase the property, which is owned by Armstrong Cabinets, Mayor Donnalee Lozeau said the parcel will eventually be acquired by someone else, most likely a developer.

"The way you change it is to add some life to it," said Lozeau, asking residents to have a vision for what the area could eventually become. "It doesn't have to be a dead spot."

There are currently two park and ride facilities in Nashua, one at Exit 8 and another at Exit 5. An estimated 38,000 vehicles travel along the East Hollis Street corridor near Crown Street where the parcel is located, explained Lozeau, saying it is a good commuter location. The last time the property was up for sale was in 1949, said the mayor, adding this is an ideal opportunity to plan for the future. Officials also noted that this is the only downtown area that already has 800 feet of straight train track already in existence.

The proposed park and ride facility would accommodate a maximum of 250 vehicles, according to Kathy Hersh, community development director, who said vehicles would access the facility from Arlington Street and then take a left onto Crown Street.

Figure 4: Excerpt from New Hampshire Union Leader, 2/11/13

Municipal Revenue

Unless a park and ride project is an **environmental mitigation action** or entirely funded by NHDOT, some amount of municipal funding will be necessary to build a park and ride. Local funding can provide all, part, or none (rarely) of the funding necessary for building a park and ride.

Local funding is most often used to provide the **match** for the grant that is used to fund a project. Local funding as match can be instrumental in moving a project forward. It is often an indicator for grantors of the level of local support for a project. The ability for a municipality to “over-match” (provide more than the required match) a grant will often provide an advantage when seeking grant approval.

Communities may be able to work with private businesses that are willing to let a portion of their parking lots be used as “informal” park and rides.

State Revenue

Currently in New Hampshire, State revenue for transportation is very limited and is primarily dedicated to the preservation and maintenance of the State transportation system. Historically, the transportation system has been funded through “**user fees**” like the fuel tax.

While most State revenues for transportation are dedicated to maintenance and preservation, revenue generated from the New Hampshire Turnpike System is occasionally used to match federal funding sources to pay for projects. This may happen as an environmental mitigation action for other major transportation projects that take place on the Turnpike System. An example of this scenario is the park and ride constructed in Rochester in State Fiscal Year 2014. This project was developed as an environmental mitigation requirement of the Final Environmental Impact Statement (FEIS) for the Newington-Dover “Little Bay Bridges” project. In this situation the Turnpike System is funding the 20% match requirement for the Rochester Park and Ride and the other 80% of the project cost was funded by the Congestion Mitigation and Air Quality Improvement Program (CMAQ), a federal funding program.

In the future there may be additional funding opportunities at the state level, but the current state generated revenues for transportation are not sufficient to support projects other than maintenance and preservation.

Federal Revenue

Federal funding is the most common way to fund park and ride projects in New Hampshire. Most federal grants can cover up to 80% of total project cost. There are a number of Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) funding programs that can be used for park and ride development. In New Hampshire, park and rides are most often funded through CMAQ. Historically, the use of CMAQ funds has been limited to the southeastern portion of the state because of the air quality non-attainment status of the region. The Surface Transportation Program (STP) and the National Highway System (NHS) program

both allow funding to be dedicated to intermodal facilities or park and rides, however, in New Hampshire, these programs have not historically been used for park and rides. The FTA 5309 Capital Improvement Program and the FTA 5307 Large Urbanized Area program can be used for the development of intermodal facilities as well.

Tool 3

More information about federal, state, and municipal revenue sources can be found in *Tool 3: Funding sources for Planning and Construction* and *Tool 4: Local Revenue Generation*.

Tool 4

1.5 Forms of Ownership

See *Tool 5: Ownership Agreement Components*.

Tool 5

2.0 Assessing Need, Demand, and Feasibility

Before identifying the needs that might justify the creation of the park and ride, it is important to step back from the study area and look at the issues objectively, without a predetermined solution in mind. The best planning in the end is planning that looks at a variety of alternatives or strategies, and then based on a cost and benefit analysis, the best alternative is chosen. That said, the following sections on need are written with park and rides in mind in order to demonstrate the connections between different needs and how park and rides might be an appropriate alternative for addressing needs.

2.1 Determining the Study Area

Often the idea to develop a park and ride will start as an idea for building a facility on a specific property. Even though this might be a good idea, it is best to think about the area in which the facility is intended to serve. What are traffic or commuting patterns in the area? Where are people coming from and where are people going? What is the study area or traffic shed that the park and ride would serve? Is there a major arterial or corridor that you want to focus on? A useful way to evaluate the study area is to get familiar with commuting data trends from such sources as the

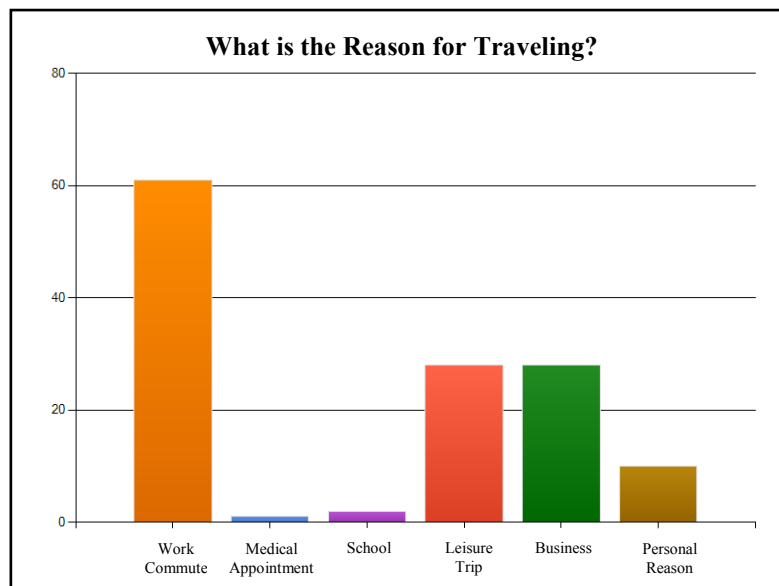


Figure 5: Survey: Reason for Traveling

Longitudinal Employer-Household Dynamics at <http://onthemap.ces.census.gov/> or the **American Community Survey** commuting data found at <http://www.census.gov/hhes/commuting/>. In addition to thinking about job destinations, think about large arts and cultural destinations, airports, recreational destinations or other destinations that attract large numbers of people. Go to *Tool 6: Defining the Travel Shed* for information on an approach for gathering and assessing information to identify a travel shed area.

Tool 6

2.2 Identifying Need

There are several needs that a park and ride can address including: congestion, people's personal or accessibility or mobility needs, mitigating environmental impacts, and connecting multiple modes of transportation.

Addressing Congestion

As stated earlier, a principal reason for establishing a park and ride is to relieve traffic congestion on highways in the traffic-shed. Congestion means different things to different people. Put a person from Coos County in a car with a person from New York City, ask them to talk about the

traffic in Keene and very different perceptions of congestion will be observed. But how is congestion typically defined? A common measurement used by engineers is called **Level of Service (LOS)**. The American Association of State Highway and Transportation Officials (AASHTO) defines LOS in this way: “The level of service characterizes the operating conditions on the facility in terms of traffic performance measures related to speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience.”⁶ LOS is graded on an A to F scale with “A” representing free flow, “F” representing forced or breakdown

flow. Typically, **peak hour** LOS information is used to describe congestion. LOS maps showing relative congestion on major State highways are available on the NHDOT website at <http://www.nh.gov/dot/org/projectdevelopment/planning/gis-data-catalog/>. Each **regional planning commission (RPC)** is a repository for regional data and they specialize in planning for regional transportation systems. Their staff may be able to provide more up-to-date LOS data for roads being examined. Typically, roads showing peak LOS between C and F are worth identifying as a potential need, particularly if traffic on LOS C roads are expected to grow over time and change the road’s LOS. *Tool 8: Understanding Traffic Growth and Congestion* provides a template for gathering traffic and congestion data.

Addressing Demographic Needs

Various studies suggest that the characteristics of the population in a traffic shed—including income, household composition, age, the density of households and vehicle availability—may point to park and ride need. The idea is that certain groups with certain attributes may place different values on costs and benefits. A useful way to understand a population’s needs is to look at some of the decision points each person makes to either drive alone or transfer to a higher Occupancy vehicle or other mode of transportation. Consider the following factors⁷ that might influence the person’s use of a park and ride:

- Decreased automobile operating costs (e.g., fuel, repairs, other ownership costs);
- Increased social capital (e.g., time spent commuting with friends and co-workers);

What are MPOs and RPCs?

Metropolitan Planning Organization – MPOs are responsible for planning, programming and coordination of federal highway and transit investments in urbanized areas

Regional Planning Commission – RPCs are required to prepare regional master plans, compile housing needs assessments and review developments of regional impact among other planning activities like transportation planning.

In New Hampshire, RPC staff also staff the MPO. Turn to *Tool 7: Regional Planning Commission Representation* to identify which RPC/MPO serves a particular region.

Tool 7

Tool 8

⁶ A Policy on Geometric Design of Highways and Streets, Fourth Edition. AASHTO, p. 84, 2001.

⁷ DeLoach, Stephen B. and Thomas K. Tieman. Not Driving Alone: Commuting in the Twenty-first century. Elon University Department of Economics Working Paper Series, 2010.

- Increased assembly time costs (e.g., carpooling adds extra time to the journey to work because it is necessary for the members of the carpool to be assembled at the beginning and disassembled at the end of the work day);
- Decreased autonomy (e.g., must agree upon when to arrive at work and when to depart, forego the ability to run errands while journeying to work, etc.);
- Restricted ability to deviate from the normal schedule (medical appointments, unexpected family emergencies);
- “Feel-good” factor of environmental benefits.

Depending on the socio-economic characteristics of the population in a traffic-shed being studied, it may have a greater need for a park and ride. Go to *Tool 9: Understanding Demographics* for assistance in compiling travel shed demographic information.

Tool 9

One important demographic need that deserves special mention are the costs of transportation for low and middle income households and the potential of a park and ride to save those households money. The American Automobile Association, which performs a “Your Driving Costs” study each year, updated its figures for average driving costs which are shared below.⁸

Using the sedan average rates above, the proportion of working New Hampshire residents and the range of what they pay for one-way driving costs are as follows:⁹

Based on Driving 15,000 miles annually	Small Sedan	Medium Sedan	Large Sedan	Sedan Average	SUV 4WD	Minivan
Cost Per Mile	44.9 cents	58.5 cents	75.5 cents	59.6 cents	75.7 cents	63.4 cents
Cost Per Year	\$6,735	\$8,780	\$11,324	\$8,946	\$11,360	\$9,504

Figure 6: Costs of Owning a Vehicle

Work Trip One Way	# of NH workers	% of NH workers	Average Cost per Driver One Way
Less than 10 miles	252,173	45.6%	\$0 to \$5.95
10 to 24 miles	167,173	30.3%	\$5.96 to \$14.89
25 to 50 miles	86,487	15.7%	\$14.90 to \$29.80
Greater than 50 miles	46,700	8.5%	\$29.80 and higher
Total	552,533	100.0%	

Figure 7: Profile of NH Worker One Way Trips and Average Cost of One Way Trip

Transportation costs are often hidden when factoring affordability. For example, it is common to ignore the costs of transportation when evaluating housing options.¹⁰ The proximity to employment, services, health care, and other destinations can greatly contribute to the overall affordability of a place of residence. What are some other demographic factors potentially influencing park and ride use? Previous research on carpooling suggests that with everything else equal, the following trends emerge:

⁸ Your Driving Costs: 2012 Edition. American Automobile Association, Washington, 2012.

⁹ Estimates of numbers of NH workers are derived from US Census Local Employment Household Dynamics data.

¹⁰ Housing and Transportation Affordability Index. Center for Neighborhood Technology. Washington, 2013.

- Women tend to carpool more than men;
- Ridesharing is less likely for individuals that are 40 or older;
- Families are less likely to carpool than single people. Families will “fampool,” a form of carpooling, but this is unlikely to require park and ride infrastructure since all riders are likely to come from the same origin;
- The denser the residential neighborhood a person lives in, the more likely a person will find a carpool partner, but a greater factor in determining carpooling is the density of destinations (i.e. density of jobs);
- The lower the rate of vehicle ownership, the greater the tendency to carpool.¹¹

Finally, it is suggested in carpooling research that people who are more social tend to be higher frequency users of carpools since a carpool would involve interacting with others.¹² Though it is difficult to determine the sociability of certain populations with available data sets, it’s helpful to understand this as a factor to develop outreach strategies for your park and ride. For example, it would be useful in places in the community that attract people looking for social interaction (café’s, bars, etc.) to display information about the park and rides. For help in gathering demographic need information go to *Tool 8: Understanding Traffic Growth and Congestion*.

Tool 8

Mitigating Environmental Impacts

In some situations, the need for a park and ride is driven by regulation. The federal government sometimes requires environmental mitigation when changes are made to the transportation system using federal transportation funds. Specifically, the federal government regulates impacts to the natural and built environment including the quality of air, water and soil as well as natural habitat, cultural and historical resources. Mitigation can be handled in a variety of ways including strategies that:

- 1) avoid impacts
- 2) minimize impacts by limiting the degree or magnitude of the impact
- 3) rectify an impact by repairing, rehabilitation or restoration
- 4) reduce or eliminating impact over time by preservation and/or maintenance actions
- 5) compensate for an impact by replacing or providing substitute resources as the mitigation strategy.

The park and ride as a mitigation strategy is most often a way to minimize impacts to air quality and, to a lesser degree, the natural environment. The strategy can be a way to divert vehicles using a highway, thereby minimizing impact on air quality as well as the need for building additional highway capacity. In 2012, the US Environmental Protection Agency (EPA) redesignated the southeast areas of New Hampshire from ozone non-attainment to maintenance area. Areas that were previously carbon monoxide non-attainment areas currently maintain that status.

¹¹ Nathan P. Belz and Brian H. Y. Lee, “Composition of Vehicle Occupancy for Journey to Work Trips: Evidence of Ridesharing from the 2009 National Household Travel Survey with Vermont Add-on Sample” and Transportation Research Board of the National Academies, “Park and Ride/Pool: Traveler Response to Transportation System Changes,” Transit Cooperative Research Program Report #95, Chapter 3, Washington, DC, 2004.

¹² Ibid at 27.

Safety Considerations

A park and ride can serve as a catalyst for a community conversation about traffic safety, particularly around access management. Thoughtful **access management** strategies (the design of how vehicles enter and exit the highway on adjacent land) could improve the safety of the area.

Connecting Modes

As discussed earlier, park and rides in New Hampshire are intermodal facilities where people arrive by one mode of transportation, convene with or separate from others, and leave the facility by a different transportation mode. If there is a need for a convening place to connect people using different modes of transportation, including a need for a place to park a vehicle safely and inexpensively, then a need for modal connections is warranted. Similarly, if there is evidence that alternative modes are not operating at their desired capacity, a park and ride might be a strategy to more efficiently draw users of the alternative mode. The need for modal connections should be determined on a case-by-case basis by understanding the different modes of transportation used in a study area.

In some cases modal connections may not be in place, but are envisioned or planned for an area. This is also an important consideration before getting too far into choosing a location. Contact the RPC or municipality's Planning Board to see if new transit, bike trails, bike lanes or other modal modifications are envisioned and planned for the park and ride study area.

2.3 Addressing Political Support

Political support from municipal officials and the general public is perhaps the most important catalyst for moving the concept of a park and ride forward. A challenge in many parts of New Hampshire is that park and rides are not necessarily a typical part of a community's landscape and they are not part of the common vernacular. Sometimes, park and ride users are hidden from public view using informal facilities. The public will have a lot of questions, such as: Will the park and ride attract crime, liability, dumping or other problems? When communities are faced with unknowns, it is all the more difficult to advance a project. Therefore, it is imperative to conduct research and answer questions with the best evidence and data available. In addition, have thoughtful contingency plans outlining strategies for dealing with potential issues. It is important to communicate information in an open and transparent way, with many opportunities for back and forth dialogue. Listen to and address public concerns with the information that is available in order to achieve community buy-in and support. The other needs listed in this section will go a long way in helping the public understand the argument for a park and ride.

In addition to preparing for difficult questions, do not hold back in reaching out and involving existing supporters. A need for a park and ride could come from stakeholders in the community. The local transit agency, or bicycling advocacy group, for example, might be a partner that envisions a park and ride as a need to better achieve their mission. A Chamber of Commerce or employer group can be a powerful advocate for the project as it provides its employees alternatives to reach work and save on transportation costs.

2.4 Purpose and Need Statements

Based on the needs that have been identified, it is recommended that a Purpose and Need Statement be developed. This Report is intended to focus planning activities. First, it helps to think about whether a park and ride is warranted in the first place (e.g. is there a problem that needs to be addressed?) Secondly, is a park and ride the best strategy for addressing the problem? The Purpose and Need Statement sets the stage for consideration of different strategies or alternatives. It has three elements: The Purpose, the Need, and Goals and Objectives. The Purpose defines the transportation problem to be solved. The Need provides data to support the problem statement (Purpose). The Goals and Objectives describe other issues that need to be resolved as part of a successful solution to the problem.

The Purpose and Need Statement is intended to clarify the expected outcome of an alternative or strategy. Often the development of a park and ride is a public expenditure. The Statement is used as a tool to evaluate and justify that expenditure. It answers the questions: “what you are trying to accomplish?” and “why do you think it is necessary?” As such, it should be the first step in the project development process. It will be used to guide the development of alternatives, and it will be a fundamental element when developing criteria for selection between alternatives. Go to *Tool 10: Guidelines for Preparing a Purpose and Need Statement* for more information.

Tool 10

2.5 Assessing Demand

Assessing demand boils down to understanding how many people are likely to use the park and ride. The identified needs may not translate exactly to demand due to a number of variables. Despite identifying a need, if the circumstances are not right, the park and ride by virtue of itself may not address the need. Some of these variables are listed below:

Notice that in Figure 8: “Assessing Park and Ride Demand,” many of the common examples of concepts that impact demand on the proposed park and ride require information is collected directly from the population using the travel shed. Many of the variables cited are based on individual preferences, perceptions or tolerances. Collecting this data can be an overwhelming task requiring many resources to which may be difficult to access. Data collection methods that could be used include: surveys, interviews, focus groups or other similar primary data source collection methods. We do not recommend devoting an inordinate amount of time and effort trying to collect this information as a way in which to demonstrate a community’s demand for a park and ride. However, this information can be used as a supplementary dataset to provide guidance on the demand for a park and ride. For example, surveys of focus groups with employees at a large regional employment center or surveys on vehicles parked vehicles may be a good way to add value to the park and ride demand assessment process.

Themes Affecting Demand	Common Examples	Impact on Demand
Cost	Cost of driving, cost of parking at destination, cost of transit, person's financial disposition, etc.	Demand increases when a person perceives that the benefit of using a park and ride exceeds costs.
Convenience	Park and ride location, ease of entering and exiting traffic, level of service of transit (schedule, frequency) or other transportation alternative, person's schedule requirements, etc.	Demand increases when a person perceives that obstacles to convenience are tolerable or desirable.
Awareness	Signs, marketing, word of mouth referral, etc.	Demand increases when a person is aware of a park and ride.
Other User Preference	Tolerance for congestion, comfort using other transportation modes, perceived safety of park and ride, environmental awareness, etc.	Demand increases when a person's preferences are more in alignment with the park and ride qualities.

Figure 8: Assessing Park and Ride Demand

Even without primary data sources, assessing demand will require some homework. We recommend using Tools 5 through 9 as a starting point. This will help identify a travel shed, identify a host community for the park and ride, identify upstream communities likely to use the park and ride, understand traffic growth and congestion in the travel shed, understand the number of people in the travel shed that are likely to be attracted to a park and ride, and define the purpose and needs for addressing a problem within the travel shed.

Based on that information above, this is a good place to start doing demand estimation. *Tool 11: Forecasting Demand* offers a relatively simple demand estimation model, but it relies on predetermining a likely location. This tool utilizes peak hour data adjacent to the proposed park and ride as well as demographic information about the host and upstream communities in the travel shed. A more sophisticated demand estimation tool is offered as *Tool 12: Demand Estimation for Planners*. Depending on your comfort level with Geographic Information Systems and some new US Census tools, you may need help from a town planning department or regional planning agency to conduct this demand estimation.

Tool 11

Tool 12

If there exist a number of potential sites to compare with one another either in the same travel shed or in different travel sheds. *Tool: 13 Ranking Site Alternatives*. This tool offers ways to evaluate and compare locations to each other. None of the tools described above will provide perfect information, but they will generate educated decisions on the likely demand for a park and ride based on the best available data at your disposal.

Tool 13

2.6 Evaluating Feasibility

The feasibility of a potential park and ride site will be determined by a number of factors. Some major factors include the availability of land, the ability to meet environmental and land use regulatory requirements, and the availability of entities to finance the construction, maintenance and any operations costs related to a park and ride. Feasibility concerns are further explored in the next chapter.

3.0 Design: Conceptual to Final

If a park and ride is planned in conjunction with current land uses, such as an existing parking lot, the implementation may be much faster, and could potentially coincide with an existing municipal, state or private construction project. On the other hand, park and rides that are designed from the ground up should require a site design plan, environmental impact review and documentation, stakeholder acceptance, approval from municipal boards and state agencies, funding plans, permitting, and construction prior to opening. This process could take anywhere from two to five years.

Chapter 3 and associated Tools outlined a series of steps, including conducting a needs assessment process, identifying a travel shed to focus on, and determining the ballpark demand that a park and ride lot would attract. This section builds on that process. The next steps are to:

- Evaluate and assess candidate locations
- Begin conceptualizing the design of the lot, including its size
- Finalize the design
- Acquire the property
- Prepare for the construction phase, including permitting and programming for funding

3.1 Generating Leads

Chapter 3 helped determine the study area and understand the needs the park and ride could address. There are multiple tracks to follow to further identify suitable locations for a park and ride. Chances are that one of the following three opportunities for property use exists in the study area.

Public Right of Way

The two key considerations for pursuing a parcel in a public right of way is availability and land acquisition cost. Surplus or excess public right of way in New Hampshire is often available along State highways. These parcels are typically not suitable for commercial land development. The State currently owns several parcels along State highways that were once NHDOT maintenance facilities or are smaller scale parcels that are no longer needed for NHDOT purposes. If these properties are about the “right size” for a park and ride, then there may be interest from NHDOT staff in putting these parcels into use as park and rides. If this is an avenue that is determined to be feasible, starting a conversation with NHDOT staff is recommended.

Private or Municipal Land

Many communities have land that was once used and is no longer in use or know developers that have parcels that have been languishing. Some municipalities have also taken possession of a property for one or another reason and do not yet have a use in mind for the parcel. The two important factors in determining whether to pursue private land for a park and ride is the zoning compatibility and land acquisition cost. A site for a park and ride must be compatible to the surrounding land uses and cannot be cost prohibitive.

Joint-Use Opportunities

Joint-use opportunities allow for complementary uses of parking because park and ride activity is primarily a daytime/weekday activity. There are two considerations in joint-use facility development: complementary land use and long-term or permanent lease arrangement. Joint-use opportunities are most applicable in corridors with little available land or at locations where large shared-use facilities are desired and reasonable. An example of a joint-use opportunity could include setting up an agreement with a church, business, or other organization. The benefit of this opportunity is that a park and ride can be established quicker than constructing a new facility and can be expanded if there is a need in the future. This also ensures there are anchor or seed tenants for future economic activities. *Tool 14: Sample Joint Use Agreement* provides an example joint-use agreement to draw upon.

Tool 14

Enlarging Existing Park and Rides

If a strong market already exists at a location, then it is likely most cost effective to enlarge the current facility. For example, the Town of New London, Dartmouth Coach and NHDOT worked together to expand the New London Park & Ride when the facility was consistently at capacity. The project was funded through the NHDOT's Betterment Fund in working with the NHDOT front office, NHDOT District staff and Dartmouth Coach staff. In this instance, there was not a need for purchasing additional land.

3.2 Potential Locations

As the task force investigates potential locations, three steps are recommended in evaluating potential sites. In many cases, task force's will find that the first site identified is not necessarily the best site because of the hurdles it will face toward implementation or because it didn't meet basic community needs.

Determine the Right Size to Fit Your Needs

To ballpark the size of the facility needed, use a variation to the Florida Department of Transportation's methodology. The

first step is to use *Tool 10: Forecasting Demand* to determine how many spaces your market will support. (For a more detailed forecasting approach, try *Tool 11: Demand Estimation for Planners*.) Then, convert total parking space requirements to an area measure. This is performed using a factor of 300 square feet per space while 325 square feet per parking space is

Tool 10

Tool 11

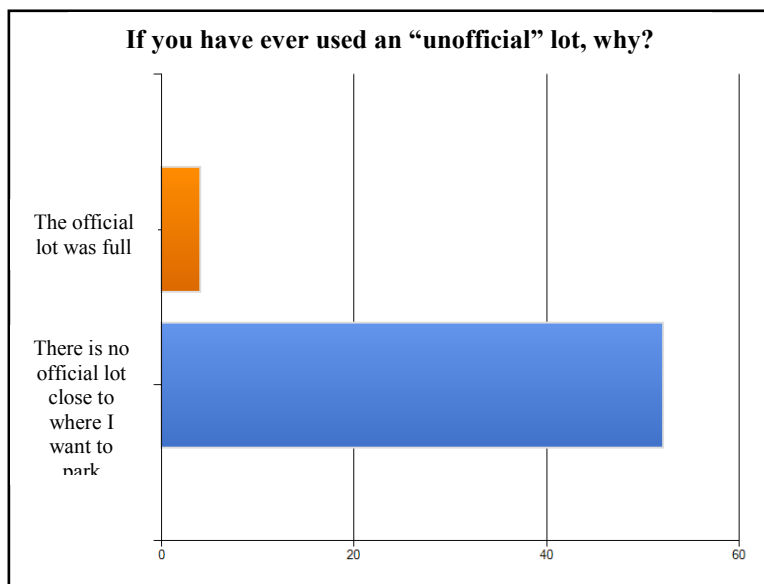


Figure 9: Survey: Unofficial Lot Use

conservative if you plan to add structures to the design.¹³ This factor includes areas required for parking, circulation, and access. In joint-use opportunity situations, the estimate should also take into consideration parking requirements generated by that facility.

Develop an Inventory of Candidate Sites

Now that a ballpark parcel size has been calculated, talk to task force members, residents, local officials, and NHDOT Bureau of Right of Way staff to identify properties they may have already identified as suitable locations. Another important step is to work with the RPC staff and/or the Planning Board to review aerial photography of potential sites and get a sense of a particular site.

Rank the Candidates Site Using Field Observations

The next step is to visit the candidate sites to do some initial field observations, then rank the sites by establishing and implementing a set of criteria and comparing the sites against each other. *Tool 13: Ranking Site Alternatives* serves as the best way to rank those sites. In addition to the criteria in Tool 12, the following are other criteria to be used to further narrow down the search.

Tool 13

3.3 Design Considerations

The criteria noted below should be considered when evaluating a site and these criteria also serve as design considerations when beginning to conceptualize the facility's function.

Right of Way

This item can be considered as part of the Site Identification and Land Availability criteria in Tool 13. Determining where the rights-of-way are and who owns them takes time, but talking to RPC and NHDOT Bureau of Right of Way staff is a good starting point. Purchasing rights of way can be the most costly factor in the developing a park and ride and as such should be an important consideration when determining site feasibility.

Tool 13

Security

This item can be considered as part of the Interstate/Arterial Access criteria in Tool 13. Safety and security is important in the decision-making process for users on whether they will ultimately be willing to leave their vehicle at the facility or meet someone there. Park and rides should whenever possible be seen from major arterial roads free of obstructions such as trees or windowless structures. Placing park and ride lots on busy highways or next to busy land uses (gas stations, etc..) can provide a facility the equivalent of free security surveillance by having "eyes on the lot" as much as possible. Take note of the availability of electricity to the lot for potential lighting or security cameras. For prospective cell phone users determine if cell phone reception will be available.

Tool 13

¹³ State Park-and-Ride Guide. Florida Department of Transportation, Tallahassee, Florida, 2012.

Visibility

This item can be considered as part of the Interstate/Arterial Access criteria in Tool 13. Going hand-in-hand with security is the importance of visibility from adjacent travel corridors. It is a deterrent to vandalism and other illegal activities. Potential users should recognize the availability of a park and ride. When a park and ride lot is eventually established, it will be important to provide wayfinding and identification signage to ensure that you can maximize the visibility of the lot for the driving public.

Tool 13

Access

This item can be considered as part of the Transit Availability, Pedestrian/Cyclist Connections and Interstate/Arterial Access criteria in *Tool 15: Transit, Bicyclist, and Pedestrian Considerations*. Potential users should be able to access the location as directly as possible and should not be diverted more than a mile out of their commuting corridor. Accessibility considerations include automobiles, transit vehicles (if transit service is going to be pursued), bicycles and pedestrians of all ages and abilities. A traffic study from a traffic engineer should be conducted during the design process to determine whether signal control at access points will be needed. In high volume corridors, direct access to priority facilities (like **High Occupancy Vehicle lanes**) will likely increase use of the facility. When designing access points, it is recommended that you follow access management best practices.

Tool 15

Accessibility also includes ensuring that a site, associated structures and maintenance activities meet all federal Americans with Disabilities Act (ADA) and Architectural Barriers Act (ABA) standards. Impediments to accessibility and safety can be common oversights when designing the facility. It is important to consider where sidewalk tip downs, textured warning devices, crosswalks, and other design features for people who are visually impaired and those with other disabilities. This may include ensuring that minimum standards are met for parking stall widths. All of these features serve to ensure safety and accessibility for all users. Accessibility planning should be included throughout the entire project development process. More information about accessibility standards can be found at the Federal Highway Administration's website.

Transit Service

This item can be considered as part of the Transit Availability criteria in Tool 13. Lot usage is also likely to be greater if transit service already exists in the corridor or could be added. If there is not transit service today, speak with local transit agencies, the municipal planning board or regional planning commission to determine if transit service is planned close to the facility.

Tool 13

Access Road Congestion

This item can be considered as part of the Congestion criteria in Tool 13. Traffic congestion on the primary travel corridor or at the park and ride can actually discourage potential usage because it would add travel time to commuter trips. It will be important that the facility allows users to minimize their travel and mode transfer time.

Tool 13

3.4 Additional Design Elements

The following site criteria will not necessarily impact park and ride usage, but are still important to consider when ranking and eventually designing park and rides.

Expansion Opportunities

A growing number of New Hampshire's existing park and rides have been or are in need of expansion because of their increasing popularity and use. It is important to consider whether a site has future expansion potential.

Transit Design

We interviewed transit operators and their considerations to note include: ensuring adequate turning radii, aisle widths, pavement design, lighting and pick-up/drop-off locations that are on main corridors. Additional information is included in *Tool 15: Transit, Bicyclist, and Pedestrian Considerations* about their specific recommendations for the design.

Tool 15

Traffic Circulation

Park and rides will likely increase traffic volume to access roads. So when considering a location, it is important to remember to that the site should, when possible, minimize traffic congestion on the roads, especially if the facility will be located in a residential area.

Bicycle Access

Park and rides help reduce single occupancy vehicles on roads. Providing bicyclists safe and easy access to a park and ride can increase its usage and reduce single occupancy vehicles.

3.5 Research and Documentation

Now that there is a short list of prospects based on the rankings, it is time to dig deeper into each site's potential stumbling blocks by identifying the current property owners and any issues or restrictions that may reside with them. Again, this information is important to consider as further details are added to the design.

Research Past and Present Ownership

Determine who owns the location under consideration by looking at tax maps. Working with the Town/City Clerk or RPC can help identify the owner(s). In addition, it is important to spend some time at the Registry of Deeds identifying whether there are any deed restrictions associated with the site. *Tool 16: Legal Considerations: Land Acquisition and Construction* has additional discussion on the research and other needs that go into this process.

Tool 16

Research Previous Uses

Repurposing a parcel can be a win-win environmentally and financially. However, there are a couple things to consider first. If the site has been contaminated by a current or previous use, there may need to be costly and time-consuming remediation work and liabilities before a park and ride becomes a permitted use. When researching a site, we recommend consulting New Hampshire Department of Environmental Services (NHDES) staff and/or its OneStop portal¹⁴ to investigate whether there are any current or past contamination issues.

Document Physical Constraints

Physical constraints in your evaluation should also be documented. For example, ledge, drainage issues, and utility needs are three common concerns that are identified at many sites. There are also federal, state and municipal environmental protections for natural and built resources. Contact the Planning Board or Public Information and Permitting Unit at NHDES for assistance on identifying municipal, state, and federal protections/constraints. RPCs will also be able to produce maps that indicate physical attributes/constraints of the site. In *Tool 17: Permitting Overview* there is more specific discussion on site preparation and permitting work.

Tool 17

Compile the Results

We now recommend developing a brief report to document the research. Consider documenting the following:

- State the needs (Purpose and Need statement from Tool 10)
- Location(s) ranked along with aerial photography and any maps
- Background on surrounding area (commercial and residential uses, nearby businesses and schools, etc.)
- Traffic and crash data analysis¹⁵
- Facility size (including potential number of spaces under consideration)
- Desired features, including security and safety measures (using *Tool 18: Amenities and Design Elements* and Tool 15 as guidance)
- Background research (ownership, previous uses, constraints, etc.)
- Potential patronage (how many people might use it initially), including existing or potential transit service nearby
- Potential municipal, state, federal and other financing resources targeted for project development (see Tool 3 and Tool 4)
- Planning document support (names and references of any documents where the need for a park and ride has been identified, such as a master plan or regional plan)¹⁶

Tool 10

Tool 18

Tool 15

Tool 3

Tool 4

It is important to continue working with the task force (see Tool 2) throughout the process to ensure key stakeholders and residents are keeping informed on the progress. Making the case for

Tool 2

¹⁴ OneStop. New Hampshire Department of Environmental Services, Concord, New Hampshire, 2013.

¹⁵ RPCs can identify traffic volumes and crash data that exist to help identify any potential concerns and to help build the case for building the facility. RPC staff can also assist with identifying any key municipal, regional or state documents that the project should be or already is identified in.

¹⁶ RPCs have Transportation Advisory Committees that can also help identify regional priorities.

the project through planning documents is also going to increase the likelihood that your project gets funded.

3.6 Consider Potential Costs

Planning and implementation costs can vary depending on the type of park and ride planned. Park and rides that are operating out of pre-existing parking lots may only require a memorandum of understanding and/or a lease agreement. In other cases, park and rides could potentially cost millions of dollars, with a new lot designed from the ground up. In some cases, new park and rides may cost anywhere from \$30,000 to \$55,000 per parking space to build, especially in areas where real estate is in high demand.

Because the potential site(s) is still in conceptual design stages at this point, it is not possible to get a solid cost estimate for all phases of design, construction, maintenance and operations. However, the following sections and Tools will begin to put more details together to help explain the costs from the design phase to maintenance and operations. It is important to remember that the more complex, larger the size, and more amenities that are added to a design and further away from arterial roads, the higher the construction, maintenance, and operating costs will be.

Listed below are some of the factors that go into the cost that are explored next.

- Land acquisition and legal services (negotiations, purchase and sale, deed research, etc.)
- Leasing costs (if another party will own the lot)
- Administrative (meetings, paperwork, etc.)
- Design and construction services, including permitting and contracting
- Construction materials (gravel, pavement, curb, piping, landscaping, etc.)
- Maintenance and operations
- Insurance and taxes

Great ideas, but...

The work of designing a park and ride is best left to a professional with experience in completing similar projects. But with state and municipal budgets being reduced, finding funding to retain an individual or firm for design and construction services can be daunting.

The Town of Belmont built the state's first municipal park and ride. In 2003, the initial design, construction, sign and lighting costs were estimated at approximately \$27,000. The Selectmen created a capital account for \$23,000 in 2004. The Town's general engineering fund covered the services of an engineer for the design.

If finding even this amount of funding is not possible, we recommend finding a supermarket or church parking lot for a joint-use opportunity and consider slowly adding to a capital reserve account each year until enough funding is available for complete design services for your own facility in the future.

3.7 Site Design/Plan Development Overview

If the proposed location is on State-owned property, we recommend contacting staff from the NHDOT Bureau of Right of Way to set up a preliminary consultation with them. If the proposed location is on municipally-owned property, we recommend working with the Planning Board to set up a preliminary consultation. If the proposed location is a joint-use opportunity, then there is not much to the design process other than possibly having to obtain a driveway from NHDOT and signing usage agreements with the property owner. Contacting these parties will introduce you to the key stakeholders in the process so that all parties can begin giving each other feedback on any preliminary concepts.

3.8 Screening Potential Locations

There are numerous factors that go into the design such as the external street network and internal facility operation. The following sections do not provide specific design criteria for park and rides. We have instead provided background information and lists of internal and external features that should be considered during the design process. At this point, we recommend retaining the services of a professional engineer because of the quantity and complexity of decisions that will need to be made in the physical design and impacts on surrounding areas. The information highlighted below derive from AASHTO guidelines. We have highlighted them so that they can be referenced and to ensure the individual/firm is using best practices in designing the park and ride.

External Features

The following are external features to be considered:

- Access/egress – A traffic engineering study should be conducted to evaluate capacity conditions at access driveways and at critical locations on adjacent access roadways. During the planning process for the site, estimates of demand by direction of access would be developed using Tool 11 and Tool 12. These estimates will provide the traffic engineer with estimates of traffic volumes anticipated to use each segment of the road system under evaluation.
- Bus stops and pullouts on- and off-site – If transit access is going to be part of current or future transportation mix, locations for bus stops on- and off-site should be considered.
- Traffic control devices – Traffic control devices relevant to park and rides include signals, regulatory signs, pavement markings, and channelization. The proper control should be developed from traffic engineering analyses of access drives to the facility as well as nearby intersections which will be significantly affected by facility traffic. The design and application of traffic control devices should conform to the Manual on Uniform Traffic Control Devices (MUTCD). The MUTCD ensures that signage (and other infrastructure) is consistent and predictable across jurisdictions.

Tool 11

Tool 12

- Guide signage – Guide signs for park and rides guide users and promote the facility. The placement of signs should intercept users on their normal paths and guide them directly to the facility. The signs should be in conformance to the MUTCD.

Internal Features

The following are internal features to be considered:

- Site layout/internal circulation –The site layout should provide for safe, rapid parking and related movements, minimization of conflicts between motor vehicles and pedestrians, and optimization of space.
- Parking layout –The person designing the facility will need to address up to four of the following types of parking areas in the site layout (locational preference on the site is listed in priority order): Handicapped parking; short-term parking; standard park and ride parking; and kiss and ride parking. Park and ride lots may also warrant bicycle parking.
- Transit terminal facilities – If transit is or will be part of the mix, design for the transit vehicle and passenger should be considered. For buses, this includes things such as wide turning radii, reinforced pavement in the terminal area, saw tooth design for bus loading areas, and so on. For passengers, this includes things like shelters, benches and transit information.
- Pavement and drainage – The design of pavements and drainage for park and ride should conform to AASHTO’s “green book” called “A Policy on Geometric Design of Highways & Streets” as well as State and municipal standards. Great strides in cost-effective **low impact development (LID)** techniques have also been made to use natural features to manage stormwater and other environmental challenges. For a primer on LID techniques, consider reading NHDES’s fact sheet on the topic.¹⁷ Additionally, the University of New Hampshire Technology Transfer Center has assembled best management practices on reducing salt usage, which can be implemented to reduce your snow and ice maintenance expenses.¹⁸
- Signage – Within the park and ride, different types of signage may be required. All signs should conform to MUTCD standards. Where particular signs applicable to park and ride are not contained in the MUTCD, consistency and conformity to municipal standards should be practiced.
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¹⁷ Low Impact Development and Stormwater Management. New Hampshire Department of Environmental Services, Concord, New Hampshire, 2010.

¹⁸ Green SnowPro Certification. University of New Hampshire Technology Transfer Center. Durham, New Hampshire, 2013.

Environmental Impacts

Impervious surfaces, such as roads, parking lots, and rooftops, prevent precipitation from infiltrating into the ground and result in flooding and increased runoff. This stormwater runoff carries a number of pollutants including sediment; oil, grease, and toxic chemicals from motor vehicles; road salts; and heavy metals into streams, rivers, and lakes. The materials used to construct parking lots, such as sealants, can cause water quality degradation.¹ Parking lots and other dark impervious surfaces can cause thermal pollution in nearby water bodies. These pollutants impact drinking water supplies, recreation, fish and wildlife population and habitat. According to the EPA, as little as 10 percent impervious cover in a watershed can result in stream degradation.¹

A range of design techniques can be integrated into new and existing parking lots to minimize the impact of park and ride facilities on local and regional water quality. Examples of green infrastructure or low impact development techniques that can be installed at park and ride lots include: porous pavement, tree box filters, and bioretention systems such as rain gardens or infiltration beds. Many of these systems can be installed as retrofits in existing parking lots and landscaping.

For more information, refer to the University of New Hampshire Stormwater Center website (<http://www.unh.edu/unhsc/>) and EPA's Green Parking Lot Resource Guide ([http://www.streamteamok.net/Doc_link/Green%20Parking%20Lot%20Guide%20\(final\).PDF](http://www.streamteamok.net/Doc_link/Green%20Parking%20Lot%20Guide%20(final).PDF))

¹ Nonpoint Source Pollution Fact Sheet. Environmental Protection Agency. 2014. http://water.epa.gov/polwaste/nps/urban_facts.cfm



Image of a tree box filter installed at the Wiggin Memorial Library in Stratham, NH that will capture silt, oil, nitrogen, and other pollutants from rain runoff. (Source: SRPC)

- **Marking** – Pavement markings within the facility are used to control traffic and provide for orderly parking of vehicles. Except for those markings associated with parking, all markings should conform to MUTCD standards.
- **Landscaping** – Landscaping is important for aesthetic as well as environmental reasons and helps to better balance the facility in its surrounding environment. A facility with well-maintained landscaping can increase the perception of security while poorly maintained landscaping will have the opposite effect. Native species are recommended.
- **Security** – Security at a park and ride is best maximized through the site selection. There are a number of design features which can provide for increased security including: adequate illumination, fencing, number and location of access points, visibility from adjacent roadways, selection of construction materials, careful design of landscaping, minimizing places for vandals to hide on the site, selection of the types of amenities located at the site, and control over non-authorized use of the facility (e.g., parking trucks, abandoned vehicles, dumping trash, etc.). It is essential to partner with local law enforcement agencies to ensure that security needs are being met.

- Boundary identification – Boundary identification is important for minimizing unauthorized use of the facility. This is more likely a larger issue for joint-use facilities. Materials which have been used to delineate park and ride spaces from adjacent areas include fencing, plantings such as hedges, delineator posts, concrete or bituminous curbs, railroad ties, and concrete bumpers.
- User amenities – Many current or potential users identify amenities as one of the most important elements of their park_ and ride experience; however, these amenities can be costly to maintain. In particular, users often want trash receptacles, which are inexpensive, but have a high incidence of being abused. Overflowing trash can cause drainage issues at sites. Shelters and signs with commuting information are often requested often by park and ride users. Where large concentrations of bicycle or motorcycle traffic are expected, the facility designer should consider including covered storage facilities for these types of vehicles.

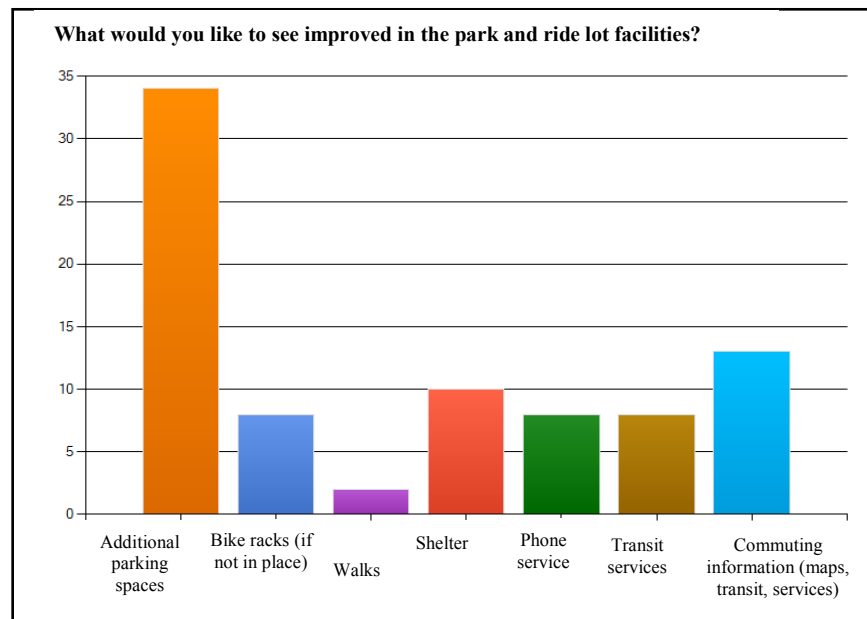


Figure 10: Survey: Amenity Requests

3.9 Resource Impacts

When the designer and his/her team of specialists are in the design phases, they must assess the potential impacts on natural and other resources. The following potential impacts should be identified, analyzed and mitigated for (if necessary) in the final design.

Documenting and analyzing existing conditions at the site will take many forms, and the designer and his/her team should be assess the following conditions that the park and ride could impact. Tool 17 also identifies the permitting that will likely be needed.

Tool 17

Wetlands/water bodies	Traffic access/congestion
Air and noise and vibration quality	Drainage
Deed restrictions, easements, covenants and the like	Hazardous materials/waste
Historic/cultural resources	Biological resources
Wildlife/migratory areas	Air quality
Visual resources	Night sky/lighting
Rights of way, public utilities, roadways and driveways	Others as necessary

Figure 11: Resource Checklist

3.10 What Gets Included/Excluded in the Design

Depending on the impacts, municipal, state, and federal agencies may not allow the park and ride to be developed on the site in part or on the whole or may require certain mitigation strategies to mitigate resource impacts. The design process will also involve developing a final site plan, generating an accompanying report, applying for permits or waivers and a construction cost estimate among others. To understand the elements that the municipal, state and federal governing bodies will be looking for in the site plan, you can review the New Hampshire Office and Energy and Planning’s template site plan review checklist.¹⁹

Exceptions to the Rule

A majority of the park and rides that will be developed as a result of this Report and Toolkit will fall in one of four categories:

- Municipality and NHDOT establishing an agreement to construct and maintain a facility on State property;
- Municipality purchasing the property from NHDOT and maintaining the property;
- Municipality constructing on its property and maintaining it;
- Municipality establishing a joint-use agreement with a business to use part of an existing parking lot.

However, there may be a rare instance, similar to the park and ride in Canterbury where NHDOT used Betterment funds as part of a nearby resurfacing project to build a park and ride to formalize an existing informal parking lot.

These opportunities are rare and cannot be counted on as a reliable strategy to build a park and ride, but municipalities would be wise to continually monitor resurfacing projects on the NHDOT’s Project Viewer and keep in contact with the Division of Operations when highway resurfacing projects are near areas that have been identified for potential park and rides.

The NHDOT Project Viewer can be accessed at
<http://gis.dot.nh.gov/projectviewer/>

¹⁹ Site Plan Review Checklist. Southwest Region Planning Commission, Keene, New Hampshire, 2001.

3.11 Alternatives Analysis

Before choosing a final design and plan, the designer will develop and analyze a handful of alternatives that likely vary in size from full build to a no build scenario. A selection of the preferred alternative will be made based on what the landowner will permit as a use, available financing, and which design best meets the needs of the site.

3.12 Time Considerations

The time required to complete the site evaluation and design depends on the complexity of the issues involved and community support. Regardless of the time required, the resulting final design will be more inclusive if based on a community-oriented process. Community support during the design stages will carry over into the construction, operation, and use of the facility. The public involvement process will require continual interaction among the task force, the designer, the affected municipality, and state and federal agencies.

3.13 Permitting Overview

Federal, state, and municipal regulations may apply to the siting, construction, operation, and closure of a park and ride. Some laws may require site specific permit applications and approval by the regulating agencies. Other laws may require permits by notification, where the applicant certifies to the regulating agency that the law is being followed, but no specific approval is required from the regulating agency. Some laws may require public hearings, while others require only paperwork and study. The only prudent answer to these issues and potential liabilities is to engage competent legal and design professionals to guide you through the permitting process. To better understand the permitting process, turn to Tool 17 for an explanation of which permits may be needed and why they are necessary.

Tool 17

3.14 Land Acquisition

There are liabilities that future owners of park and rides face. Turn to Tool 16 to understand some of the common concerns.

Tool 16

4.0 Preparing for Construction

After selecting the preferred alternative for a design, the time will come to determine how to finance the construction and then actually build the facility. This section is not intended to provide specifics on the construction phase, but instead focuses on a quick overview of the process, provides some details on cost estimation, and finishes with the NHDOT project development process.

4.1 Process Check-in

The following is a simplistic overview of the construction process. If an engineer/firm has not been engaged, now is the time to do so. This list overlaps with the processes outlined in this document.

- Project Concept Determination
- Funding Identification
- Preliminary Engineering/Alternative Identification
- Environmental Review/Impact Analysis
- Public Hearings/Informational Meetings
- Site Inspection/Plan Review
- Right of Way Acquisition/Appraisals (if needed)
- Bid Phase (contractors bid on the work)
- Construction (including inspection/oversight)

4.2 Initiation with Stakeholders

As noted in Chapter 4, the process of initiating a project can take multiple tracks depending on the current property owner of the site desired for development. The following sections identify a general start to finish process for getting the design approved, acquiring a property and getting to construction.

To get the process going, we recommend contacting the primary stakeholder (NHDOT, municipality, business owner, etc.) and submit to them the report generated in Chapter 3.

4.3 State-Owned Property

If the parcel desired for development is on State-owned land, we recommend contacting staff from NHDOT Bureau of Right of Way to set up a preliminary consultation. A request for consultation will initiate a review by NHDOT departments (Design, Right of Way, Environment and the District) to determine if there is a NHDOT need for land or if they want to put any restrictions on it before making it available for sale. Once the review is completed, a report will go to the Commissioner's office for approval to begin discussing the potential sale of the property. The parties will then begin to negotiate terms such as maintenance agreements and lease/occupancy agreements. The lease/rent agreement is typically a zero cost agreement if the facility will be municipally managed. Other terms up for discussion will include any land use restrictions, maintenance requirements, etc., which will likely be rolled into a NHDOT driveway permit (if one is required). Any of the documents generated during the process with NHDOT will be reviewed by the New Hampshire Attorney General's office, signed by all parties and may be subject to approval from Governor and Executive Council. The timeline likely be several months to a year. Design can run concurrent to this process.

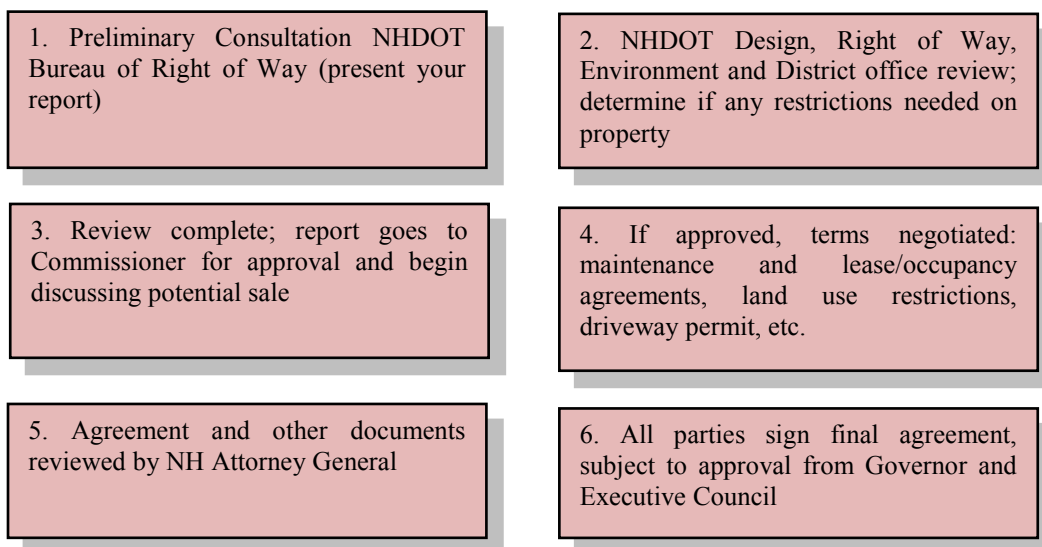


Figure 12: Acquisition Process for State-Owned Property

4.4 Municipally-Owned Property

If the proposed location is on municipally-owned property, we recommend setting up a preliminary consultation with the Planning Board. The central theme that will be explored is determining whether a park and ride is a permitted use at the proposed location (or if it is not, what strategies will be employed) and how a park and ride is or is not compatible with the zoning around the site. Additionally, it is imperative to identify whether there are any municipal, state, and federal laws in place that protect resources (natural or built) on or adjacent to the proposed location. Consideration should be given to whether an NHDOT driveway permit will be needed. Also, consider whether monitoring and mitigation work is necessary if the site is contaminated. Understanding the municipal site plan process will also be helpful to know the next steps to get

to construction preparation.²⁰ The Town of Belmont built the only municipally-owned and maintained park and ride in the state. Learning from their process is a good start and *Tool 19: Belmont Park and Ride Case Study* provides an overview on what they did to design and build their facility and to adopt a Rideshare Ordinance.

Tool 19

4.5 Joint-Use Opportunity

Selection and development of a project will be driven by municipal development strategies and the interests of the partnering property owner. The Planning Board will play the important role in helping navigate the planning, permitting and zoning work that may need to be completed. NHDOT may require a driveway permit and the land owner will likely require signing of agreements relating to maintenance, insurance, and compensation. Retaining legal counsel is a prudent step at this point because of the quantity and complexity of decisions that will need to be made.

4.6 Construction Cost Estimation

Construction costs of park and ride facilities are impacted by the size per space, size and shape of site, topography (slopes and poor soil conditions increase costs), design, and geographic location. Each project has its unique challenges, but using \$44 per square foot²¹ to estimate construction costs can be a starting point and the estimated amount of spaces needed is known. (Tool 10 and Tool 11 will assist in determining the amount of spaces needed combined with Section 3.2.1 to calculate area needed.)

Tool 10

Tool 11

We were not able to identify any recent examples in New Hampshire of actual park and ride facility construction costs. Below, however, is an engineering cost estimate a municipality received in 2012 to construct a 50-space facility (with potential for expansion) at a former NHDOT maintenance facility. It is meant for informational purposes to highlight potential associated costs. This construction estimate does not include the engineering design costs that brought the municipality to this point. Typical preliminary engineering/design costs run 15 to 20 percent of total costs; construction engineering/design typically runs around 20 percent.

Estimate of Quantities					
Item No.	Description	Unit	Estimated Total	Unit Price	Total
201.22	REMOVING LARGE TREES	EA	2	\$1,000.00	\$2,000.00
203.1	COMMON EXCAVATION	CY	2109.23	\$25.00	\$52,730.75
203.6	EMBANKMENT-IN-PLACE	CY	93.68	\$15.00	\$1,405.20
304.2	GRAVEL	CY	1,292	\$25.00	\$32,310.25
304.3	CRUSHED GRAVEL (F)	CY	646	\$22.00	\$14,216.40
403.11	HOT BITUMINOUS PAVEMENT, MACHINE METHOD	TON	695	\$90.00	\$62,550.00

²⁰ Model Non-Residential Site Plan Regulations. Nashua Regional Planning Commission, Nashua, New Hampshire, 2012.

²¹ Transportation Cost and Benefit Analysis II – Parking Costs. Victoria Transport Policy Institute. Victoria, British Columbia, Canada, 2012.

Estimate of Quantities					
Item No.	Description	Unit	Estimated Total	Unit Price	Total
603.3312	18" CORR. POLYETHYLENE END SECTION	EA	1	\$500.00	\$500.00
603.8021	12" PLASTIC PIPE (SMOOTH INTERIOR)	LF	43	\$23.00	\$982.03
603.8022	18" PLASTIC PIPE (SMOOTH INTERIOR)	LF	188	\$30.00	\$5,649.21
604.4	RECONSTRUCTING/ADJUSTING CATCH BASIN & DROP INLET	LF	5	\$300.00	\$1,500.00
609.01	STRAIGHT GRANITE CURB	LF	130	\$18.79	\$2,446.98
632.0104	RETROREFLECTIVE PAINT PAVE. MARKING, 4" LINE	LF	914	\$0.50	\$457.00
641	LOAM	CY	905	\$26.00	\$23,538.06
644.45	SLOPE SEED (WF) TYPE 45	LB	104	\$40.00	\$4,160.00
670.01	PRECAST CONCRETE WHEEL STOP	EA	49	\$150.00	\$7,350.00
607.03	BIO-RETENTION MIXTURE	CY	440	\$60.00	\$26,417.40
670.08	PARKING LOT LIGHTING SYSTEM	U	1	\$70,000.00	\$70,000.00
670.1	PLASTIC AREA DRAIN	EA	3	\$1,000.00	\$3,000.00
670.2	UTILITY COORDINATION	U	1	\$1,000.00	\$1,000.00
	Roadway SubTotal				\$312,213.29
	Erosion Control/Temp. Traffic Control/Temp. Lighting 10%				\$31,221.33
	Miscellaneous Contingency 20%				\$62,442.66
	Specialty Trees Planting and Landscaping 5%				\$15,610.66
	Mobilization 7%				\$21,854.93
	ROADWAY TOTAL				\$443,342.86
	SAY				\$440,000.00

Figure 13: Sample Construction Cost Estimate

4.7 NHDOT Project Development and Process

Transportation projects can seem like they take forever to come to fruition. This is primarily due to the significant costs associated with implementing projects, the regulations that direct how public funding must be tracked and spent and the thorough planning/design that is essential when making any major infrastructure investment.

Depending on the funding source, there are a few common paths that park and ride projects will have to follow in order to be implemented. The funding source a project uses will largely dictate the amount of time it will take for a project to be implemented. This section explains the process that is required for park and ride development using federal funds, which is a common way for funding park and ride lots.

Grant opportunities:

For information about the State Grant Schedules contact NHDOT's Bureau of Planning and Community Assistance.

<http://www.nh.gov/dot/org/projectdevelopment/planning/>

Federal Grant Funded Programs

Federal grant programs are implemented on either a statewide schedule or federal schedule. The federal Congestion Mitigation and Air Quality Improvement Program (CMAQ), Bus Livability, and Discretionary Bus and Bus Facilities: State of Good Repair grant programs are part of New Hampshire's federal aid package for transportation and are implemented by NHDOT on a State determined schedule.

The Transportation Investment Generating Economic Recovery (TIGER) and Transit Investment in Greenhouse Gas and Energy Reduction (TIGGER) grants are implemented by the federal government on a national basis and are at the discretion of the federal government as to when grant rounds are held.

To apply for the aforementioned competitive grants, it is a prudent strategy to have the preliminary design and associated work completed. The preferred project location, approximate cost, initial environmental feasibility, project maintenance responsibilities, and support from your MPO/RPC, the municipal government, and other stakeholders can be instrumental steps for having a project approved. It is important to have a funding source identified that will meet or exceed the grant's matching requirement. Finding funding to match a grant can be a major hurdle in the project development process, but is critical if a project is to be built. Currently, CMAQ funds are typically directed to areas of the state that were previously air quality non-attainment. Additionally, there is uncertainty on the availability of TIGER and TIGGER funding in the future.

After a grant is applied for and successfully approved, contact the RPC or MPO in the region to indicate that the project needs to be moved into the Statewide Transportation Improvement Program (STIP).

Statewide Transportation Improvement Program

The STIP is the four-year State project listing for federally-funded projects, which is a federal requirement under the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) as signed into law in 2005 and continued through the current transportation authorization, Moving Ahead for Progress in the 21st Century (MAP-21). In New Hampshire, the STIP is updated every two years and is developed through a coordinated statewide and metropolitan planning process.

According to federal regulations, the STIP shall include projects, or identified phases of projects, only if full

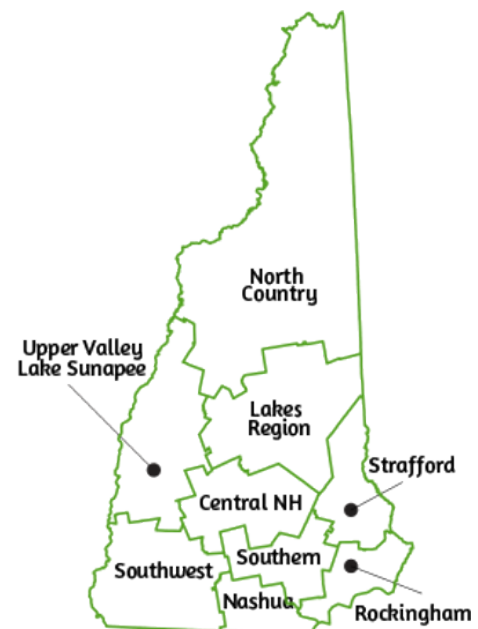


Figure 14: Regional Planning Commissions

funding can reasonably be anticipated to be available for the project within the time period contemplated for completion of the project. Additionally, in the first two years of the STIP, funds for projects located in the non-attainment or air-quality maintenance areas of New Hampshire must be committed or available. The STIP ensures that funding is available for all projects within it through a variety of resources, including: federal aid with appropriate match amounts; State resources from the Highway Trust Fund; and State funds from the budget of the State; Turnpike revenue; and municipal and private revenue.

Programmed Funding vs. Obligated Funding:

Programmed funding implies an eventual commitment of funding to support a project.

Obligated funding is a formal commitment of a specific amount of funding for a project.

In order for funds to be spent and work efforts authorized, the funds must be **programmed** in the proper amount and in the correct fiscal year in the STIP.

Projects are added to the STIP either on the regular two year cycle, or through the Amendment Process.

Amendments are a mechanism for changing project information in the STIP. This can mean changing the year of project implementation or adding new projects. Amendments are part of a process required by the federal government to ensure there is sufficient funding on an annual basis to implement planned projects. Amendments also ensure that projects do not cause air quality impacts in areas that require air quality monitoring (increase pollutants above standards set by the state and federal governments). Full amendments often take three to five months for approval as they require MPO, State, and Federal review to ensure they meet federal requirements.

For less significant changes to projects in the STIP, minor amendments offer an alternative way to revise information and project costs. Proposed changes for projects eligible for minor amendments are minimal and changes must be below certain monetary thresholds. The review requirements for minor project changes entail less thorough review by agencies and are compiled on a monthly basis. Additional information about STIP revision procedures can be found at:

<http://www.nh.gov/dot/org/projectdevelopment/planning/stip/documents/NHSTIPAmendmentProcess.pdf>

After a project is included in the STIP, it has been programmed and funding can be **obligated** for project implementation. For more information about federal funding programs, revisit Tool 3.

Tool 3

Non-Programmatic Funding

New Hampshire also receives federal aid funding for transportation from non-programmatic funding sources. This type of funding is not distributed through a competitive grant process. It provides NHDOT the revenue it needs to carry out a wide variety of transportation projects located on state and federal highways.

Park and rides are eligible for Surface Transportation Program (STP) and National Highway System (NHS) funding. These programs fund most major projects on our highway system. Funding for these two programs is established through the New Hampshire Ten Year Plan process.

New Hampshire Ten Year Plan

In New Hampshire, non-programmatic funding (essentially STP and NHS) for projects is determined through the Ten Year Plan process. The update cycle for the Ten Year Plan occurs every two years. Over recent years, NHDOT has made a significant effort to refine the Ten Year Plan process, taking a more financially disciplined approach, to ensure a financially constrained plan of highway and bridge projects.

The Ten Year Plan development process is a biennial cycle that guides the NHDOT through the planned steps for the development of the Draft Ten Year Plan and approval process. The development process outlines five steps starting with the assessment of the previous Ten Year Plan and ending with an approved Plan signed into law by the Governor.

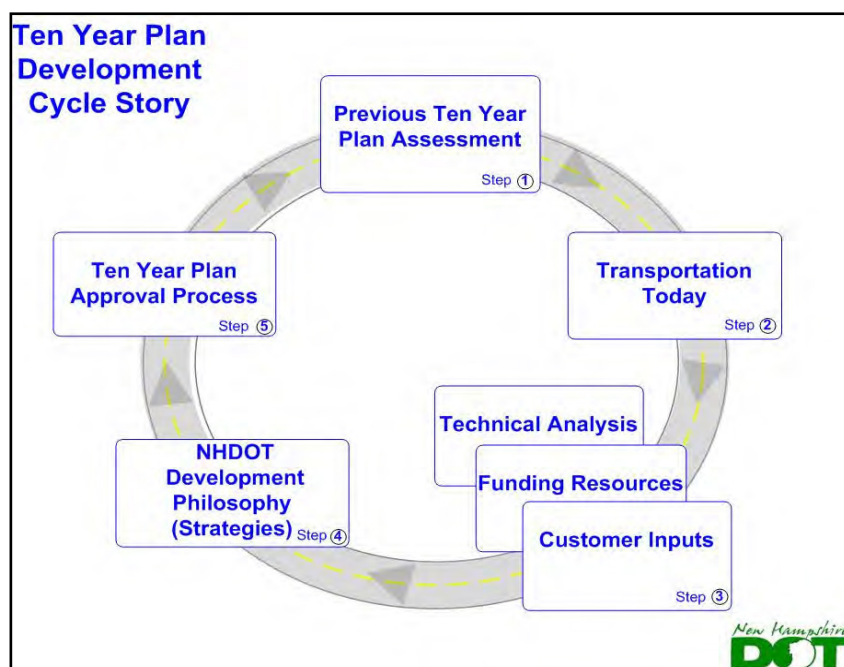


Figure 15: Ten Year Plan Development Cycle

During the Ten Year Plan update, regional transportation projects are solicited from municipalities and prioritized by MPOs and RPCs. Lists of projects are submitted to NHDOT for consideration as part of the Ten Year Plan. NHDOT combines and prioritizes regionally-generated project lists and State-generated project lists to create a draft Ten Year Plan of transportation projects. This draft document then follows the process outlined above as it moves toward adoption by the New Hampshire Legislature and Governor.

Park and ride projects are eligible for STP and NHS, the two primary non-programmatic funding sources considered as part of the Ten Year Plan process. Projects included into an adopted Ten Year Plan are assigned a year where funding will be obligated for engineering, right of way acquisition, and construction.

After a project advances to the first four years of a Ten Year Plan the project becomes part of the STIP and funding can be obligated for project implementation.

Until recently, park and ride projects included in the Ten Year Plan process have been environmental mitigation actions for large projects that take multiple years to implement. To offset environmental costs of these “mega-projects,” park and rides are often included and funded using the same funding pools as the **parent project**.

The recent I-93 widening project from Manchester to Salem had significant environmental impacts that were partially offset by requiring park and ride facility development along the interstate highway. The park and rides scheduled to be built on the I-93 corridor are examples of park and rides funded with NHS and STP funding.

In the *2015-2024 Ten Year Plan* a number of park and rides have been put forward as standalone projects for consideration. If adopted into the plan, they would be the first New Hampshire examples of park and ride projects successfully competing for STP or NHS funding.

Ten Year Plan Approval Process Overview

Park and ride projects seeking STP or NHS funding will most likely advance through the *Ten Year Plan* process (see Figure 16). To participate in this process the park and ride project will need to be submitted to the local RPC or MPO for prioritization. The project will be prioritized by the MPO or RPC (Step 1) and will be submitted to NH DOT for consideration as part of the *Ten Year Plan* (Step 2). During the GACIT public hearings communities are encouraged to attend and advocate about important transportation issues and projects to their GACIT representative. (To find out more information about GACIT hearings in your region go to: www.nh.gov/dot/org/projectdevelopment/planning/typ/index.htm)

4.8 Legal Considerations

Like everything, there are liabilities that future owners of park and rides face during the land acquisition process. Similarly, there are legal considerations to be aware of—such as potential claims and liabilities—as the project moves toward construction. Tool 16 and Tool 22: “Liability and Risk Reduction/Minimization” offer analysis into these issues.

Tool 16

Tool 22

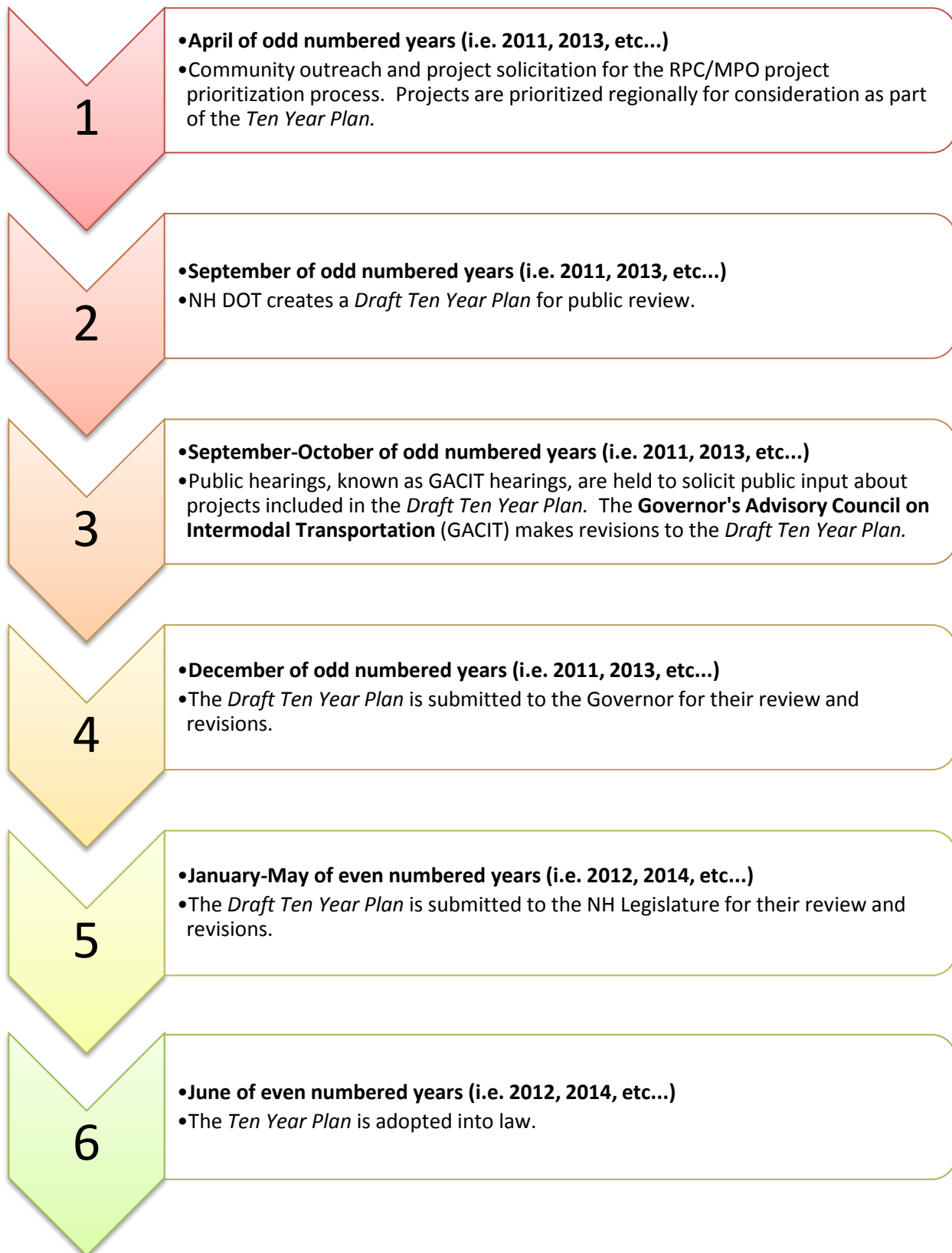


Figure 16: Ten Year Plan Approval Process

5.0 Finalizing Agreements

After the park and ride has been built, maintaining it is critically important for the facility to successfully achieve its goals. Maintenance and operations are directly connected to safety and perceived safety by users, which is important in growing a facility's use. Maintenance is also an important component to extending the life of the facility, thus avoiding the premature need for expensive reconstruction repair or replacements. As such, it is an ongoing responsibility of the entity responsible for maintenance and is a tall order given dwindling resources and increasing demand for facilities.

5.1 Responsibilities and Agreements

No matter what form of ownership is involved, it is very likely that one or more contracts will be developed to maintain and operate the park and ride, including leases, memoranda of understanding, operating agreements, and the like. Some park and rides may be operated primarily by the owner of the property and require only minor contracts for maintenance, for example for snow and ice management. Other park and rides have many different parties involved and involve many contracts. For example, the owner and operator could be different entities, and the operator could rely on contracts with third parties for numerous services, such as ice and snow management, security system, surveillance, stormwater systems, etc. Whether the park and ride involves only one or two minor contracts or many complex contracts, it is very important that the contracts be written in a clear and enforceable way.

Ground Leases, Leases, Easements, and Licenses should be the starting point for maintenance and operation if the form of ownership or control involves any one of those documents. These documents should specify which parties have any responsibility for maintenance or operation and they should specify which particular responsibilities. Frequently, the Ground Lease, Lease, or Easement will reference a separate contract between the parties, or between the parties and others that describes responsibilities of maintenance and operation. Such cross referencing is acceptable and essential. It would be a mistake to have an agreement for maintenance and operation and not reference it in the Ground Lease, Lease, or Easement.

If the form of ownership is fee ownership, the deed to convey the ownership should not include anything about maintenance or operation. Because the owner in fee has full ownership, such references are not appropriate in a deed.

Tool 20: Maintenance and Operations Expense Analysis and Responsibilities outlines what information should be included in maintenance and operations contracts. Parties should engage legal counsel for advice on contracts. *Tool 21: Sample Maintenance and Maintenance Agreement* contains maintenance agreement templates to use as a starting point.

Tool 20

Tool 21

5.2 Maintenance Plans

Almost all of the current park and rides in New Hampshire are State-owned and maintained. NHDOT (Districts, Turnpikes or Traffic) or transit operators currently maintain and operate those facilities. With dwindling State resources, future park and rides will likely need to be built

and maintained by municipalities or transit operators. Joint-use lot maintenance will be done on a case-by-base basis between the parties in the agreement. Regardless of who is responsible for maintenance, a maintenance plan and associated agreement with the responsible party will need to be in place before constructing a new facility or turning over ownership of a property. We recommend the responsible party develop a detailed maintenance manual so that all bases are covered and costs can be planned for.

When developing a maintenance manual, consider how often periodic inspection will occur, when trash pick-up and sweeping will occur and law enforcement of local and state laws will be handled. Developing a yearly maintenance cost estimate and funding source for this work is also critical.

5.3 Scope and Scale of Maintenance Activities

Routine maintenance activities could include any of the following:

Plowing, snow removal, sanding and salting	Pavement resurfacing
Landscaping and aesthetics (lawns, trees, shrubbery, ground cover, etc., maintenance and replacement)	Signs (erecting new, major maintenance, replace worn/damaged signs, winter knockdowns/straightening)
Security cameras (repair camera units)	Enforcement of RSAs (abandoned vehicles, tractor-trailers, etc.)
Shelters (maintenance, graffiti removal, replacement)	Septic system (pumping, repair, replacement)
Traffic control devices	Signal operations
Striping and pavement markings	Parking lot lighting (repair and power)
Painting	Guardrails
Sidewalks (maintenance, repair)	Fences
Curbing (repair / replace)	Handrails
Water lines (pre-meter)	Water usage
Drainage (catch basins and pipe replacement)	Irrigation
Ditches	Mowing and brush cutting
Graffiti removal	Pavement sweeping
Litter pickup and trash removal	Electrical services (transformer, pre-meter, conduit)
Electrical services (post-meter)	

Figure 17: Maintenance Activities

NHDOT District staff identified the following maintenance and operations timelines:

Plowing, snow removal, sanding and salting (routine in the winter, perform at approximately three to four hour intervals during continuous storms)	Pavement resurfacing (every 10 years)
Lighting (replacement as needed)	Signs (every 10 years)
Striping and pavement markings (every three years)	Mowing and brush cutting (May-October)
Building maintenance (daily)	Litter pickup and trash removal (routine)
Drainage (every two years)	Law enforcement (monthly check-in on abandoned vehicles and routine communication with police departments)

Figure 18: Maintenance and Operations Timelines

5.4 Cost Considerations and Estimation

Current and potential park and ride users were interviewed by the Central New Hampshire Regional Planning Commission before this Report and Toolkit was developed. The most common requests for amenities, included: transit service and shelters, commuting information kiosks, wifi/phone service, bicycle racks, and trash receptacles. The complexity of the park and ride's design, its size, the amount of amenities and distance from major roads are all major factors in the maintenance and operations costs. It will be necessary to balance user requests for amenities, which are likely to increase facility use, with available resources to maintain them. Lighting, resurfacing, and mowing are critical to safety and security at and around the facility. Careful consideration should also be given to future expansion needs.

There is no set formula for estimating maintenance and operations expenses. In Tool 20, there is a spreadsheet on the maintenance items for which a park and ride operator may be responsible.

Tool 20

For the State's larger-scale park and rides, entire facilities including the bus terminals are primarily maintained under contract by the transit operators serving the facility. Below are per-space estimates based on 2010 NHDOT reports, the most recent information currently available.

State Lot Location with # of Spaces	Per Space Maintenance and Operations Expenses
Londonderry: Exit 5 (728 spaces)	\$455/space (M: \$402/space + O: \$53/space)
Dover: Route 16 (414 spaces)	\$183/space (M: \$118/space + O: \$65/space)
Portsmouth: Transportation Center (975 spaces)	\$185/space (M: \$113/space + O: \$72/space)
Concord: Exit 14 (340 spaces)	\$1,016/space (M: \$809/space + O: \$207/space)
Salem (476 spaces)	\$402/space (M: \$374/space + O: \$28/space)
Londonderry: Exit 4 (452 spaces)	\$161/space (M: \$129/space + O: \$32/space)

Figure 19: Per-Space Maintenance and Operations Costs at State Park & Rides

5.5 Law Enforcement Responsibilities and Activities

Most municipal police departments will patrol or respond to incidents (vehicular damage, loitering, etc.). However, in some municipalities with current park and rides, municipal police departments believe that incidents are a New Hampshire State Police matter and jurisdiction. It is likely that the municipal police response to an incident depends of how many recent park and ride related calls they have received and what their other case load is at the time of the call.

A great deal of information on events does not exist because incidents are dealt with directly by the municipal police department or facility operator and NHDOT is not notified unless a request for video images of an event are requested. According to NHDOT staff, however, most incidents involving law enforcement are: loitering (in rural and underutilized lots), vehicle damage (broken windows, vehicle paint being “keyed”) and abandoned vehicles (unregistered vehicles, illegal vehicle-trailers, vehicles parked for more than 21 days. See RSA 228:104). NHDOT District maintenance crews work to keep aware of these issues in facilities that are not operated under contract (those with no bus terminal) and then the facility operators manage and enforce at the lots under contract.

5.6 Liabilities and Reducing/Minimizing Risk

The owners and operators of park and rides may have liabilities in many different forms. There are many opportunities to reduce or minimize risk. See *Tool 22: Liability and Risk Reduction/Minimization* for a thorough examination of potential liabilities and how to manage the associated risks.

Tool 22

6.0 Evaluation and Promotion

If there is a nearby existing park and ride, or construction of a new park and ride facility has been completed recently, it is a good idea to implement a basic monitoring program to evaluate its impact. Identify a party that is responsible for monitoring its use on an ongoing basis. Ideally this party is someone that already drives by the location frequently or whose home base is nearby the facility. Maybe the park and ride evaluation can be formally integrated with maintenance responsibilities.

6.1 Revisiting the Purpose and Need

The starting point for evaluation should be based on its original purpose and need. Look back at the purpose and needs section of this Report and Toolkit including Tool 8. The park and ride that was developed, or the one that is already in place, were hopefully developed to address a purpose (problem statement) which was in turn substantiated by data demonstrating a set of needs. What were the goals and objectives of the park and ride facility as it was originally created? Is it addressing those problems effectively? Are

the data that framed the need changing the way that was expected? Then the all-important question: Why or why not?

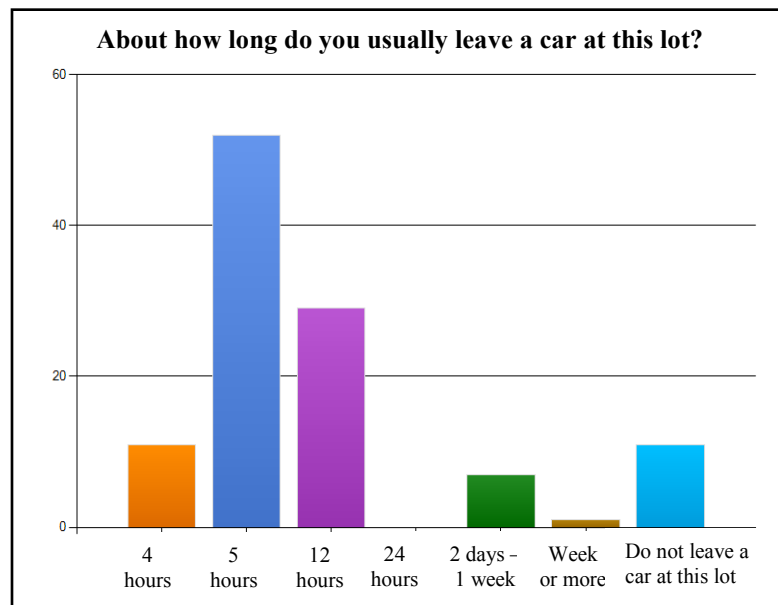


Figure 20: Survey: Vehicle Parking Time

Typically, purpose and need statements capture larger problems that are trying to be mitigated or eliminated. Themes include congestion, air quality, transportation affordability, environmental mitigation, safety or other concepts. The job is to determine how these larger concepts have changed using available data by comparing a “no-build” park and ride facility scenario to a “build” park and ride facility scenario.

6.2 Monitoring Park and Ride Facility Use

In addition to understanding how the park and ride facility affects the big picture, the evaluation process should look at the performance of the park and ride facility on its own. How is it performing? *Tool 23: Monitoring Park and Ride Use* is a database that provides guidance on basic pieces of data that should be collected on an ongoing basis. The schedule for monitoring park and ride use is based on what people and funding resources are available to monitor the facility. The Tool also allows for a comparison between the demand estimate (Tool 12 and Tool

Tool 8

Tool 23

Tool 12

13) and actual park and ride use. This can be a useful baseline tool to update elected officials and the general public about the park and ride.

Tool 13

If the park and ride is over-performing, and especially if it is underperforming, it's a good idea to assess why that is. Part of this assessment can be a critical field assessment of the facility. Go back to Chapter 3 of this Report. What components does the park and ride incorporate and which ones does it do without? In particular, examine aspects of the facility that make people comfortable using it. Revisit sections on access design, safety, lighting, amenities and other characteristics. How does the park and ride stack up to those features? In order to do this kind of assessment, don't rely on prior knowledge of the facility or photographs of it. Go out, spend time at the facility, and jot down observations. It will be surprising to see how much is learned.

We also recommend asking the park and ride users questions about how much they use the site, why they use the site, and questions about how the facility could be improved. Two surveys are available as Tools for this purpose. One survey is geared toward understanding a person's historic use of a park and ride (*Tool 24: Park and Ride Survey: Historic Use*) and is also appropriate if you have more than one park and ride in the area and are trying to understand how the users use the network of park and rides. The second survey (*Tool 25: Park and Ride Survey: Snapshot*) is meant to be a snapshot in time of that person's use and the questions are geared more towards a particular park and ride.

Tool 24

Tool 25

6.3 Evaluating Multimodal Connections

Transit, sidewalks, passenger trains, and bike paths are less common than traditional highways in much of the state due to its rural character and low population density. In recent years, this trend is changing. Employers around the state including: the Portsmouth Naval Shipyard, Pease International Tradeport, Dartmouth College, Dartmouth Hitchcock Medical Center and others have begun financially supporting their local transit systems to provide convenient transit access to work for their employees. This is also a way for large businesses to reduce the costs they incur from maintenance of extensive parking facilities.

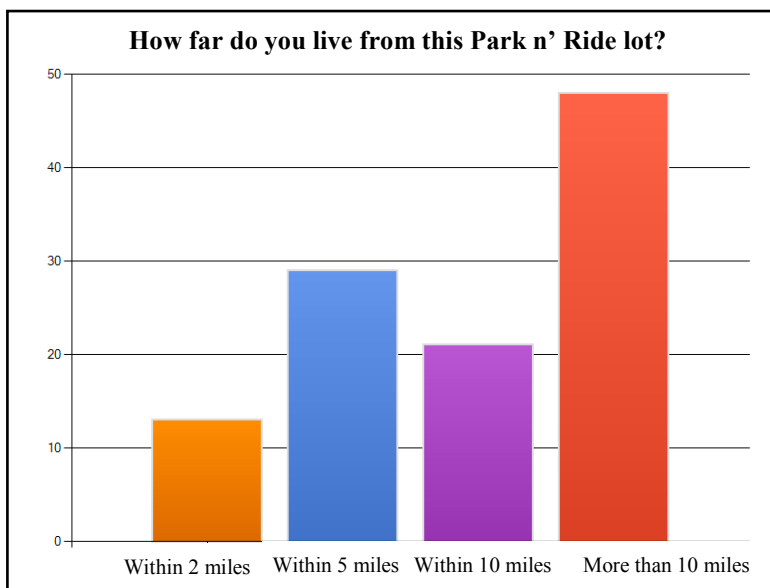


Figure 21: Survey: Distance from Park and Ride

Park and rides have traditionally been looked at as components of the highway system, but just as public demands for more transportation choices are changing, so too is the role of park and rides in the transportation system. It is now being recognized that park and rides are the natural

location for different modes of transportation to come together. These facilities are the ideal staging area for transfers between modes of travel.

This is confirmed by observations of existing park and rides with connections to the transit system, trails, sidewalks, bike paths, and rail. By comparing New Hampshire park and rides that have intermodal connections to those designed for motorists exclusively, it is apparent that there is a correlation between usage and the availability of connectivity to alternate modes of travel.

While oftentimes it is true that usage is tied to the availability of connections with other modes, the converse can also be true. A properly located park and ride can create the critical mass of users to make the provision of transit access a financially sound investment for transit operators. The construction of a park and ride in a high demand area can also provide an ideal location to serve as a vanpool or shuttle collection point for the employees of a major regional employer.

Ultimately the availability of multiple modes of transportation at a park and ride does not make or break the success of a park and ride. However, it can help increase the public use of a facility. Additionally, park and rides with alternative transportation connections have been shown to encourage dense, mixed use development around the facility. These areas can lead to new economic development opportunities. By evaluating and taking these multimodal opportunities into account during the park and ride planning process the full buildout value of a park and ride can be realized. *Tool 26: Evaluating Park and Ride Multimodal Opportunities* provides examples of park and rides with commentary about evaluating multimodal opportunities.

Tool 26

6.4 Promotion and Marketing

Promoting and marketing a park and ride will inform the public about the growing alternative transportation network around the state. We recommend thinking about how to continually market a park and ride and commuter services like New Hampshire Rideshare and Commute Green New Hampshire to enhance usage. In turn, these efforts will generate a stronger demand for and provision of transit services. *Tool 27: ITS for Park and Ride Facilities* also has information about one set of strategies called Intelligent Transportation Systems that can be implemented to market a facility and enhance the user experience.

Tool 27

7.0 Conclusion

When this Report and Toolkit was developed, it was treated as a living document, which could be modified and improved as it is tested on real life projects. Undoubtedly, some recommendations, advice or tools will be modified or changed in order to ensure that the Report and Toolkit reflects the state's unique challenges. Several RPCs will be testing the guidance in feasibility projects across the state and adapting the Report and Toolkit accordingly. If you are a user of this document, you may also have comments or feedback to improve it. If so, please consider sending your feedback to staff at the three regional planning commissions that developed this document.

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Report Appendices

Appendix A: References

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Appendix B: Glossary of Terms

Access management: Access management refers to a bundle of strategies that can be used to control the location, spacing, design, and operation of driveways, entrances, median openings, interchanges and street connections to a roadway. It also involves strategies such as median treatments, auxiliary lanes and appropriate spacing of traffic signals.

American Community Survey: The American Community Survey (ACS) is an ongoing statistical survey by the U.S. Census Bureau, sent to approximately 250,000 addresses monthly (or 3 million per year). It regularly gathers information previously contained only in the long form of the decennial census including data on age, sex, race, family and relationships, income and benefits, education, veteran status, disabilities, workplaces, mode of transportation to work and other information. The ACS website is available at: <http://www.census.gov/acs/>.

Capacity: Capacity refers to the maximum hourly rate at which persons or vehicles can reasonably be expected to traverse a point during a given time period under prevailing roadway and traffic conditions.

Environmental mitigation: Projects or programs intended to offset known impacts to an existing historic or natural resource.

Formal Facility: A formal facility is a park and ride that is made available for public use with signage indicating its availability for public use. The facility could be publicly or privately owned and a joint use/ opportunistic facility or a facility specifically designed for park and ride use.

Informal facility: An informal facility is a parking facility that has not been officially sanctioned by the facility owner to be a park and ride , but the facility owner allows temporary use of the park and ride by “handshake” agreement with users. There is no signage indicating that the facility allows for park and ride use.

Intermodal facilities: An intermodal facility is a place where interface occurs between transportation systems. In a park and ride, people enter the facility by one mode of access (e.g. by car alone, by carpooling, on foot, riding a bicycle, by bus or train, etc.) and leave by another.

Joint use facility: A park and ride that includes private or public secondary uses of the facility. For example: a park and ride that provides park and ride spaces on the periphery of a large retail parking facility or a municipal parking facility. Often joint use facilities will specify which parking spaces are reserved for park and ride users with signage.

Level of Service: Level of service (LOS) is a measure used by traffic engineers to determine the effectiveness of elements of transportation infrastructure. LOS is most commonly used to analyze highways by categorizing traffic flow with corresponding safe driving conditions. The Highway Capacity Manual and AASHTO Geometric Design of Highways and Streets ("Green Book") list the following levels of service:

- A=Free flow
- B=Reasonably free flow
- C=Stable flow
- D=Approaching unstable flow
- E=Unstable flow
- F=Forced or breakdown flow

Longitudinal Employment Household Dynamics: The Longitudinal Employer-Household Dynamics (LEHD) program is part of the Center for Economic Studies at the U.S. Census Bureau which combines state Unemployment Insurance earnings data and the Quarterly Census of Employment and Wages (QCEW) data with Census Bureau data to create statistics on employment, earnings, and job flows at detailed levels of geography and industry and for different demographic groups. In addition, the LEHD program uses these data to create partially synthetic data on workers' residential patterns. The LEHD website is available at <http://lehd.ces.census.gov/>.

Low Impact Development (LID): LID is an approach to land development (or re-development) that works with nature to manage stormwater as close to its source as possible.

Match: Funding (or an in-kind contribution) that is often necessary to access grants and federal funding. Match is most frequently a State, municipal, or private funding contribution but can also come in the form of other contributions (volunteer work, employee time, etc.) to achieve the goals of the grant. Matching requirements will be determined by the funding source.

Mode: The various modes used for movement of people or goods. For each mode, there are several means of transport. Park and rides typically focus on the movement of people and the most common forms of transportation modes are kinds of surface transportation modes such as walking, biking, driving alone, carpooling, bus or rail. Although other transportation modes can be used for marine or air transportation, these do not apply to park and rides in New Hampshire.

Obligated: In reference to federal transportation funding the term "Obligated" implies a formal commitment of a specific amount of funding for a project.

Opportunistic facility: An opportunistic facility describes a property that was not originally designed for park and ride users, but due to the facility's location and availability of spaces, is opportunistically used to accommodate park and ride user needs. Often, opportunistic facilities develop when a facility owner realizes that they have excess parking capacity that could be used by park and ride users. An example of an opportunistic facility would be a church parking facility, in which a church did not have a facility of activities programmed during weekdays when commuters are more likely to use the facility.

Parent project: NHDOT will occasionally take a large project and split it into smaller pieces. This is to make a project more manageable. This is done to allow for progress on one section of the project while details are worked out for other parts of a project. The parent project is the original project and engineering and right of way funding for the whole projects is often done under the parent project phase.

Peak hour: Peak hour is the period during in which traffic volume is at its highest. On weekdays in commuter areas, there are traditionally peak hours when people go to and leave from work in the a.m. and p.m., respectively.

Peripheral facility: Peripheral facilities are meant to intercept passengers prior to downtowns, and getting commuters to park their vehicles where parking costs are relatively cheap and excess land is available.

Programmed: In reference to federal transportation funding, the term “programmed” implies an eventual commitment of funding to support a project.

Regional Planning Commission (RPC)/Metropolitan Planning Organization (MPO): RPCs are required to prepare regional master plans, compile housing needs assessments and review developments of regional impact among others planning activities like transportation planning. MPOs are responsible for planning, programming and coordination of federal highway and transit investments in urbanized areas.

Satellite facility: Satellite facilities are placed on the perimeter of the primary activity center or central business center. These facilities are designed to provide relatively in expensive parking for commuters accessing the activity center without having to travel into the center.

Single/high occupancy vehicle: A single occupancy vehicle is a privately operated vehicle whose only occupant is the driver, while a high occupancy vehicle has multiple occupants.

Transit: A public transportation system for moving passengers often with a bus, light rail or commuter rail.

Travel shed/traffic shed: A corridor area that describes a trend of trips clustering in a general linear pattern with feeder routes (highway, transit or non-motorized) linking trunk lines that carry longer distance trips to a destination such as a job center or service center. The term is based on the analogy of a watershed.

User fee: Direct taxation for users of the transportation system used to pay for improvements, maintenance, and preservation of the system. In New Hampshire, user fees can look like the fuel tax paid at the pump, tolls on the toll roads, parking fees, transit fares, etc.

Vehicle Miles Traveled (VMT): The number of vehicle miles of travel (VMT) is an indicator of the travel levels on the roadway system by motor vehicles. VMT is estimated for the given time period. This estimate is based upon traffic volume counts and roadway length.

Appendix B: Benefits and Incentives of Ridesharing

Benefits and Incentives of Ridesharing²²

Ridesharing programs provide the flexibility to improve the overall commuting experience and to realize a broad range of other benefits. The following is a brief summary of key benefits:

Key Benefits of Ridesharing Programs	
Environmental Protection	Multiple people taking the same trip in a single vehicle can decrease their net and per capita emissions pollution significantly, depending on the size of the vehicle and its propensity to emit greenhouse gases and other air pollutants.
Affordability	Potential to live without an automobile. Ridesharing enables individuals and households to reconsider their need for an automobile, especially if the rideshare itself can account for one of the most critical attractions of owning a personal automobile -- the ability to reach places of employment more easily. The proliferation of hourly car-sharing programs, such as Zipcar, that provide occasional access to vehicles for those who do not own a car, also make owning a vehicle more of a choice than a necessity, and can be combined with ridesharing as well as transit, walking, and bicycling to reduce the need for costly ownership of automobiles.
Avoidance of costly car-related expenses	Ridesharing programs allow people to pool resources or obtain fully subsidized funding for expenses including operating costs (fuel, oil, tires, etc.), maintenance, license and insurance, parking, and taxes and finance charges.
Time savings	Particularly in areas that provide High Occupancy Vehicle (HOV) lanes, ridesharing allows people to reduce their driving times and increase travel time reliability through use of these facilities. Departments of Transportation (DOTs) have focused heavily on HOV lanes as a means of reducing air pollution and, when there is sufficient usage, congestion as well.
Cost savings on High Occupancy Toll (HOT) Lanes or other tolled lanes	As a result of the excess capacity that exists on many HOV lanes, DOTs are increasingly turning to a hybrid operating model of HOT lanes that offer free access to HOVs and tolled access for single occupant vehicles (SOVs). HOV lanes and HOT lanes both lead to growing interest in ridesharing. In the case of HOT lanes multiple occupant vehicles can avoid paying a toll. Even where HOT lanes do not exist, ridesharers can pool their money together to pay for tolls they may incur.

²² "Ridesharing Options Analysis and Practitioners' Toolkit" (2010) U.S. DOT Research and Innovative Technology Administration Volpe National Transportation Systems Center. Available at: http://www.planning.dot.gov/documents/RidesharingOptions_Toolkit.pdf

Key Benefits of Ridesharing Programs	
Reduced congestion, and construction and maintenance costs	Ridesharing leads to fewer cars on the road, which has an immediate impact on congestion and, over the long-term, can reduce roadway construction and maintenance costs. Public agencies are now able to monetize these cost savings more accurately and reallocate funding to support the startup and expansion of ridesharing programs.
Commuter Tax Benefits	<p>Congress has approved legislation that allows employees of corporations to pay for parking and transit, including vanpool, with pre-tax dollars. When employees buy with pre-tax dollars, they avoid federal, state, and employment taxes, often saving up to 40%. The maximum allowable pre-tax benefit is \$230 per month. Employers save money, too, since the amount provided for the benefit is not subject to payroll taxes. These commuter benefits can be used in one of three ways¹ :</p> <ol style="list-style-type: none"> 1. Employers may reimburse their employees up to \$230 a month to commute to work by mass transit or eligible vanpools. The employer pays for the benefit and receives a tax deduction. Employees receive the benefit amount tax-free. 2. Employers may allow their employees to use their pre-tax income to pay for transit or vanpooling. Employers do not pay for the benefit but allow employees to take advantage of the tax savings from using their gross income to pay for qualified commuting expenses. Employees who take the maximum transit benefit can save nearly \$800 in federal income taxes, and even more in Social Security and state taxes than they would otherwise pay. Employers see a reduction in their payroll costs on the amount set aside since they do not pay taxes on this amount. 3. Employers may share the cost of commuting with their employees. Employers can elect to give their employees some amount of the qualified commuting expenses tax-free and let the employees set aside their gross income to pay the remaining amount up to the federal monthly limit of \$230 a month.
Guaranteed Ride Home (GRH)	A perceived drawback of ridesharing is that a vehicle will not be available in the event of an emergency, such as to transport a sick child needing to return home from school in the middle of the day. Many ridesharing programs offer a guaranteed ride home (GRH) provision, which allows each user to use alternative transportation (taxi, bus, rental car, etc.) in the event of an emergency. There is usually a maximum allowable benefit, but having this as an option can be a prime selling point for potential ridesharers who may have children or have reason to leave work unexpectedly on occasion. These are typically funded by groups of neighboring employers participating in a voluntary Transportation Management Association (TMA) to fund and provide commute services for their employees.

New Hampshire Park and Ride Toolkit

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Tool 1: Project Timeline & Checklist

Project Origination & Initial Feasibility Investigation	Project Origination (1 - 3 Weeks)		Check Box Once Task is Completed	Comments	Date of Task Completion
	Meet with Local Officials				
	Meet with MPO/RPC				
	Assemble taskforce (toolkit)				
	Initial Project Evaluation (1 - 2 months)		Check Box Once Task is Completed	Comments	Date of Task Completion
	Park and Ride Need Assessment (toolkit)				
	Park and Ride Location & Alternatives Assessment (toolkit)				
	If the preferred location is on private land, meet with the				
	Project Funding (1 month - multiple years for certain grant rounds)		Check Box Once Task is Completed	Comments	Date of Task Completion
	Identify viable funding sources(toolkit)				
Investigate Park and Ride Ownership Models (toolkit)					
Estimate Maintenance Costs (toolkit)					
Identify local funding sources for Match/Full Project Funding and					
Official Project Adoption	Moving the Project Forward (3 months - 1 year); Pick the Appropriate Track Depending on the Project Funding Source		Check Box Once Task is Completed	Comments	Date of Task Completion
	100% Locally Funded Project	If project is funded with local dollars it <u>may</u> need to be listed in the CIP			
		Completed preparation for the local review process (site plan review, etc...)			
	100% Privately Funded	Completed preparation for the local review process (site plan review, etc...)			
	State or Federal Competitive Grant Funding (CMAQ, FTA)	Work with the local MPO/RPC & NH DOT to include the project listed in the S/TIP			
		Completed preparation for the local review process (site plan review, etc...)			
	Other State or Federal Funding Source	If federally or state funded, work with the local MPO/RPC to include the project in to the MTP/LRTP , or TYP			
Completed preparation for the local review process (site plan review, etc...)					
Project Implementation	Project Implementation (6 months - multiple years); Pick the Appropriate Track Depending on the Project Funding Source		Check Box Once Task is Completed	Comments	Date of Task Completion
	100% Locally Funded Project	Completed the permitting and local approval process			
		Construction			
	100% Privately Funded	Completed the permitting and local approval process			
		Construction			
	The section below is for federally or state funded projects that <u>have advanced onto the TIP</u> . In addition to using the toolkit as a reference the project lead should refer to the Local Project Administration Manual (LPA)				
	State or Federal Competitive Grants (CMAQ, FTA grants, etc...)	Hold a Scoping Meeting with NH DOT, MPO/RPC staff, & Local Officials			
		Receive a Notice to Proceed from NH DOT			
		Begin Preliminary Engineering (PE)			
		Acquire Right of Way (ROW) if necessary			
		Begin the Construction (C)			
	Other State or Federal Funding Source	Hold a Scoping Meeting with NH DOT, MPO/RPC staff, & Local Officials			
		Receive a Notice to Proceed from NH DOT			
		Begin Preliminary Engineering (PE)			
		Acquire Right of Way (ROW) if necessary			
Begin the Construction (C)					

Tool 2: Forming a Park and Ride Task Force

Check off and write down the names and contact information of individuals that will improve your park and ride task force chances for success as well as the key individuals that will provide important technical assistance to the task force.			
Skill Set of Core Park and Ride Task Force		Key Expertise to Assist Task Force	
<input type="checkbox"/>	Organizer and Champion: Find one person who is able to rally everyone to come to meetings, make conference calls and follow a work plan according to schedule.	<input type="checkbox"/>	Planner: Consult with a municipal or RPC planner to understand code and regulations that provide guidance on uses allowed, environmental regulations, parking, access, lighting and other design requirements as well as the steps and documentation needed to advance your project.
Name Contact Information		Name Contact Information	
<input type="checkbox"/>	Communicator: Find at least one person that can effectively communicate verbally, visually and in writing on behalf of the task force to important stakeholders.	<input type="checkbox"/>	Enforcement: Consult with police in order to get input on cause for safety concerns, particularly as your task force begins honing in on prospective park and ride sites. Try and understand who patrols the area (municipal, county and/or state) and how this facility would fit into their patrol.
Name Contact Information		Name Contact Information	
<input type="checkbox"/>	Strategist: Find a person who has skills to develop a logical work plan and map out the steps that need to be taken to implement a plan of action.	<input type="checkbox"/>	Maintenance: A park and ride will need to be maintained by a municipality, NHDOT District, or transit operator. Determine who would be the responsible party and make sure you understand what the maintenance plan is for snow removal, picking up trash and maintaining the facility and any amenities.
Name Contact Information		Name Contact Information	
<input type="checkbox"/>	Engineer: Someone who has a solid technical understanding about design, materials and developing solutions to engineering problems.	<input type="checkbox"/>	Alternative Transportation Services: Make sure that you are coordinating the placement of the facility with any transit provider in the area that has existing or planned service. Commute Green New Hampshire/Rideshare coordinator groups should also be consulted. Don't forget biking interest groups if there are bike connection opportunities.
Name Contact Information		Name Contact Information	
<input type="checkbox"/>	Publicly Esteemed Leader: Having a person that is in public office or well respected in the community will help win public support and provide legitimacy and public oversight to your cause.	<input type="checkbox"/>	Budgeting: If it's a public facility, make sure you identify the government official whose job it is to develop and formally present a budget for building and then maintaining the proposed facility. If it's a private facility, work with land owner.
Name Contact Information		Name Contact Information	
<input type="checkbox"/>	Documenter: Find someone who is willing to keep records and take meeting minutes as your task force advances its project.	<input type="checkbox"/>	Legal: While the Park and Ride Toolkit contains basic legal information, it is not legal advice. The task force should retain the services of an attorney and consult them on any legal questions.

Tool 3: Funding Sources for Planning and Construction²³

1) Plan NH: Visioning for Sustainable Communities

Plan NH is a non-profit organization, founded in 1989. Membership is comprised of professionals related to the building industries (and others). Plan NH promotes ideas and trends and strategies that lead to vibrant, healthy communities. Plan NH works with organizations throughout the state towards realizing a vision of an economically, environmentally and socially vibrant NH in which:

- Towns and neighborhoods balance necessary development with preserving their unique, traditional characteristics
- Mixed-use centers, including affordable residential spaces, are encouraged
- Natural resources, open areas, undeveloped land as well as agricultural assets are protected and honored
- Traditional and creative ways of getting about increase access to jobs, food, education, healthcare and other services, friends and family
- Clean energy for heat and power becomes standard
- Collaboration and cooperation between and among towns and regions enhance the vitality of life in the Granite State.

Information:

- **Information can be found at:** <https://plannh.org>
- **Grant Rounds:** March

2) Community Development Block Grant Planning Grants (HUD)

The primary purpose of the CDBG program is the development of viable communities by providing decent housing, suitable living environments, and expanding economic opportunities, principally for low and moderate income people. The program is sponsored by the US Department of Housing and Urban Development (HUD).

CDFA distributes CDBG grants to NH's cities, towns, and counties.* A nonprofit agency may also apply through its municipality or county as a sub-recipient of CDBG money. All eligible municipalities and counties can apply for up to \$500,000 in CDBG funds per year.

The Community Development Finance Authority (CDFA) Community Development Block Grant (CDBG) program has two competitive application rounds each year, one in April and one in October.

Information:

- **Information can be found at:** www.NHCDFA.org
- **Grant Rounds:** April and October

²³ Grants and other funding sources developed from lists available on www.resourceamerica.org

3) Smart Growth Implementation Assistance (SGIA) (EPA)

The SGIA program focuses on complex or cutting-edge issues, such as stormwater management, code revision, **transit-oriented development**, affordable housing, infill development, **corridor planning**, green building, and climate change. Applicants can submit proposals under 4 categories: community resilience to disasters, job creation, the role of manufactured homes in sustainable neighborhood design or medical and social service facilities siting.

Information:

- **Information can be found at:** <http://epa.gov/smartgrowth/sgia.htm>
- **Grant Rounds:** March

4) Alternatives Analysis Program 5339 (FTA)

Assist in financing the evaluation of all reasonable modal and multimodal alternatives and general alignment options for identified transportation needs in a particular, broadly defined travel corridor.

- Includes an assessment of a wide range of public transportation or multimodal alternatives, which will address transportation problems within a corridor or subarea.
- Provides ample information to enable the Secretary to make the findings of project justification and municipal financial commitment.
- Supports the selection of a locally preferred alternative.
- Enables the MPO to adopt the locally preferred alternative as part of the long-range transportation plan.

Information:

- **Information can be found at:** http://www.fta.dot.gov/grants/13094_7395.html
- **Grant Rounds:** Check website

5) Transportation Planning Capacity Building Program (TPCB) (FHWA)

Provides training, technical assistance, and support to help decision makers, transportation officials, and staff resolve complex transportation needs in their communities. Resources available on topics including land use, scenario planning, TOD, non-motorized transportation, safety, community impact assessments, operations and management strategies, and analysis methods.

Information:

- **Information can be found at:** <http://www.planning.dot.gov/about.asp>
- **Grant Rounds:** Check website

6) Capacity Building for Sustainable Communities (EPA, HUD)

Funding for intermediary organizations who will assist HUD in providing technical assistance to communities engaged in planning efforts built around integrating housing, land use, transportation, and other issues. Primary support will be given to recipients of Sustainable Communities and Brownfield Area Wide Planning grants.

Information:

- **Information can be found at:** http://portal.hud.gov/hudportal/HUD?src=/program_offices/administration/grants/nofall/grpcapbldgsc
- **Grant Rounds:** [Check website](#)

7) Building Blocks for Sustainable Communities (EPA)

Many communities around the country are asking for tools to help them achieve their desired development goals, improve quality of life, and become more economically and environmentally sustainable. In response to this demand, EPA developed the Building Blocks for Sustainable Communities Program.

Building Blocks for Sustainable Communities provides quick, targeted technical assistance to selected municipal and/or tribal governments using a variety of tools that have demonstrated results and widespread application. The purpose of delivering these tools is to stimulate a discussion about growth and development and strengthen municipal capacity to implement sustainable approaches.

EPA will provide technical assistance to selected communities to implement development approaches that protect the environment, improve public health, create jobs, expand economic opportunity, and improve overall quality of life.

Information:

- **Information can be found at:** <http://www.epa.gov/smartgrowth/buildingblocks.htm>
- **Grant Rounds:** [Check website](#)

8) Sustainable Communities Research Grant Program (HUD)

The purpose of this NOPI is to inform the invited applicants to submit their full grant applications. HUD is primarily interested in sponsoring cutting edge research in affordable housing development and preservation; transportation-related issues; economic development and job creation; land use planning and urban design; green and sustainable energy practices; and a range of issues related to sustainability.

Data tracking efforts integrate housing and community development data with data about outcomes such as health, education, safety, self-sufficiency, transportation, and sustainability. Beyond measuring program impacts, analysis of the activities will add to the existing body of policy knowledge through collaboration with other public agencies and/or universities.

Information:

- **Information can be found at:** <http://www.hud.gov/offices/adm/grants/nofa10/grpnopi-scrgp24a.cfm>
- **Grant Rounds:** Check website

9) FTA Section 5309 Bus and Bus Facilities Program Grants: Bus Livability and State of Good Repair Initiatives

This program makes funds available to public transportation providers to finance capital projects. The FTA will invest in projects that fulfill the six livability principles that serve as the foundation for the DOT– HUD–EPA Partnership for Sustainable Communities:

- Provide more transportation choices: Develop safe, reliable, and economical transportation choices to... reduce our nation's dependence on foreign oil, improve air quality, reduce greenhouse gas emissions and promote public health.
- Enhance economic competitiveness: Improve economic competitiveness through reliable and timely access to employment centers...and other basic needs by workers as well as expanded business access to markets.
- Support existing communities: Target federal funding toward existing communities through such strategies as transit-oriented, mixed-use development and land recycling—to increase community revitalization, improve the efficiency of public works investments, and safeguard rural landscapes.
- Coordinate policies and leverage investment
- Value communities and neighborhoods
- Promote equitable, affordable housing

Information:

- **Information can be found at:** www.nh.gov/dot/org/aerorailtransit/railandtransit/
- **Grant Rounds:** April and October

10) Community Facilities Grants (USDA)

Community Programs provides grants to assist in the development of essential community facilities in rural areas and towns of up to 20,000 in population. Grant funds may be used to assist in the development of essential community facilities. Grant funds can be used to construct, enlarge, or improve community facilities for health care, public safety, and community and public services.

Grant funds may be used to assist in the development of essential community facilities. Grant funds can be used to construct, enlarge, or improve community facilities for health care, public safety, and community and public services. This can include the purchase of equipment required for a facility's operation. A grant may be made in combination with other CF financial assistance such as a direct or guaranteed loan, applicant contributions, or loans and grants from other sources.

Information:

- **Information can be found at:** http://www.rurdev.usda.gov/HAD-CF_Grants.html
- **Grant Rounds:** [Check website](#)

11) Congestion Mitigation and Air Improvement Quality (CMAQ) Program (FHWA)

Support for transportation projects or programs that improve air quality and relieve congestion in areas that do not meet National Ambient Air Quality Standards. Includes capital transportation investments and pedestrian/bicycle facilities and programs.

Information:

- **Information can be found at:** http://www.fhwa.dot.gov/environment/air_quality/cmaq/;
<http://www.nh.gov/dot/org/projectdevelopment/planning/tecmaq/>
- **Grant Rounds:** [Check website](#)

12) Transportation Alternatives Program (FHWA)

The Transportation Alternatives Program (TAP) authorized under Section 1122 of MAP-21 (23 U.S.C. 213(b), 101(a)(29)) provides funding for programs and projects defined as transportation alternatives, including on- and off-road pedestrian and bicycle facilities, infrastructure projects for improving non-driver access to public transportation and enhanced mobility, community improvement activities, and environmental mitigation; recreational trail program projects; safe routes to school projects; and projects for the planning, design or construction of boulevards and other roadways largely in the right-of-way of former Interstate System routes or other divided highways.

Information:

- **Information can be found at:**
<http://www.nh.gov/dot/org/projectdevelopment/planning/tecmaq/>;
<http://www.fhwa.dot.gov/map21/guidance/guidetap.cfm>
- **Grant Rounds:** [Check website](#)

13) Surface Transportation Program (FHWA)

Included in the eligible activities for the use of Surface Transportation Program funding are: “Carpool projects, fringe and corridor parking facilities and programs, including electric vehicle and natural gas vehicle infrastructure in accordance with 23 U.S.C. 137, bicycle transportation and pedestrian walkways in accordance with 23 U.S.C. 217, and the modification of public sidewalks to comply with the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.). Carpool Project is defined in 23 U.S.C. 101(a)(3), and described in 23 U.S.C. 146. Fringe and corridor parking facilities is described in 23 U.S.C. 137, and further discussed in 23 U.S.C. 142. Not subject to Location of Project requirement in section 133(c).”

Information:

- **Information can be found at:** <http://www.fhwa.dot.gov/map21/guidance/guidestp.cfm>
- **Grant Rounds:** Not a competitive grant process – contact NHDOT Bureau of Planning and Community Assistance

14) Transportation Infrastructure Finance and Innovation Act (TIFIA)

Provides federal credit assistance in the form of direct loans, loan guarantees, and standby lines of credit to finance surface transportation projects of national and regional significance. TIFIA can help advance qualified, large-scale projects that otherwise might be delayed or deferred because of size, complexity, or uncertainty over the timing of revenues.

Information:

- **Information can be found at:** <http://www.planning.dot.gov/about.asp>
- **Grant Rounds:** [Check website](#)

15) Transit Investment in Greenhouse Gas and Energy Reduction (TIGGER)

Managed by FTA's Office of Research, Demonstration and Innovation in coordination with the Office of Program Management and FTA Regional Offices, the TIGGER Program works directly with public transportation agencies to implement new strategies for reducing greenhouse gas emissions and/or reduce energy use within transit operations. These strategies can be implemented through operational or technological enhancements or innovations. To align the TIGGER Program with other strategic initiatives, FTA encourages project implementation that will enhance operational efficiencies, demonstrate innovative electric drive strategies, and create an environment prioritizing public transportation through intelligent transportation systems (ITS) or other related technology approaches to achieve efficiency and sustainability goals.

Provides funding for

- capital investments that assist in reducing the energy consumption of a transit system and
- capital investments that will reduce greenhouse gas emissions of a public transportation system.

Information:

- **Information can be found at:** http://www.fta.dot.gov/12351_11424.html
- **Grant Rounds:** [Check website](#)

Funding Sources based on information from “Reconnecting America (www.reconnectingamerica.org)”

Funding Program	Sponsoring Agency	Who can Apply?	Description	Uses	Web Address
Transportation Planning Capacity Building Program (TPCB)	DOT (FHWA/FTA)	State, metropolitan, rural and small communities, tribal and public lands	Provides training, technical assistance, and support to help decision makers, transportation officials, and staff resolve complex transportation needs in their communities. Resources available on topics including land use, scenario planning, TOD, non-motorized transportation, safety, community impact assessments, operations and management strategies, and analysis methods.	Planning and Research	http://www.planning.dot.gov/
Alternatives Analysis Program	DOT (FTA)	MPOs, city agencies, transit agencies, and other local government authorities	Assist in financing the evaluation of all reasonable modal and multimodal alternatives and general alignment options for identified transportation needs in a particular, broadly defined travel corridor.	Planning	http://www.fta.dot.gov/grants/13094_7395.html
Sustainable Communities Research Grant Program	HUD	Academic Researchers	Research grants to support cutting-edge research on issues related to sustainability, including affordable housing development and preservation, transportation-related issues, economic development and job creation, land use planning and urban design, etc.	Research	http://portal.hud.gov/hudportal/HUD?src=/program_offices/administration/grants/fundsavail/nofa13/scrgp
Capacity Building for Sustainable Communities	EPA/HUD	501(c)(3), a local or state public agency, a for-profit organization, a nationally recognized and accredited University or College;	Funding for intermediary organizations who will assist HUD in providing technical assistance to communities engaged in planning efforts built around integrating housing, land use, transportation, and other issues.	Technical Assistance	http://portal.hud.gov/hudportal/HUD?src=/program_offices/administration/grants/nofa11/grpcapbldgsc

Funding Program	Sponsoring Agency	Who can Apply?	Description	Uses	Web Address
Building Blocks for Sustainable Communities	EPA	States, territories, Indian Tribes, interstate organizations, intrastate organizations, public and private universities and colleges, hospitals, laboratories, and other public or private nonprofit institutions.	EPA will provide technical assistance to selected communities to implement development approaches that protect the environment, improve public health, create jobs, expand economic opportunity, and improve overall quality of life.	Technical Assistance	http://www.epa.gov/smartgrowth/buildingblocks.htm
Smart Growth Implementation Assistance (SGIA) program	EPS	Tribes, states, regions, local governments, nonprofits that have a partnership with a government entity.	Stormwater management, code revision, transit-oriented development, affordable housing, infill development, corridor planning, green building, and climate change.	Technical Assistance	http://epa.gov/smartgrowth/sgia.htm
Community Facilities Grants	USDA	Municipalities, counties, and special-purpose districts, as well as non-profit corporations and tribal governments.	Community Programs provides grants to assist in the development of essential community facilities in rural areas and towns of up to 20,000 in population. Grant funds may be used to assist in the development of essential community facilities, to construct, enlarge, or improve community facilities for health care, public safety, and community and public services.	Development, financing, construction	http://www.rurdev.usda.gov/HAD-CF_Grants.html
Congestion Mitigation & Air Quality (CMAQ) Program	NH DOT (Federal Aid Program FHWA/FTA)	State and local public agencies, public and private transportation entities, MPOs,	Support for transportation projects or programs that improve air quality and relieve congestion in areas that do not meet National Ambient Air Quality Standards. Includes capital transportation investments and pedestrian/bicycle facilities and programs	Capital Infrastructure Investments	http://www.nh.gov/dot/org/projectdevelopment/planning/tecmaq/

Funding Program	Sponsoring Agency	Who can Apply?	Description	Uses	Web Address
Discretionary Bus and Bus Facilities (Section 5309): State of Good Repair Initiative	DOT (FTA)	Transit agencies or other public transportation providers, States or Indian Tribes.	Provide funding to rehabilitate bus and bus facilities. FTA will prioritize the replacement and rehabilitation of intermodal facilities that support the connection of bus service with multiple modes of transportation, including but not limited to: rail, ferry, intercity bus and private transportation providers. In order to be eligible for funding, intermodal facilities must have adjacent connectivity with bus service.	Capital Infrastructure Investments	http://www.fta.dot.gov/grants/13094_3557.html
Surface Transportation Program	DOT (FHWA)	Apportioned to States by a formula	Carpool projects, fringe and corridor parking facilities and programs (among many other uses)	Capital Infrastructure Investments	http://www.fhwa.dot.gov/safetealu/factsheets/stp.htm
Transportation Infrastructure Finance and Innovation Act (TIFIA)	DOT (FHWA)	State departments of transportation; local governments; transit agencies; special authorities; special districts; railroad companies; and private firms or consortia that may include companies specializing in engineering, construction, materials, and/or the operation of transportation facilities.	Provides federal credit assistance in the form of direct loans, loan guarantees, and standby lines of credit to finance surface transportation projects of national and regional significance	Capital Infrastructure Investments	http://www.fhwa.dot.gov/ipd/tifia/
Transit Investment in Greenhouse Gas and Energy Reduction (TIGGER)	DOT (FTA)	Transit agencies or state DOTs	Provides funding for (1) capital investments that assist in reducing the energy consumption of a transit system and (2) capital investments that will reduce greenhouse gas emissions of a public transportation system.	Capital Infrastructure Investments	http://www.fta.dot.gov/12351_11424.html

Funding Program	Sponsoring Agency	Who can Apply?	Description	Uses	Web Address
Transportation Investment Generating Economic Recovery (TIGER)	DOT (FHWA)	State, local, and tribal governments, transit agencies, port authorities, MPOs, other political subdivisions of State or local governments	<p>Projects that have a significant impact on desirable long-term outcomes for the Nation, a metropolitan area, or a region. The following:</p> <p>1) State of Good Repair: Improving the condition of existing transportation facilities and systems, with particular emphasis on projects that minimize life-cycle costs.</p> <p>2) Economic Competitiveness: Contributing to the economic competitiveness of the United States over the medium- to long-term.</p> <p>3) Livability: Fostering livable communities through place-based policies and investments that increase transportation choices and access to transportation services for people in communities across the United States.</p> <p>4) Environmental Sustainability: Improving energy efficiency, reducing dependence on oil, reducing greenhouse gas emissions and benefitting the environment.</p> <p>5) Safety: Improving the safety of U.S. transportation facilities and systems.</p>	Capital Infrastructure Investments	http://www.dot.gov/tiger

Tool 4: Local Revenue Generation

A summary of sources for local revenue generation from the [SSTI Report on State and Local Transportation Revenue Sources \(SSTI, 2013\)](#). This guide was put together by the *State Smart Transportation Initiative* and identifies ways communities and states across the country are finding ways to fund transportation improvements and ongoing maintenance and operations of transportation facilities.

Revenue Stream	Description of Source	Fee Type	Level of Government	Revenue Potential	Modal Applicability	Page Reference Number in the SSTI Revenue Guide
Alternative Fuel Tax	Fee assessed to owners of alternative fuel vehicles to account for loss in gas tax revenue through reduced fuel consumption.	Fuel Tax	State & Local	Marginal	Bike facilities	Page 21
Fuel- Oil Companies Franchise Tax	Tax on oil companies operating in a state. Some states cap, others index to inflation.	Fuel Tax	State	Very high, especially for states that either do not use or have capped this tax	Highway	Page 26
General Purpose Revenue	Revenue from state income and sales taxes. Often includes vehicle registration and sales fees.	Non-User Fee	State & Local	Very high	All modes	Page 36
Local Income Taxes	Levied as either a payroll tax or a general income tax. Funds from tax may be used for transportation projects.	Non-User Fee	Local	Marginal, not used on a large scale, varies by state	All modes	Page 33
Local Options Sales Tax	Used to help fill budget gaps and revenue shortfalls. May require a referendum to implement.	Non-User Fee	Local	High to very high	All modes	Page 35
Grant Anticipation Revenue Vehicles	Debt-financing tool generating up-front capital. Future federal funds used to repay debt and related financing costs.	Private Investment	Federal & State	Moderate	Highway	Page 53
Private Activity Bonds	Bonds designed to encourage private investment in transportation projects. Provides private developers and operators access to tax exempt interest rate bonds.	Private Investment	Local	Moderate to marginal	All modes	Page 54
Public-Private Partnership	Contractual arrangements between a public agency and private entity that facilitate participation by the private sector in operations and maintenance of	Private Investment	State	Moderate to high, depending on how implemented	All modes	Page 55

Revenue Stream	Description of Source	Fee Type	Level of Government	Revenue Potential	Modal Applicability	Page Reference Number in the SSTI Revenue Guide
	infrastructure projects or facilities.					
Section 129 Loans	Allows states to use regular federal-aid apportionments to fund loans to projects (toll and non-toll) that have dedicated revenue streams.	Private Investment	Federal	Marginal	Highway bridge and	Page 58
State Infrastructure Bank	Revolving loan funds established to capitalize on existing funding sources.	Private Investment	State & Local	Very high to high for locally planned and implemented projects	All modes	Page 60
Advertising	Sale of advertising space on buses, inside transit facilities, at highway rest stops, on ferry boats, and in terminals.	Secondary Business Opportunities	State & Local	Moderate to high, depending on lease agreements	Highway transit and	Page 39
Concessions	Leasing of retail space at locations such as highway rest areas, transit centers, etc.	Secondary Business Opportunities	State & Local	Moderate	Highway transit and	Page 40
Development Impact Fees/Negotiated Extraction	Charges associated with costs incurred with extension of public services for private developments.	Secondary Business Opportunities	Local	Marginal to moderate, depending on project	Highway transit and	Page 43
Joint Development	Private-sector partner either provides transportation facility or makes financial contribution to offset public cost. Primarily used when transportation facility is adjacent to real estate development.	Secondary Business Opportunities	State & Local	High	All modes	Page 44
Naming Rights	Selling of rights to name public facilities, e.g., toll roads, highway corridors, transit stations.	Secondary Business Opportunities	State & Local	Moderate	Highway transit and	Page 41
Transportation Utility Fees	Fees assessed on properties based on amount of trips generated. Provides direct connection between costs of transportation facilities and their demand.	Secondary Business Opportunities	State & Local	High – In some states, annual registration and related fees generates upward of one quarter of the dedicated transportation fund.	All modes	Page 50

Revenue Stream	Description of Source	Fee Type	Level of Government	Revenue Potential	Modal Applicability	Page Reference Number in the SSTI Revenue Guide
Tolls- High Occupancy Vehicles Toll Lanes	Priced lanes that allow single-occupancy vehicles to travel in high occupancy vehicle lanes.	Tolling and Road Pricing	State & Local	Very high	Highways	Page 28
Carbon Tax	Charge for amount of carbon dioxide pollution generated through burning of fossil fuels in motor vehicles.	User Fee	State	Very high	Transit	Page 7
Farebox Collection	Fare collected from transit riders by transit systems.	User Fee	Local	High	Transit	Page 9
Mileage Based - VMT/MBUF	Distance-based tax. Vehicle operators charged a per-mile fee instead of or in addition to a gas tax.	User Fee	State & Local	Very high	Transit	Page 14
Severance Fees	Levies charged on operators in natural resource extraction industries. Fees used to fund road improvements in rural areas where heavy trucks contribute the most to roadway wear and tear.	User Fee	State, Regional, and Local	Very high for specific projects in municipalities	Transit	Page 13
Bike Licensing Fees and Trail Passes	States and municipalities across the country have begun to look into charging bike registration fees in an effort to introduce another revenue stream and recoup some of the expenses associated with bike infrastructure. Governments enforce such a policy by requiring that all bicycles operating within a certain state or municipality be properly registered within the municipality.	User Fee	Local	Marginal	Bike facilities	Page 6
Fine-Based Funding	Increasing traffic fines or dedicating their proceeds to transportation projects and maintenance is one way a state or municipality can increase transportation funding without increasing other taxes. This strategy also has the side benefit of reducing dangerous driving behavior.	User Fee	State & Local	Marginal	All modes	Page 10

Revenue Stream	Description of Source	Fee Type	Level of Government	Revenue Potential	Modal Applicability	Page Reference Number in the SSTI Revenue Guide
Heavy Vehicle Fees	Heavy vehicle fees are commercial registration fees for designated vehicles. Fees are set based on the vehicle's weight, in an effort to recoup expenses that result from the extra wear and tear heavy commercial vehicles imposes on the road system. The federal government administers the Heavy Vehicle Use Tax (HVUT), an annual fee for commercial vehicles over 55,000 pounds.	User Fee	State	Moderate	Highway	Page 12
Vehicle Title, Registration, and Vanity Plate Fees	All states levy a motor vehicle registration fee for passenger vehicles. These fees are usually paid on an annual or biannual basis, depending on the state. In some states, local or county governments can also levy their own fees to help fund their transportation systems. For the average vehicle, fees range from a low of \$8 in Arizona to a high of \$167 in the City and County of Honolulu, Hawaii. Selling personalized license plates can also add to the revenue stream.	User Fee	State & Local	High	All modes	Page 18
Congestion Pricing	Congestion pricing charges motorists more for using certain roads and bridges during periods of heavy use. Congestion pricing has multiple benefits: it has enormous potential to generate revenue through fees charged to motorized traffic, and it effectively manages demand for a congested road, thereby reducing congestion and freeing up street capacity for all users.	Tolling and Road Pricing	State	High	All modes (on the Turnpike System)	Page 28
Priced Zones	This variant of congestion pricing is a cordon-based tolling	Tolling and Road Pricing	Local	Very High	All modes	Page 29

Revenue Stream	Description of Source	Fee Type	Level of Government	Revenue Potential	Modal Applicability	Page Reference Number in the SSTI Revenue Guide
	system, ideally implemented in the central business district of a major city. This type of pricing offers a disincentive to commute to the central business district of a city in a single-occupancy vehicle, thereby helping to relieve congestion and raising revenues that can be used to improve the transportation system.					
Variable Pricing	Variable pricing is a tolling scheme that requires drivers to pay variable prices to use a transportation facility – most commonly express lanes, bridges, and parking spaces. Prices for access to the lane, bridge, or parking space vary as demand for travel changes, based on the time of day, the day of the week, and the direction the vehicle is traveling.	Tolling and Road Pricing	Local	High	All modes	Page 29

Tool 5: Ownership Agreement Components

Most of the contracts associated with a park and ride should include the following information. Depending on the precise nature of the agreement, other provisions are likely to be necessary and some of the provisions below will not be needed. Parties should engage legal counsel for advice on contracts.

- Name, address, and contact person for each party
- What type of entity each party is (municipality, nonprofit, limited liability company, etc.)
- Date when agreement becomes effective and terminates
- Early termination or extension (whether and how the agreement can be terminated early or extended beyond the original term)
- Description of the services
- Date when services should begin and end
- Description of the property and any improvements on it
- Consideration (the price or other payment and financial details)
- Taxes (will any taxes apply, and if so, which party will pay them)
- Permits (will any permits be required, and if so, which party is responsible for them)
- Which State's laws apply
- What laws each party is responsible for complying with
- What is considered to be default or breach
- What is required in the event of default or breach
- Dispute resolution (how will disputes between the parties be handled)
- Hazardous materials (are any allowed or not, if so, any limits or other considerations)
- Right to inspect
- Confidentiality (are some parts or all of the agreement to be kept secret)
- Assignability (can the agreement be passed on to a successor)
- Indemnification (will one party protect the other in the event of loss)
- Insurance that each party will maintain
- Notice (how the parties are required to communicate about the agreement)
- Amendment (can the agreement be changed, and if so, how)
- Severability (if one part of the agreement is found to be unenforceable, does the rest of the agreement still stay in force)
- Entire agreement (are there other agreements between the parties written up elsewhere, or is the agreement the entire agreement between the parties)
- Signatures of duly authorized representative of each party
- Counterparts (signatures do not need to appear on the same sheet, counterparts are allowed)

Tool 6: Defining the Travel

1. Define the Host Community

Host Community Name

What community do you think might be a good host community for a park and ride facility? Some things you may want to consider are things like the community's proximity to one or more arterial highways upstream of congestion, the anticipated support of the community, and the proximity to what you think might be a park and ride user population.

2. Determine Predominant Direction of Travel and Major Destinations

For the host community identified in section 1, show the number of trips workers are making from the host community in each direction based on trip length:

	10 to 24 miles	25 to 50 miles	Over 50 miles	Totals
North				0
Northeast				0
East				0
Southeast				0
South				0
Southwest				0
West				0
Northwest				0
Totals	0	0	0	0

The purpose of this section is to understand commuting trends originating from the host community by looking at direction of travel as well as length of travel. Notice that trips less than 10 miles are not accounted for in the worksheet. This is because studies suggest, that except in the case of satellite or urban periphery parking facilities, these kinds of facilities do not typically attract park and ride users due to the close proximity to their destination. Though there are likely to be exceptions, especially in destinations where parking is costly or limited, the benefits (parking savings, commuting savings, time savings) probably do not outweigh the inconveniences of parking within 10 miles of the destination. In order to determine the direction and length of travel of commuters, planners should consult the US Bureau of the Census' On the Map tool at <http://onthemap.ces.census.gov/>. A home based distance/direction analysis will provide planners with the information needed to fill in the first worksheet. After filling in the worksheet, take note of any results in the "Totals" areas of the worksheet in order to determine if there are any directions or trip lengths that stand out as having a disproportionate number of commuting trips.

Identify the top ten destinations and their direction based on trip lengths categories for the host community.

Job Destination	# of Jobs	Direction from Host Community	Mileage
	0	Choose Direction	Choose One
	0	Choose Direction	Choose One
	0	Choose Direction	Choose One
	0	Choose Direction	Choose One
	0	Choose Direction	Choose One
	0	Choose Direction	Choose One
	0	Choose Direction	Choose One
	0	Choose Direction	Choose One
	0	Choose Direction	Choose One
	0	Choose Direction	Choose One

For the second worksheet, you will also use the On the Map tool at <http://onthemap.ces.census.gov/>. Use a home based destination analysis to determine the top ten commuting destinations for the host community and fill in the worksheet accordingly. In addition to showing a list of the top destinations, the analysis will also provide a map. Use the map and its' legend to determine the directions and distance of the destinations from the host community.

The third worksheet asks you to list up to three destinations that might attract park and ride users.

Take note of the directions of the various destinations to determine a predominant direction of travel.

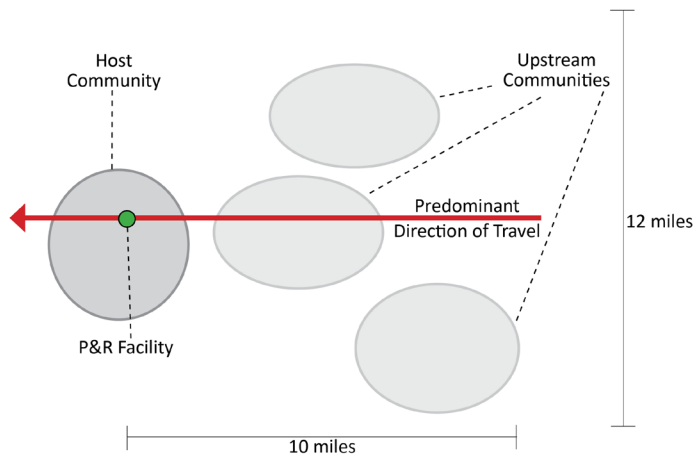
List up to three specific major destinations other than employers that might attract park and ride users due to limited or expensive parking at the destination (airports, performing arts centers, sports arenas, popular central business districts).

Destination Description	Community

My predominant direction of travel is .

3. Define the Market Area in Which You Will Draw Park and Ride Facility Users

Using the figure below, identify a host community and upstream communities that you think represent areas from which a park and ride will draw users.



Host Community

Upstream Community 1

Upstream Community 2

Upstream Community 3

Upstream Community 4

Upstream Community 5

Based on the predominant direction of travel that you determined in the preceding section, there should be an arterial highway that carries traffic in that direction towards a cluster of jobs or other important destinations (represented as the red arrow in the adjacent figure). This section now assumes that you have a general idea of the vicinity in which a park and ride might be located. Ideally this should be adjacent to or near the arterial highway. This area (represented as the green dot) provides a reference point for additional analysis using this tool.

After choosing a host community and the vicinity of a park and ride location, begin looking at the upstream communities that are part of the travel shed carrying traffic toward the host community. We recommend including all towns that are 10 miles upstream of a park and ride vicinity reference point (represented as drawing a line 10 miles in the opposite direction of the predominant direction of travel). Along this new line moving towards upstream communities, identify the area of land 6 miles on each side of the line (12 miles in total).

Now look at the number of towns that are encompassed in this 10 mile long by 12 mile wide area and identify them as the Host Community and Upstream Communities.

4. Understand Upstream Community Commuter Trends

Select up to three upstream communities that might pass through the host park and ride community going in the already identified predominant direction of travel. Verify the number of commuters in which each upstream community is commuting towards the predominant direction of travel.

Community	10 to 24 miles	25 to 50 miles	Over 50 miles	Totals
Host Community				0
Upstream Community 1				0
Upstream Community 2				0
Upstream Community 3				0
Upstream Community 4				0
Upstream Community 5				0

Using the same home-based distance/direction analysis in section 2, determine the direction and length of travel of commuters for up to five upstream communities identified in the preceding section.

Based on the resulting data, this is a good point at which to double check your assumptions for the travel shed area. Are commuters from each of your identified communities moving in the predominant direction of travel as your traffic shed? Or is another direction of travel a better fit? Is the host community that you identified really the best location for a park and ride or would it be better located in an alternate community?

Tool 7: Tool 13: Regional Planning Commission Representation

New Hampshire Regional Planning Commissions: Municipal Representation					
Central NH Regional Planning Commission	Lakes Region Planning Commission	North Country Council			Nashua Regional Planning Commission
Allenstown	Alexandria	Albany	Gorham	Sargents Purchase	Amherst
Boscawen	Alton	Atkinson & Gilmanton	Greens Grant	Second College Grant	Brookline
Bow	Andover	Bartlett	Groton	Shelburne	Hollis
Bradford	Ashland	Bath	Hadleys Purchase	Stark	Hudson
Canterbury	Barnstead	Beans Grant	Hales Location	Stewartstown	Litchfield
Chichester	Belmont	Beans Purchase	Hart's Location	Stratford	Lyndeborough
Concord	Bridgewater	Benton	Haverhill	Success	Mason
Deering	Bristol	Berlin	Jackson	Sugar Hill	Merrimack
Dunbarton	Center Harbor	Bethlehem	Jefferson	Thompson & Meserve	Milford
Epsom	Danbury	Cambridge	Kilkenny	Thornton	Mont Vernon
Henniker	Effingham	Campton	Lancaster	Warren	Nashua
Hillsborough	Franklin	Carroll	Landaff	Waterville Valley	Pelham
Hopkinton	Freedom	Chandlers Purchase	Lincoln	Wentworth	Wilton
Loudon	Gilford	Chatham	Lisbon	Wentworths Location	
Pembroke	Gilmanton	Clarksville	Littleton	Whitefield	
Pittsfield	Hebron	Colebrook	Livermore	Woodstock	
Salisbury	Hill	Columbia	Low & Burbanks		
Sutton	Holderness	Conway	Lyman		
Warner	Laconia	Crawfords Purchase	Madison		
Webster	Meredith	Cutts Grant	Martins Location		
	Moultonborough	Dalton	Milan		
	New Hampton	Dixs Grant	Millsfield		
	Northfield	Dixville Notch	Monroe		
	Ossipee	Dummer	Northumberland		
	Sanbornton	Easton	Odell		
	Sandwich	Eaton	Pinkham's Grant		
	Tamworth	Ellsworth	Pittsburg		
	Tilton	Errol	Plymouth		
	Tuftsboro	Erving's Location	Randolph		
	Wolfeboro	Franconia	Rumney		

New Hampshire Regional Planning Commissions: Municipal Representation					
Rockingham Planning Commission	Southern New Hampshire Planning Commission	Strafford Regional Planning Commission	South West Regional Planning Commission		Upper Valley Lake Sunapee Regional Planning Commission
Atkinson	Auburn	Barrington	Alstead	Troy	Canaan
Brentwood	Bedford	Brookfield	Antrim	Walpole	Charlestown
Danville	Candia	Dover	Bennington	Westmoreland	Claremont
East Kingston	Chester	Durham	Chesterfield	Winchester	Cornish
Epping	Deerfield	Farmington	Dublin	Windsor	Croydon
Exeter	Derry	Lee	Fitzwilliam		Dorchester
Fremont	Goffstown	Madbury	Francestown		Enfield
Greenland	Hooksett	Middleton	Gilsum		Goshen
Hampstead	Londonderry	Milton	Greenfield		Grafton
Hampton	Manchester	New Durham	Greenville		Grantham
Hampton Falls	New Boston	Newmarket	Hancock		Hanover
Kensington	Raymond	Northwood	Harrisville		Lebanon
Kingston	Weare	Nottingham	Hinsdale		Lempster
New Castle	Windham	Rochester	Jaffrey		Lyme
Newfields		Rollinsford	Keene		New London
Newington		Somersworth	Langdon		Newbury
Newton		Strafford	Marlborough		Newport
North Hampton		Wakefield	Marlow		Orange
Plaistow			Nelson		Orford
Portsmouth			New Ipswich		Piermont
Rye			Peterborough		Plainfield
Salem			Richmond		Springfield
Sandown			Rindge		Sunapee
Seabrook			Roxbury		Unity
South Hampton			Sharon		Washington
Stratham			Stoddard		Wilmot
			Sullivan		
			Surry		
			Swanzey		
			Temple		

Tool 8: Understanding Traffic Growth and Congestion

After determining the communities in your travel shed (see Tool 5) identify the major arterials and collectors in the travel shed, and then provide data and Level of Service data if available. The first entry should represent the target arterial carrying the predominant direction of traffic.

Highway Name	Location Description	Most Recent AADT (Year)	Previous AADT (Year)	AADT % Change	Level of Service (Year)
Arterial	Location Description	AADT (Year)	AADT (Year)		LOS (Year)
Highway	Location Description	AADT (Year)	AADT (Year)		LOS (Year)
Highway	Location Description	AADT (Year)	AADT (Year)		LOS (Year)
Highway	Location Description	AADT (Year)	AADT (Year)		LOS (Year)
Highway	Location Description	AADT (Year)	AADT (Year)		LOS (Year)
Highway	Location Description	AADT (Year)	AADT (Year)		LOS (Year)
Highway	Location Description	AADT (Year)	AADT (Year)		LOS (Year)
Highway	Location Description	AADT (Year)	AADT (Year)		LOS (Year)
Highway	Location Description	AADT (Year)	AADT (Year)		LOS (Year)
Highway	Location Description	AADT (Year)	AADT (Year)		LOS (Year)
Highway	Location Description	AADT (Year)	AADT (Year)		LOS (Year)

This section allows you to enter up to eleven major highways that are part of your traffic shed in the 10 mile by 12 mile area you previously identified. Focus on arterial and collector roads only, starting with State roads. The first entry should indicate the target arterial that you have identified carrying traffic in the predominant direction of travel. For each highway, if data is available, list the most recent AADT and the AADT recorded three years prior. This gives you a reasonable indication of traffic growth in the area you are studying. On average, traffic data is collected every three years in New Hampshire. Go to the following link for this data:

<http://www.nh.gov/dot/org/operations/traffic/tvrlocations/index.htm>

Level of Service data is generally less available, but NHDOT maintains a map of LOS for arterial highways in the State here:

<http://www.nh.gov/dot/org/projectdevelopment/planning/gis-data-catalog/>

What do your results say? Is traffic growth or congestion a concern on your corridor? Based on existing traffic growth rates, what can you expect traffic to be in 10 years?

Tool 9: Understanding Demographics

Gather key demographic indicators to understand populations most likely to use park and rides for the host community and up to three upstream communities. State of New Hampshire data is provided as a baseline for comparison.

Categories	Land Area in Square Miles	Total Population	Total Households	Target Park and Ride User Populations and Households				
				Population 15-39	Labor Force Working Outside of Place of Residence	Households with Cost of Housing 30% and above	Non-Family Households	Households with 1 or Less Vehicles
New Hampshire Total	8652.65	1,315,911	514,869	409,248	462,667	196,261	166,829	179,988
New Hampshire Per Square Mile		152.08	59.5	47.3	53.47	22.68	19.28	20.8
New Hampshire Percent				31%	35%	38%	32%	35%
Host Community Total								
0 Per Square Mile		0.00	0.00	0.00	0.00	0.00	0.00	0.00
0 Percent				0%	0%	0%	0%	0%
Upstream Community 1 Total								
1 Per Square Mile		0.00	0.00	0.00	0.00	0.00	0.00	0.00
1 Percent				0.00%	0.00%	0.00%	0.00%	0.00%
Upstream Community 2 Total								
2 Per Square Mile		0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 Percent				0.00%	0.00%	0.00%	0.00%	0.00%
Upstream Community 3 Total								
3 Per Square Mile		0.00	0.00	0.00	0.00	0.00	0.00	0.00
3 Percent				0.00%	0.00%	0.00%	0.00%	0.00%
Upstream Community 4 Total								
4 Per Square Mile		0.00	0.00	0.00	0.00	0.00	0.00	0.00
4 Percent				0.00%	0.00%	0.00%	0.00%	0.00%
Upstream Community 5 Total								
5 Per Square Mile		0.00	0.00	0.00	0.00	0.00	0.00	0.00
5 Percent				0.00%	0.00%	0.00%	0.00%	0.00%

The worksheet on the previous page requires you to: 1) fill in a name for your selected host community and up to five upstream communities, and then 2) fill in eight data sets for those communities (information about where to find the data sets follows). After that information is entered into the worksheet, the rest of sheet will calculate the density and the percent of target park and ride user populations and households in the host community and identified upstream communities.

The purpose of figuring out density of target populations in each community is an attempt to understand if those groups are in close proximity to each other and the park and ride . The theory is that the greater the density of target populations in the vicinity of the park and ride , the greater opportunities of matching users to the nearby park and ride as well as carpool partners. The percentage fields for each of the communities allow you to get a sense of the proportion of those special populations to the rest of the population. The purpose of providing statewide New Hampshire data is to have a baseline with which to compare community data.

Recommended sources for the following data points are as follows:

- Land Area in Square Miles: Go to the US Bureau of Census' Gazetteer Files and look up the "county subdivision" files for New Hampshire. Cross reference your land area with Column 8 which has a column header called "ALAND". The website portal is at <http://www.census.gov/geo/maps-data/data/gazetteer.html>

The website portal for all remaining data can be accessed at <http://factfinder2.census.gov/> . Use the most recent 5 year estimate American Survey data available and it is recommended you use "county subdivision" geographic data for your data sets.

- Total Population: The more potential users increases the odds of having a successful park and ride . Look up Table S0101 for total population data.
- Population 15-39: Studies suggest you are more likely to find park and ride users that are under the age of 40. Using Table S0101, which is referenced above, add up the number of people ages 15-39 for the communities that you are analyzing.
- Labor Force Working Outside of Place of Residence: Commuter park and ride users are not likely to use a park and ride if they work in the same town that they live in, therefore this data looks only at people working outside of their place of residence. Look up Table BO8009 using the "Worked outside MCD of residence" dataset.
- Total Households: Look up Table DP04 using "Occupied Housing Units" data.
- Cost of Housing 30% and above: We recommend finding out how many households pay 30% or more of their household income on housing (either with a mortgage, without a mortgage, or rent). This is an indicator of a stretched budget that could use some relief by decreasing transportation costs. This data is available in Table DP04.
- 1 or Less Vehicle: The average New Hampshire household size is 2.48 people but 35% of those households have one or less vehicles severely restricting their mobility. Use Table DP04 to find out how many households have 1 or less vehicle.

Tool 10: Guidelines for Preparing a Purpose and Need Statement

A Purpose and Need statement²⁴ helps communities identify and evaluate project alternatives such as the creation of a park and ride. It should be as brief and concise as possible. The purpose and need statement should clearly define the geographical termini of the area that the statement is looking at.

The Purpose defines the transportation problem to be solved (the need) and outlines the goals and objectives of a specific project. The purpose should describe the reason a town or agency is doing the project. It should not be worded as a solution. For example, “The purpose of this project is to develop a park and ride on US Route 1 between Apple Street and Zebra Road” is incorrect. It should state something more akin to, “The purpose of the project is to increase peak hour capacity on US Route 1 between Apple Street and Zebra Road.”

There may be several purposes worth noting. We recommend focusing on a core purpose, making that the focus of the statement, and adding secondary purposes as needed. Go to the “Identifying Need” section of the Report for examples of needs that could be addressed with a purpose. The core purpose can be considered “the driver” of the project, or the fundamental reason for doing the project. Secondary purposes reflect other desired changes coming from a project provide additional value. An example: “The purpose of this project is to increase peak hour capacity on US Route 1 between Apple Street and Zebra Road. Additionally, goals of the project are to provide affordable transportation choice for users of US Route 1 and improve air quality on the corridor.”

A project’s purpose should be useful for developing and evaluating potential solutions, be achievable, be unbiased and be focused on a positive outcome. Ideally the purpose should be comprehensive enough to allow for a reasonable range of alternatives, but be specific enough to limit the range of multi-modal alternatives.

The Need provides data or other evidence to support the Purpose. There should be direct and relevant connection between the need data and the purpose statement. Here is an example of some need data that could be used to support the purpose statement above: “The 2013 condition of the roadway and intersections on US Route 1 range from Level of Service (LOS) “D” to “E” between Apple Street and Zebra Road. Peak hour traffic growth on this section of roadway is increasing at an average annual rate of 2%, and is projected to change roadway and intersection conditions to LOS F by 2017. Currently, the only form of transportation accommodated on the section of road is by personal vehicle. Over sixty percent of the population of Rockingham County spends more than 40% of its income on housing and transportation, which is recognized as the threshold of transportation and housing affordability in the Rockingham Planning Commission Long Range Transportation Plan. The segment of road, in Rockingham County, is designated a non-attainment area for ozone.”

Project outcomes beyond transportation benefits should be considered in crafting the purpose and needs statements to ensure that there is a balance between transportation outcomes, environmental outcomes, community goals, and regulatory compliance issues. These can be listed as goals and objectives in the needs section of the document.

²⁴ These guidelines were adapted from “SC Memorandum on Purpose and Need Statements for Federally Funded Projects” (2010) and “USDOT Guidance on Purpose and Need Statements.”

Tool 11: Forecasting Demand

If you have determined the following items, you are that much closer to estimating park and ride demand:

- You have defined your traffic shed area (including the general location of a potential park and ride, the predominant direction of travel and the market area in which you will draw park and ride users) (see Tool 6);
- You have defined the arterial and collector roads in the market area in which you will draw park and ride users (see Tool 8);
- You have defined key demographic indicators of people living in the host community and upstream communities (see Tool 9); and
- You have identified a clear purpose and need for which you have identified park and ride as a possible alternative to address the need and satisfy the purpose (see Tool 10).

While there are a number of methods and modeling approaches that have been used in the past to determine park and ride demand, most of these models require special software, a technical knowledge base and/or experience to calibrate numerous variables to determine that demand.


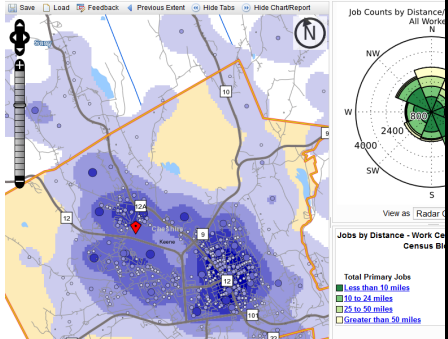
The following estimation tool is a simple method which is designed to provide a “ballpark” estimate of demand based on a limited amount of traffic data and demographic information. It is based on a model created by the Institute of Transportation Engineers (ITE). This model assumes that commuters will not make major changes from their normal travel routes to reach a park and ride, but will more likely use a facility if it is on their travel route. Demand is therefore estimated as a percentage of peak-period trips on the major arterial as well as adjacent primary highways that will divert into the facility. This methodology is not overly scientific but it is rational.

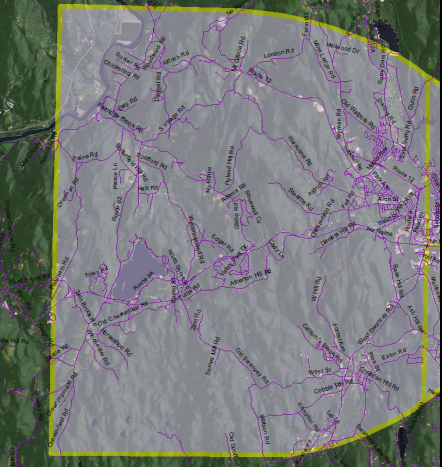
Instructions for Forecasting Demand:

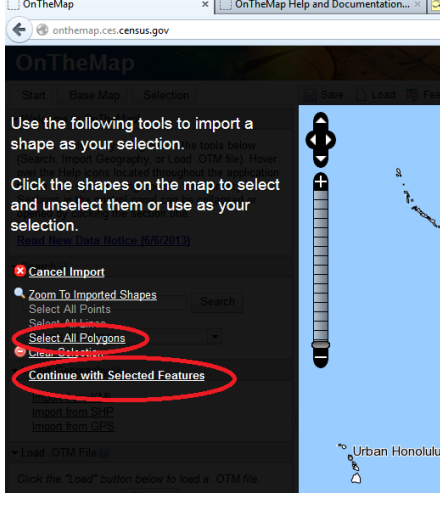
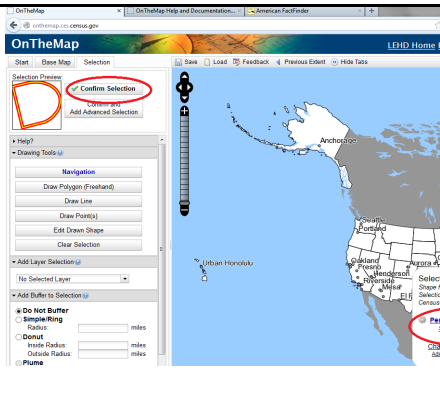
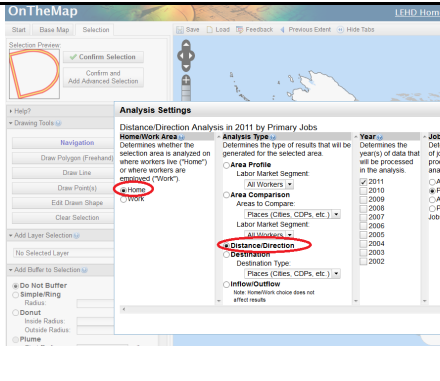
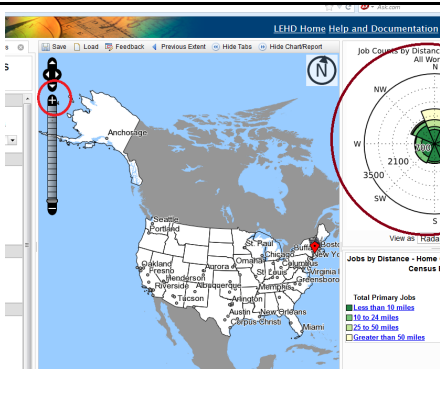
1. In Column 1 and Row 1 identify the highway in which the park and ride would be located.
2. In Column 2 and Row 1, identify the number of vehicles passing by the proposed park and ride. Peak hour data for many highways are available at the following link:
<http://www.nh.gov/dot/org/operations/traffic/tvr/detailsheets/index.htm>
3. In Column 3 and Row 1, you need to determine if you are likely to capture 1% to 3% of the peak travelers. Here, we recommend examining the results of demographic categories highlighted in the Tool worksheet and determining the applicable communities in the travel shed likely passing by the peak hour traffic location. Look and see if any of the numbers representing the proportion or density of those populations exceed the State of New Hampshire. If 2 categories or less exceed the State of New Hampshire, use a factor of 1%. If 3 or 4 categories exceed the State of New Hampshire use a factor of 2%. If 5 categories exceed the State of New Hampshire, use a factor of 3%.
4. Sometimes, there may be more than one major facility carrying traffic in the area or your park and ride cannot be located on an arterial. Columns 2 and 3 provide you enough space to address any additional major arterial adjacent to the park and ride, but perhaps not directly fronting the facility.

	Column 1	Column 2	Column 3	Column 4
	Arterial	Peak Hour Flow	Factor (1 to 3%)	Estimated Demand
Row 1				
Row 2				
Row 3				

Tool 12: Demand Estimation for Planners

Instructions	Example	
<p>1. Identify the general vicinity of where you would like to locate a park and ride lot.</p>	<p>This example looks at Keene, NH on the bypass system with the idea of placing a park and ride lot in the vicinity of the Winchester Street/NH 12/101/10 Roundabout. This is one of the higher traffic areas in the City with commuters heading in many different directions.</p>	
<p>2. Identify the predominant direction of travel for park and ride use using http://onthemap.ces.census.gov/. The predominant direction of travel should be for trips heading 10 miles or more. Research suggests that 50% of demand will come from 2.5 mile radius of the park and ride lot location. Find the predominant direction of travel based on the community most represented in a 2.5 mile radius of your park and ride lot location (usually the host community).</p>	<p>This example uses the following parameters for its analysis. Keene is identified as a “county subdivision” and then the analysis chooses a place of “work” analysis that shows “destination/direction.” All other default settings remain intact. In this example, the predominant direction of travel for Keene residents going to work 10 miles or more is East.</p>	

<p>3. Using ArcGIS, go to the park and ride location and add the “Park and Ride Market Area” shape file to your project, and then position the shape file so the parabola is pointing towards the predominant location of travel and the park and ride lot is set in the crosshairs of the parabola. Save the polygon as a new file showing the orientation that you chose.</p>	<p>The parabolic polygon is set by rotating the point eastward. The parabola is positioned so that the yellow crosshatch area in the polygon is positioned directly over the roundabout area identified earlier. This shape represents the market area of potential users of a park and ride lot heading eastward.</p>																																																																													
<p>4. For the community that was identified as encompassing most of the 2.5 mi radius area around the park and ride lot location, identify the carpooling rate for that area, as well as the proportion of carpooling rides that are 2, 3 or 4+ people carpooling. Use the Census’ American Fact Finder as your data extraction tool and then use the most recent American Community Survey data 5-year estimate as your dataset (dataset S0801).</p>	<p>In this example, we determine that Keene is the area that represents most of the park and ride market area and then write down the following carpool information. The carpooling rate is 8.4% or 970 people. Among carpoolers, we determine that 82% ride in 2-person carpools, 12% are 3-person carpools and the remaining 6% are 4+ person carpools.</p>	<div><div>S0801 COMMUTING CHARACTERISTICS BY SEX 2007-2011 American Community Survey 5</div><div>Table View</div><div>Actions: Modify Table Bookmark Print</div><div>Although the American Community Survey (ACS) produces population, demographic, and socioeconomic data for the nation, states, and counties, it does not produce data for individual cities or towns. The data shown here are for the state of New Hampshire.</div><table><thead><tr><th>Subject</th><th>Estimate</th><th>Total</th><th>Margin</th></tr></thead><tbody><tr><td>Workers 16 years and over</td><td>11,549</td><td></td><td></td></tr><tr><td>MEANS OF TRANSPORTATION TO WORK</td><td></td><td></td><td></td></tr><tr><td>Car, truck, or van</td><td>80.0%</td><td></td><td></td></tr><tr><td> Carpooled</td><td>8.4%</td><td></td><td></td></tr><tr><td> In 2-person carpool</td><td>6.9%</td><td></td><td></td></tr><tr><td> In 3-person carpool</td><td>1.0%</td><td></td><td></td></tr><tr><td> In 4-or-more person carpool</td><td>0.5%</td><td></td><td></td></tr><tr><td> Does not car, truck, or van</td><td>1.0%</td><td></td><td></td></tr><tr><td>Public transportation (excluding taxicab)</td><td>0.2%</td><td></td><td></td></tr><tr><td>Walked</td><td>12.7%</td><td></td><td></td></tr><tr><td>Bicycle</td><td>1.8%</td><td></td><td></td></tr><tr><td>Taxicab, motorcycle, or other means</td><td>0.6%</td><td></td><td></td></tr><tr><td>Worked at home</td><td>4.7%</td><td></td><td></td></tr><tr><td>PLACE OF WORK</td><td></td><td></td><td></td></tr><tr><td>Worked in state of residence</td><td>93.4%</td><td></td><td></td></tr><tr><td>Worked in county of residence</td><td>88.9%</td><td></td><td></td></tr><tr><td>Worked outside county of residence</td><td>4.5%</td><td></td><td></td></tr><tr><td>Worked outside state of residence</td><td>6.6%</td><td></td><td></td></tr></tbody></table></div>	Subject	Estimate	Total	Margin	Workers 16 years and over	11,549			MEANS OF TRANSPORTATION TO WORK				Car, truck, or van	80.0%			Carpooled	8.4%			In 2-person carpool	6.9%			In 3-person carpool	1.0%			In 4-or-more person carpool	0.5%			Does not car, truck, or van	1.0%			Public transportation (excluding taxicab)	0.2%			Walked	12.7%			Bicycle	1.8%			Taxicab, motorcycle, or other means	0.6%			Worked at home	4.7%			PLACE OF WORK				Worked in state of residence	93.4%			Worked in county of residence	88.9%			Worked outside county of residence	4.5%			Worked outside state of residence	6.6%		
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<p>5. Import the “park and ride market area” parabolic shapefile that you edited into the on the map tool by importing its .shp, .shx and .prj files. You will select import .SHP on the main page of the on the map website.</p>	<p>The Park and Ride Market area parabolic polygon that was positioned and then saved is imported into the on the map tool.</p>	<div><div>OnTheMap</div><div>Start Base Map Selection</div><div>Save Load Feedback Previous Edit Help</div><div>Welcome to OnTheMap!</div><div>Start an analysis by using one of the tools below (Search, Import Geography, or Load .OTM file). Hover over the Help icons located throughout the application to see Help tips for using specific functionality. Sections in the control panel can be collapsed or opened by clicking the section title.</div><div>Read New Data Notice (6/6/2013)</div><div>Search <input type="text"/></div><div>Search All Names</div><div>Import Geography</div><div>Import from KML</div><div>Import from SHP</div><div>Import from GPS</div><div>Load .OTM File</div><div>Click the "Load" button below to load a .OTM file.</div><div>Load</div><div>Select Shapes from a Shapefile</div><div>A PRJ file or a projection are required to use a shapefile with OnTheMap. The projection can be any valid EPSG Code, for example 26915.</div><div>SHP file: Y:\DATA\JB\ParkRide</div><div>SHX file</div><div>PRJ file</div><div>or</div><div>EPSG: 26915</div><div>Cancel</div></div>																																																																												

<p>6. Click on “Select All Polygons” and then click on “Continue with Selected Features”</p>		 <p>The screenshot shows the OnTheMap web application interface. In the left-hand menu, the 'Select All Polygons' button is circled in red. Below it, the 'Continue with Selected Features' button is also circled in red. The main map area shows a map of the United States with a small area highlighted in the upper left.</p>
<p>7. Click on “Confirm Selection” and then click on “Perform Analysis on Selection Area.”</p>	<p>Note the parabolic shape shown in the upper left hand side of the screen.</p>	 <p>The screenshot shows the OnTheMap web application interface. In the left-hand menu, the 'Confirm Selection' button is circled in red. The main map area shows a map of the United States with a small area highlighted in the upper left.</p>
<p>8. Select “Home”. This captures the workers that reside in the parabolic polygon area. Then select “Destination/Direction”. This will capture the destinations and directions that these residents commute to reach their work destinations. Click on “Go”.</p>		 <p>The screenshot shows the OnTheMap web application interface. In the left-hand menu, the 'Destination/Direction' button is circled in red. The main map area shows a map of the United States with a small area highlighted in the upper left.</p>
<p>9. Make sure that the destination/direction results are consistent with what you thought was your predominant direction of travel for trips 10 miles or greater. Then zoom in on your market area.</p>	<p>In this example, the market area is similar to Keene as a whole in that the predominant direction of travel for trips of 10 miles or more is towards the east.</p>	 <p>The screenshot shows the OnTheMap web application interface. In the left-hand menu, the 'Go' button is circled in red. The main map area shows a map of the United States with a small area highlighted in the upper left. A chart titled 'Jobs by Distance' is visible on the right side of the screen, showing a distribution of jobs by distance from the selected area.</p>

<p>10. Click on “Detailed Report” on the left hand side of the screen and download an excel sheet of your results. Note the number of people heading in your predominant direction of travel for 10 miles or more. If there are other arterials heading in other directions from this location 10 miles or more, note the number of people heading in the other directions of travel.</p>	<p>The arterial that we are focusing on for this analysis are Route 101 and Route 9. Both head in an easterly direction. Route 101 carries traffic towards Manchester to the east and Nashua to the southeast. Route 9 carries traffic to Concord in the northeast and Manchester to the east. Based on this information, we decide to make the predominant travel direction E, NE and SE and get a total of 3,281 workers. The total number of workers heading 10 or more miles for the entire market area equals 5,344 workers.</p>	<table><tr><th colspan="3">Distance/Direction Report - Home Census Block to Work Center</th></tr><tr><th colspan="3">2011</th></tr><tr><th></th><th>Count</th><th>Share</th></tr><tr><td>Job Counts in Work Blocks by Distance</td><td></td><td></td></tr><tr><td>Total Primary Jobs</td><td>12,671</td><td>100.0%</td></tr><tr><td>Less than 10 miles</td><td>7,327</td><td>57.8%</td></tr><tr><td>10 to 24 miles</td><td>1,722</td><td>13.6%</td></tr><tr><td>25 to 50 miles</td><td>1,902</td><td>15.0%</td></tr><tr><td>Greater than 50 miles</td><td>1,720</td><td>13.6%</td></tr><tr><td>Job Counts in Work Blocks to the North</td><td></td><td></td></tr><tr><td colspan="3">2011</td></tr><tr><td></td><td>Count</td><td>Share</td></tr><tr><td>Total Primary Jobs</td><td>1,747</td><td>100.0%</td></tr><tr><td>Less than 10 miles</td><td>716</td><td>41.0%</td></tr><tr><td>10 to 24 miles</td><td>149</td><td>8.5%</td></tr><tr><td>25 to 50 miles</td><td>343</td><td>19.6%</td></tr><tr><td>Greater than 50 miles</td><td>539</td><td>30.9%</td></tr><tr><td>Job Counts in Work Blocks to the North</td><td></td><td></td></tr><tr><td colspan="3">2011</td></tr><tr><td></td><td>Count</td><td>Share</td></tr><tr><td>Total Primary Jobs</td><td>1,347</td><td>100.0%</td></tr><tr><td>Less than 10 miles</td><td>639</td><td>47.4%</td></tr><tr><td>10 to 24 miles</td><td>45</td><td>3.3%</td></tr><tr><td>25 to 50 miles</td><td>362</td><td>26.1%</td></tr><tr><td>Greater than 50 miles</td><td>311</td><td>23.1%</td></tr><tr><td>Job Counts in Work Blocks to the East</td><td></td><td></td></tr><tr><td colspan="3">2011</td></tr><tr><td></td><td>Count</td><td>Share</td></tr><tr><td>Total Primary Jobs</td><td>3,314</td><td>100.0%</td></tr><tr><td>Less than 10 miles</td><td>1,060</td><td>32.0%</td></tr></table>	Distance/Direction Report - Home Census Block to Work Center			2011				Count	Share	Job Counts in Work Blocks by Distance			Total Primary Jobs	12,671	100.0%	Less than 10 miles	7,327	57.8%	10 to 24 miles	1,722	13.6%	25 to 50 miles	1,902	15.0%	Greater than 50 miles	1,720	13.6%	Job Counts in Work Blocks to the North			2011				Count	Share	Total Primary Jobs	1,747	100.0%	Less than 10 miles	716	41.0%	10 to 24 miles	149	8.5%	25 to 50 miles	343	19.6%	Greater than 50 miles	539	30.9%	Job Counts in Work Blocks to the North			2011				Count	Share	Total Primary Jobs	1,347	100.0%	Less than 10 miles	639	47.4%	10 to 24 miles	45	3.3%	25 to 50 miles	362	26.1%	Greater than 50 miles	311	23.1%	Job Counts in Work Blocks to the East			2011				Count	Share	Total Primary Jobs	3,314	100.0%	Less than 10 miles	1,060	32.0%
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<p>11. Multiply the two results in step 10 by the overall carpooling rate determined in step 4. The new numbers will result in the number of workers that you can expect to use a park and ride lot because they carpool. If there was transit service at the park and ride lot, you could also apply the rate of transit riders.</p>	<p>The carpooling rate for Keene was 8.4%. When we multiply the total workers heading E, W and SE (3,281) x the carpooling rate (8.4%) it equals 276 workers. When we multiply the total workers heading in all directions (5,344) x the carpooling rate (8.4%) it equals 449 workers.</p>																																																																																											
<p>12. We estimate that one in four carpoolers will use a park and ride lot. Three out of four carpoolers will park at their carpooling partner’s house. Multiply the two figures generated in step 11 by .25. This gives you an estimated rate of available carpoolers using the park and ride lot.</p>	<p>When the numbers calculated in step 11 are each multiplied by .25 the result is as follows.</p> <p>The total number of workers you can expect to use the park and ride lot heading E, NE or SE equals 69.</p> <p>The total number of workers you can expect to use the park and ride lot heading in any direction equals 112.</p>																																																																																											

<p>13. Now multiply the two results from step 12 by the 2, 3 and 4 person carpooling rates identified in step 4. This step accounts for the mixture of carpooling rides that you might expect for your park and ride lot.</p>	<p>For workers heading E, NE or SE the results are as follows: 2-person carpool = 57 3-person carpool = 8 4+ person carpool = 4</p> <p>For workers heading in any direction the results are as follows: 2-person carpool = 92 3-person carpool = 13 4+ person carpool = 7</p>
<p>14. Once you know the mix of carpools (2-person, 3-person and 4+ person) you must determine the number of cars that will actually park in the park and ride lot. At least one member of each carpool type will not park at the lot. To calculate this multiply the 2 person carpooling results above x .5, the 3 person carpooling results by .66 and the 4+ person carpooling results by .75.</p>	<p>For workers heading E, NE or SE the results are as follows: 2-person carpool = 29 3-person carpool = 5 4+ person carpool = 3</p> <p>For workers heading in any direction the results are as follows: 2-person carpool = 46 3-person carpool = 9 4+ person carpool = 5</p>
<p>15. Add the total results for your predominant travel direction and for all directions. These are the estimated number of spaces you will need for your park and ride lot. Add a contingent factor depending on expected growth.</p>	<p>For workers heading E, NE or SE the result is a 37 space park and ride lot.</p> <p>For workers heading in all directions the result is a park and ride lot with 60 spaces. Because access at the lot will likely promote travel in all directions, we choose the 60 space figure.</p> <p>In this instance we decide we are designing the park and ride for a 20 year period. We know that Keene grew 3.5% over the last ten years. Taking this information into determine that a 65 to 70 space lot should sufficient with all things being equal (carpooling rates don't change).</p>

Tool 13: Ranking Site Alternatives

The following tool provides an opportunity to compare park and ride locations to each other and rank or prioritize them. There are 11 criterion identified here. Others can be added at your discretion.

Category	Criterion	Max. Points	Your Points	The table to the left calculates scores for an individual park and ride, therefore helping you rank or prioritize potential park and rides based on criteria in four categories: potential demand, location, site availability/feasibility, and community support. A fifty (50) point scoring system has been established in the first table below, which allots a maximum of 20 points for potential demand, 10 points for location, 10 points for site availability/feasibility, and 10 points for community support. The values used for the criteria can be adjusted using this tool, however a default value system is provided.	
Potential Demand	Existing AADT	6	0		
	AADT Growth Trend	6	0		
	Transit	6	0		
	Pedestrian/Cyclist	2	0		
	Potential Demand Total	20			
Location	Proximity to Activity Center	4	0		
	Interstate/Arterial Access	3	0		
	Congestion	3	0		
	Location Total	10			
Site Availability/ Feasibility	Site Identification	5	0		
	Land Availability	5	0		
	Site Availability/ Feasibility Total	10			
Community Support	Master Plan Support	5	0		
	Other Local Support	5	0		
	Community Support Total	10			
		50	46		
Average Annual Daily Traffic		Score	Your Score	The Average Annual Daily Traffic of roadways adjacent to potential park and rides may vary greatly. How many vehicles on average are passing by your proposed facility? If no volume data is available, contact your RPC to determine the traffic volume. The higher the traffic, the better your chances of attracting park and ride users.	
Less than 5,000		1			
5,000-9,999		2			
10,000-14,999		3			
15,000-19,999		4			
20,000-24,999		5			
Over 25,000		6			

			In addition to existing traffic volumes, it is important to consider the traffic growth at a potential park and ride location. Typically there is data available from nearby roads that will provide 10 years of data. This tool's default recommendation is to rank locations in intervals of 10% over a 10 year period.
AADT Growth Since 1995	Score	Your Score	
Less than 10%	1		
10-19%	2		
20%-29%	3		
30%-39%	4		
40%-49%	5		
Over 50%	6		
			The availability of transit is an important factor in determining potential demand at a park and ride. Up to 6 points may be awarded for transit availability. Locations that would be served by both municipal and intercity transit services will receive the maximum of 6 points. Locations that are not currently served by transit, but may be in the long-term (more than 10- years) will receive the minimum of 1 point. For the purposes of consistency short-term means less than 5 years, medium-term means between 5 and 10 years, long-term means more than 10 years.
Transit Availability	Score	Your Score	
Potential for future transit service in the long-term	1		
Potential for future transit service in the medium term	2		
Potential for future transit service in the short term	3		
Served by low frequency municipal or intercity transit	4		
Served by high-frequency municipal or intercity transit	5		
Served by existing municipal and intercity transit	6		
			Pedestrian and cyclist accessibility to potential park and ride locations is also an important consideration. Up to 2 points may be awarded for locations that currently have pedestrian/cyclist connections. Pedestrian connections may include sidewalks, while cyclist connections may include bicycle paths or on road regional bicycle routes
Pedestrian/Cyclist Connections	Score	Your Score	
No Connections are available	0		
Connections exist or will be available in short term	1		
Connections exist and facility will have bicycle storage facility	2		Park and rides that are located within activity centers provide a central location for commuters to access while supporting the municipal economy. Activity centers may include village centers or other shopping/employment centers.
Proximity to Activity/Village Center	Score	Your Score	
Within 3 Miles of Activity Center	1		
Within 2 Miles of Activity Center	2		
Within 1 Mile of Activity Center	3		
In Activity Center	4		

Interstate/Arterial Access	Score	Your Score	Park and rides should be located in close proximity to an interstate or arterial road for easy, convenient access. Provide a score for your park and ride.
Within 2 miles of an interstate exit or principal arterial	1		
Within 1 mile of an interstate exit or principal arterial	2		
At an interstate exit or on an arterial	3		
Congestion	Score	Your Score	While park and rides help to reduce single-occupant vehicle use in congested areas, they should be located in areas that are easy to access. Congestion in the immediate vicinity of a potential park and ride may discourage potential users. Thus, high congestion areas (LOS E & F) will be awarded the minimum of 1 point, while low congestion areas (LOS A & B) will be awarded the maximum of 3 points.
High Congestion – LOS E or F	1		
Medium Congestion – LOS C or D	2		
Low Congestion – LOS A or B	3		
Site Identification	Score	Your Score	Up to 5 points may be awarded if a site (a property or parcel) has already been identified for a potential park and ride location. No points will be awarded if a specific site has not been identified but a target area has been identified.
Potential site has not been identified	0		
Potential site has been identified	5		
Land Availability	Score	Your Score	An important factor in determining the potential cost of a park and ride project is the availability of land at a potential site. If the State owns land around a potential site, the cost of the project will be significantly lower, and the project more feasible to construct. Up to 5 points may be awarded for land availability.
All land will need to be purchased	1		
Some land will need to be purchased	2		
Some land will need to be purchased, and the site has potential for expansion.	3		
No land will need to be purchased	4		
No land will need to be purchased, and the site has potential for expansion	5		
Master Plan Support	Score	Your Score	A maximum of 5 points may be awarded for project-specific Master Plan support. If a community's Master Plan is silent about park and rides, one point will be awarded. If a community's Master Plan rejects park and rides, no points will be awarded.
Master Plan is silent about park and rides	1		
Master Plan supports park and rides	3		
Master Plan supports specific park and ride project	5		

Other Local Support	Score	Your Score	Beyond a community's Master Plan, there are a number of other means of municipal support for a specific park and ride project. A letter of support from a community, a recommendation in a Corridor Study, or documented support from local not-for-profit advocacy groups may constitute "other" local support. Up to 5 points may be awarded for other local support.
No Other Support is Documented	0		
Support from Advocacy Group or Study Recommendation	3		
Letter of Support from Local Government	5		

Tool 14: Sample Joint Use Agreement

File

OUR LADY OF LOURDES/ST. JOSEPH'S CATHOLIC COMMUNITIES
20 River Road
Pittsfield, New Hampshire 03263
Tel. 803-435-6242

Rev. George Majka, Pastor

January 8, 1997

Cynthia L. Brown
Right-of-Way Agent
State of NH
Department of Transportation
1 Hazen Drive PO Box 483
Concord, NH 03302-0483

DEPT. OF TRANSPORTATION
RIGHT-OF-WAY
JAN 10 1997
RECEIVED

Dear Ms. Brown:

Rental for Park and Ride at St. Joseph's Church, Northwood, New Hampshire
for the period January 1, 1997 through December 31, 1997. \$200.00

Please make check payable to St. Joseph's Church and forward to me at the
above address.

Thank you.

Sincerely,
Rev. George Majka
Rev. George Majka
Pastor

*sent to District 6
1/15/97*

LEASE

THIS LEASE, made this 1st day of January, 1997, by and between The Roman Catholic Bishop of Manchester, Corporation, Sole, of P.O. Box 310, Manchester, County of Hillsborough, State of New Hampshire, LESSOR, and the State of New Hampshire Department of Transportation, Leon S. Kenison Commissioner, P.O. Box 483, Concord, New Hampshire 03302-0483, LESSEE.

WITNESSETH THAT for and in consideration of the rents herein reserved and of the covenants and agreements herein contained, the LESSOR does hereby demise and lease unto the LESSEE certain property in the Town of Northwood, County of Rockingham, State of New Hampshire, more particularly described as follows:

A portion of the parking lot located at the Easterly corner of Saint Joseph's Catholic Church accommodating approximately ten (10) vehicles.

Said property being a portion of the premises conveyed to said LESSOR by deed dated August 17, 1954, and recorded in the Rockingham County Registry of Deeds, book 1326, Page 94.

1. The LESSEE agrees to pay to the LESSOR as annual rent for said premises the amount of two hundred dollars (\$200.00), due on the 1st day of January 1997.
2. The LESSEE does hereby agree that said premises shall be used only as a motor vehicle parking lot for the benefit of the public at large, including persons and vehicles visiting LESSOR'S property.
3. The LESSEE shall, at the expiration of the term herein specified, deliver up to the LESSOR, his heirs or assigns, the said premises and all improvements thereto, save such personal property as signs and electrical lighting devises, in good and substantial repair and condition.

4. The term of this lease shall be for one (1) year from January 1, 1997 to December 31, 1997.

5. The LESSEE agrees to indemnify and save harmless the LESSOR from and against any suit actions or claims of loss or expense arising out of the LESSEE'S use of the LESSOR'S property for carpool parking.

6. The LESSOR shall maintain the said premises in good condition and shall be responsible for the removal of snow and ice therefrom.

7. The LESSEE shall and may peacefully and quietly have, hold, and enjoy the said premises for the term aforesaid.

8. If the LESSEE shall be desirous of taking a renewal lease of the said premises for the further term of one (1) year from the expiration of the term herein specified, and shall give to the LESSOR, his heirs or assigns, one (1) months advance notice thereof in writing, the LESSOR, his heirs and assigns, will forthwith execute and deliver to the LESSEE a renewal lease of the same premises for the further term of one (1) year, subject to the same covenants and agreements as herein contained.

IN WITNESS WHEREOF the parties hereunto set their hands the day and year first above written.

WITNESS

Therese J. Riel

Robert L. Brown

NH DEPARTMENT OF TRANSPORTATION

By: Leon S. Kenison
Leon S. Kenison
Commissioner

By: Rev. George Majka
Saint Joseph's Catholic Church
Administrator

Tool 15: Transit, Bicyclist, and Pedestrian Considerations

We interviewed stakeholders that represent transit agencies and bicycle/pedestrian advocacy groups. The purpose was to get more details on how to accommodate all modes that could access a park and ride.

Pedestrian and Bicyclist Considerations:

- Provide easy access for pedestrians and ensure design meets current Americans with Disabilities Act (ADA) Standards and access to bicycle routes
- Pedestrian and bicycle paths should be separate from automobile traffic paths whenever possible
- Signage and pavement markings should be provided to assist movement, including signs directing users to where bicycle storage or parking is located, as well as where bike lanes or routes are designated
- Adequate illumination, especially at pick-up/drop off areas (but consider the context, e.g. if the facility in a residential area)
- Adequate amenities like bicycle racks, lockers, designated parking spaces (for bicycles and motorcycles), benches and shelters, but not so many that end up obstructing site and sight distances
- Adequate signage on and around surrounding streets to help travelers better identify and access location and site

Transit Considerations:

- Turning radii and the design of adequate curb returns
- Acceleration capabilities of transit vehicle and maximum negotiable grades
- Provision of adequate clear sight distances at intersections
- Transit access should be separated from general automobile access
- Appropriate driveway and roadway widths
- Transit layover space (if needed)

Design Guidelines:

AASHTO has developed guidelines and best practices²⁵ that the project designer should consult when designing the facility. In addition, the Washington Metropolitan Area Transit Authority developed site design standards and park and ride layouts that can be consulted for things like bus loop radii, bicycle lockers and the like.²⁶

²⁵ Guide for Park and Ride Facilities. AASHTO, Washington, 2004.

²⁶ Station Site and Access Planning Manual. Washington Metropolitan Area Transit Authority, Washington, 2008.

Ref. No.	Facility	Standard
2.1.1	Pedestrian Walkways	Width varies according to procedures described in Appendix D. The minimum width for walkways is 6'-0" plus an additional 1'-6" buffer from building edges or street curbs.
2.1.1 2.5.1-3 4.1.3	Pedestrian Waiting Areas at Bus Platforms	The minimum unobstructed walkway widths along bus platforms are as indicated in Table 2-1 and as shown in Figure 2-4. For bus platforms that share sidewalk space with non-bus passenger traffic, the minimum width must be calculated according to procedures described in Appendix D and with the minimum widths indicated in Table 2-1.
2.6.2 4.1.3	Pedestrian Waiting Areas in Kiss & Ride Drop-Off/Pick-Up Zones	Width varies according to procedures described in Appendix D. The minimum unobstructed sidewalk width is 6'-0" plus an additional 1'-6" buffer from building edges.
2.4.1	Bicycle Path	8'-0"-minimum width
2.4.2	Bicycle Lockers	3'-2" x 6' with a 6' aisle at either end (2 lockers back to back)
2.3.3	Crosswalks and Curb Cuts	Minimum width same as walkway required at all walkway/road intersections
2.6.2	Sawtooth Bus bays (Standard Bus)	70' length with 6' indent as shown in Figure 2-4
2.5.2	Sawtooth Bus Bays (Articulated Bus)	96' length with 6' indent as shown in Figure 2-4
2.5.1	Tangent Bus Bay (Standard Bus)	15' x 44' + 48' taper at rear of bus bay array and 70' taper at front of bus bay array (Figure 2-3)
2.5.1	Tangent Bus Bay (Articulated Bus)	15' x 66' + 48' taper at rear of bus bay array and 70' taper at front of bus bay array (Figure 2-3)
2.5.1	Bus Lane Widths	15' through lane as shown in Figures 2-3 and 2-4. See Figure 2-5 for turning lane widths.
2.5.2	Bus Storage Bays	Same as tangent bays.
4.1.3	Bus Shelter	Minimum equivalent of one 6'x12' or 6'x24' shelter per bus bay, as directed by WMATA. (Fig. 2-4)
2.5.1	Bus Loop Radii	60' outside radius to curb, 45' centerline radius, 30' inside curb radius (Figures 2-5 and 2-6)
2.8.3	Automobile Turning Radii	23' outside curb radius on access roads, 15' curb radius in parking facilities
2.6.6	Motorcycle Parking Spaces	4' x 8'
2.6.2	Kiss & Ride Curb Side Pick-Up/Drop-Off Lane	Automobile spaces: 8' x 30'; Shuttle Bus spaces: 8' x 25'; Taxi spaces: 8' x 22'
2.6.3	Kiss & Ride Parking Spaces	ADA and Driver-Attended: 9' x 18' (45 degree); Short-Term: 8.5' x 18' (angled or 90 degree)
2.6.5		
2.7	Park & Ride Spaces	8.5' x 18', 24' aisle between rows or jurisdictional requirements, whichever is more stringent
2.8.3	Access Roads - Vertical Clearance	16'-9" minimum
2.8.3	Access Road Lane Width (Single Lane Road)	15' for roads with automobile traffic only; 18' for roads with buses and automobiles.*
2.8.3	Access Road Lane Width (2 or More Lanes)	11' per lane*

*Additional lane widening is required in curved sections per AASHTO design standards - add one foot each side of roadway for curb and gutter section.

Figure 1: Design Guidelines

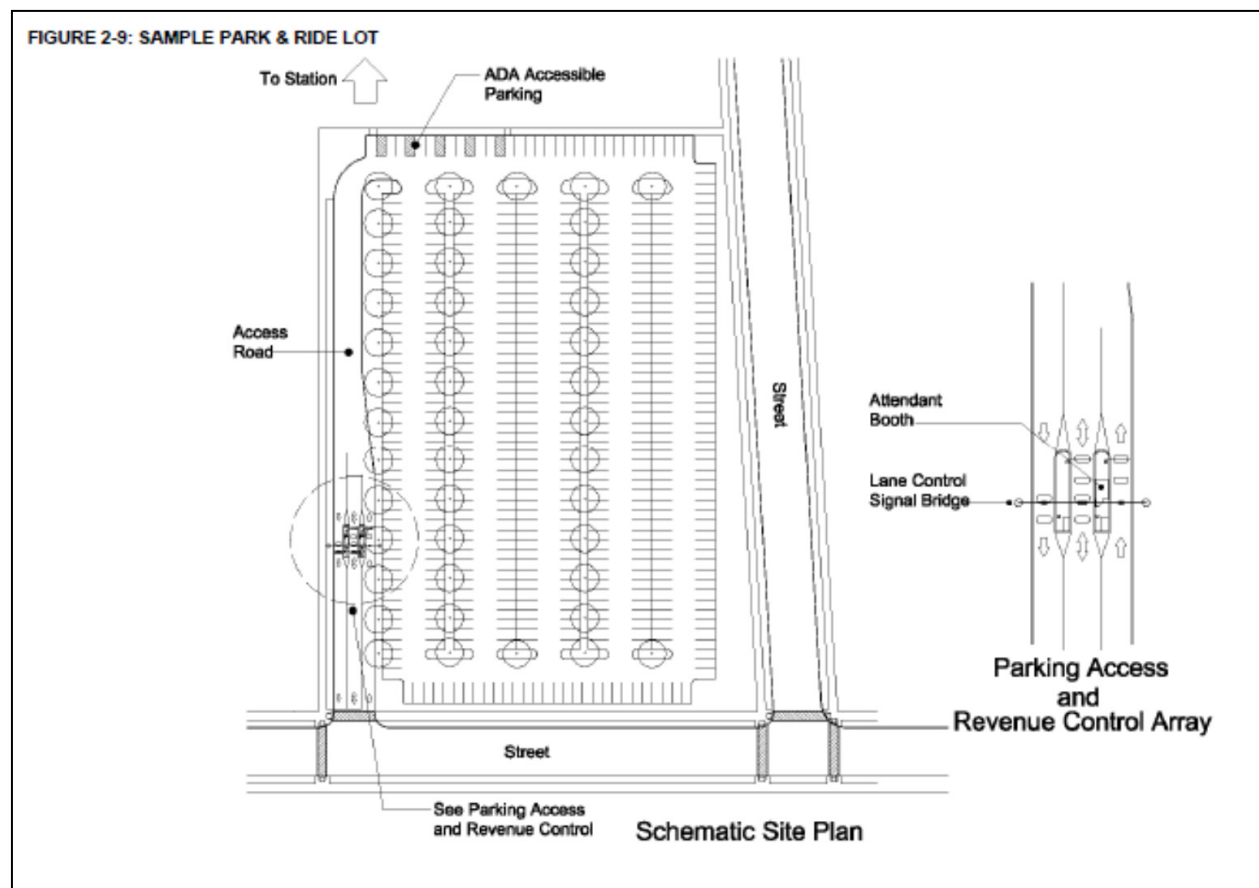


Figure 2: Sample Park and Ride Lot

Additional Transit Operator Suggestions:

The following is also an excerpt of an interview with staff from Cooperative Alliance for Seacoast Transportation (COAST), a local transit provider that currently serves park and rides on their routes:

Our design priorities would include keeping the bus out of the car travel and parking as much as possible. Where geometric limitations prevent a separate travel area, it's best to avoid having the bus have to make tight turns, especially when you consider what snow does to people parking in marked spaces. The Hampton park and ride at 101/95/27 is a perfect example – the travel lane around the lot might be technically wide enough for buses to maneuver, but that's really the least ideal situation. A better approach to that example would be having a separate cul-de-sac perhaps down the road for the bus to turn around and then stop streetside at the park and ride, as mentioned below.

I know one of the things that we deal with is snow and plowing. That may be why NHDOT planners in the past have preferred a basic rectangle and then make the bus loop around the lot. Easy and cheap to maintain and plow.

With bus scheduling in mind, if the park and ride is to be located somewhere that the bus could pick up streetside instead of pulling into the lot, that is sometimes best. It's probably less common at park and rides because they are usually served by limited-stop services like C&J. However, there are instances where the park and ride could be abutting a municipal road; instead of the bus pulling in and looping around the lot, sometimes it's better to construct a turnout for the bus at the street, with good pedestrian access from the lot to the bus stop. That probably works best for small park and rides and/or in urban environments.

It's always best practice to include adequate lighting near the bus stop, as well as places to locate bus shelters (built to the specs!) and schedule/map displays.

Tool 16: Legal Considerations: Land Acquisition and Construction

Land Acquisition:

Like everything, there are liabilities that future owners of park and rides face and this brief section is meant to highlight some during the acquisition process. During the preliminary stages of acquiring a property, one might anticipate possible disputes or claims related to the negotiation process, or land acquisition process. These may include contract disputes (for example, the Purchase and Sale Agreement was violated); conveyancing and title issues (for example, the deed was incorrect or the title is encumbered), issues with abutters and neighbors (for example, they oppose a Park and Ride next door), and issues with regulators (for example, a decision that putting in a parking lot would result in too much impervious cover). It is recommended that you retain a legal professional to assist in the process.

No matter what form of ownership will be used, the arrangement and understandings of the parties must be documented in writing. The basic process for all forms of ownership is negotiation between parties to come to an understanding, documenting the understanding in writing, and consummating the deal. This usually begins with parties talking over the phone, e-mail, and perhaps meetings. Next, the negotiations may advance such that the parties have their lawyers involved and conceptual terms begin to be written up. Next, the parties will agree on written agreements that the lawyers have approved. Finally, the parties will sign the appropriate documents to achieve the form of ownership desired.

Fee Ownership & Easements:

For locations with fee ownership and for easements, the parties will typically enter into a specialized type of contract called a Purchase and Sale Agreement once negotiations have resulted in a mutual understanding between them. The Purchase and Sales Agreement should include the basic terms of the deal, including the price, the time the deal will close (be completed), what property is to be conveyed, the parties, and any circumstances upon which the deal is contingent.

To close (complete) a deal for fee ownership or an easement, a deed is required. A deed is a legal document that describes the property that is being conveyed, identifies the seller and buyer, is signed by the seller, and is recorded at the Registry of Deeds.

Note that some laws impose certain requirements on government entities before they are able to purchase land. For example, municipalities may own real property only for public purposes. See RSA 31:3. Public parking has long been recognized as a public purpose for which a municipality may acquire land. See RSA 231:118 (“If the legislative body of a municipality which has adopted a plan as described shall determine to acquire pursuant to said plan any real property or interest therein, including air rights, necessary for or incidental to the construction, maintenance or operation of public parking facilities, it may proceed to take such real property or interest therein by an exercise of the power of eminent domain in the same manner as provided in this chapter, or it may exercise the power of eminent domain in the manner provided by any other applicable statutory provisions for the exercise thereof”).

Municipalities can “take” ownership in fee through condemnation in certain circumstances. See RSA 31:92 (“Whenever any town cannot obtain by contract, for a reasonable price, any land required for public use, such land may be taken, the damages assessed, and the same remedies and proceedings had as in case of laying out highways by selectmen”). However, the process is complex, costly, full of pitfalls and can create division in a community. So, while it is technically an option, it should not be exercised without much careful consideration in advance.

Ground Lease & Lease:

With respect to a Ground Lease or Lease, the actual lease must be written up according to the understanding that the parties reach through negotiation. The lease is not recorded or otherwise made public. It is a private contract between the parties. However, a document called a Notice of Lease must be written and recorded at the Registry of Deeds if the term of lease is more than 7 years. The lease is a long and complex document. The Notice of Lease is short document that provides the merest of details on the public record, including the parties and their addresses, date of the lease, description of the property, term of the lease, and the date the lease begins and may be renewed or extended.

For a park and ride, the term of a lease should be as long a term as can be achieved. The renter should be allowed to terminate the lease with reasonable notice to the owner, such as one year. The landowner should not have the same option of terminating or shortening the lease term, except perhaps for cause (non-payment of rent, significant damage to the property, etc.). Similarly, the renter should be careful that the rental amount is acceptable and controlled to the maximum extent possible. If the owner insists on a periodic rent adjustment, it might be prudent to tie such potential rental increases to a benchmark standard, such as the Consumer Price Index or inflation rate, to prevent future price gauging.

With respect to a Ground Lease, it must be clear that renter may do everything on and with the land necessary to construct, maintain, and operate the park and ride; use restrictions which could interfere with the park and ride cannot be accepted.

Raw land or an already-built park and ride may be leased by a municipality to an operator of a park and ride. Municipalities are allowed to lease land or improved properties when no longer needed by the municipality for public purposes. Sometimes, the property that is not being used by the municipality will be subject to property tax. Leases and Ground Leases should address whether real estate tax is expected to apply, and if so, what party will pay it. Selectboards are authorized to enter into leases up to one-year long without a vote to ratify the lease. See RSA 41:11-a, I, II. However, anything more than one-year long will need to be ratified by the voters. See RSA 41:11-a, I, III.

During Construction:

These include contractual disputes issues with independent contractors such as the surveyor, engineer, paver, sign painter, etc. There are also many tort issues involved in any construction project such as a worker, neighbor, or onlooker being injured or property being damaged from equipment, blasting, drainage, spills, etc. There could be regulatory issues if permit

requirements, such as dredge or fill in wetlands, are not followed. There could be employment or discrimination claims involving the independent contractors. It is recommended that you retain a legal professional to assist in the process.

Tool 17: Permitting Overview

Generally, what permits and approvals are needed during site development do not depend upon the form of ownership or control of the property. So, a privately-owned and operated park and ride would need the same permits and approvals as a privately-owned property leased to a municipality would need. The differences in form of ownership may affect the name under which the Application is submitted, and the Permit issued, but would not substantially affect the substance of the application or of the permit itself. As with other areas, the laws provide special treatment for governments, which are discussed in this section.

Please note that all laws, municipal, state, and federal, change from year to year. So, it is prudent to always make sure that you are using the most recent version of laws.

It is also important to understand that any given property may already be subject to existing permits and approvals. Before committing to developing or operating a park and ride facility, the developer ought to identify each permit or approval that applies to the property, what the process is to transfer them to a new owner, and then make sure the process and requirements are followed.

Permitting – Municipal Laws:

Municipalities with zoning have divided their boundaries into different districts and designated what uses may be made in each district. In its “table of uses” in its zoning ordinance, the uses allowed by right in any given district will be listed. Permitted by right means that no special permission is needed from the town before the use is made of a property. Ideally, park and rides would be located where they are permitted by right.

When a municipality wants to allow a certain use, but wants to exercise some control over the use, it may designate the use as allowed only with special permission. The three types of special permissions that municipalities typically require are conditional use permits, variances, and special exceptions. The zoning ordinance should describe what is required for each of these. If a park and ride is allowed only by requesting and obtaining one of these types of special permission, the exact standards should be evaluated carefully. Generally, municipalities truly scrutinize proposals for special permission; they do not merely rubber stamp them.

Other municipal laws may require Site Plan Approval, Subdivision Approval, or other approvals. Whether for a special permission, or for those approvals, the process is similar. Typically, it will require submitting a formal application, one or more public hearings, and then a decision.

Municipalities have many laws that may apply to a park and ride, including laws about driveways, accessways, signs, limits on impervious cover, special protection districts, and many more. Sometimes municipalities have unique laws that are unusual. It is important to have someone in the development of a park and ride project check the municipal laws to see what they will require.

State law mandates that land owned or occupied by, or proposed to be owned or occupied by, any level of government (including counties, towns, school districts, or their agents), "... for any public purpose which is statutorily or traditionally governmental in nature ..." shall be essentially exempted from local land use controls.²⁷ See RSA 674:54. The proponent of the governmental use (such as the park and ride) is directed to provide a detailed notification, including plans and construction schedule to the municipality (and Planning Board) in the jurisdiction in which it is proposed to be sited, at least 60 days before construction is proposed to commence. The municipality or Planning Board may, and probably will, hold a public hearing on the proposal.

Note that although it is undoubtedly good practice to design such a facility as closely as possible to conformity with any local land use requirements as would apply if this were a private applicant for a commercial use, the municipality or Planning Board may not deny approval, and may issue only "nonbinding written comments" on whether the proposal does or does not comply with the normally applicable local land use regulations. While this exemption is a huge benefit, it is undoubtedly good practice to design a park and ride that meets or exceeds the otherwise applicable land use requirements enacted to protect abutters. Such requirements as setbacks, screening, and downward directed lighting, should be voluntarily complied with, if not exceeded, if the park and ride wants to be a good neighbor, and its proponents want the respect and support of the Planning Board and community.

While government-owned property is exempt from some municipal laws, government owners must still comply with municipal building codes, and other municipal requirements that relate to life and safety protection. It is neither legal nor prudent for any level of government to insist that life-safety or building code standards be met in structures constructed by its citizens, but to exempt itself from meeting those same health and safety standards.

Permitting – State Laws:

In addition to municipal laws, many state laws may apply to the construction, operation, and closure of a park and ride. The following State Permits are probably the most likely to be required. Please note, however, that other state laws may apply and have additional requirements.

Alteration of Terrain Permit:

Required by RSA 485-A:17 and implemented by N.H. Administrative Code (Regulations) Env-Wq 1500.

This permit is required before one can disturb the surface of the ground, as by grading or paving, of any area over 100,000 square feet. The threshold is reduced if any portion of the area to be disturbed is on a slope of 25% or greater (not an ideal location for parking), or within 250 feet of surface waters.

²⁷ It is nearly certain that the provision and regulation of parking would, if challenged, be deemed a traditional governmental land use, as the creation and regulation of roads, and the provision and regulation of parking along roads is undeniably a traditional governmental function, as would be attempts to increase public safety, protect the environment, and preserve our roads by providing Park and Ride facilities.

Wetlands Permit:

A Wetlands Permit is also known as a Dredge and Fill Permit. Required by RSA 482-A and implemented by N.H. Administrative Code Env Wt 100 through 900.

Shoreland Permit:

Required by RSA 483-B and implemented by N.H. Administrative Code Env Wq 1400.

This permit is required when certain development occurs within 250 feet of most bodies of surface water (lake, pond over 10 acres, stream, river).

State Subdivision Permit:

Required by RSA 485-A:29 to 44 and implemented by N.H. Administrative Code Env Wq. 1000.

State Subdivision permits are required when a subdivision of land may result in the creation of a lot or lots that may discharge septage. The purpose is to assure that each subdivided lot has adequate septage disposal capacity. If a park and ride were to include restrooms, this law may apply.

Groundwater:

Various groundwater permits may be required if there has been any groundwater contamination previously in the area.

Permitting – Federal Laws:

Several federal laws may apply to a park and ride. The federal Environmental Protection Agency (EPA) regulates stormwater pursuant to the Clean Water Act. In particular, the National Pollutant Discharge Elimination System (NPDES, which is pronounced like nip-deez) program requires permits for certain circumstances. There are several different types of NPDES permits. A Multi-Sector General Permit (MSGP) or a Construction General Permit (CGP) are two types of NPDES permits that may be required. CGPs are required when construction disturbs one acre of land or more. Close coordination with the regulator will be of great assistance to make sure that a park and ride complies with NPDES permitting.

Tool 18: Amenities and Design Elements

Based on amenities at existing park and ride facilities²⁸, the following table was developed to provide guidance on which amenities and design elements could be included in future facilities.

Amenities/Design Elements							
		Signage	Paved	Public Transit/Shelters	Lights	Security Cameras	Bike Racks/Lockers
# of Spaces	< 25	Mandatory for traffic control, not likely for commuter information	Paving preferred at initial construction, but could start with gravel	Not large enough to hand bus traffic	Expected, if overnight parking overnight permitted	Not likely	Not likely
	26-50	Mandatory for traffic control, not likely for commuter information	Paving preferred at initial construction, but could start with gravel	Not large enough to hand bus traffic	Expected, if overnight parking overnight permitted	Not likely	Not likely
	51-100	Mandatory for traffic control, preferred for commuter information	Paving mandatory at initial construction	Possible if served by vans and smaller-sized buses	Expected, if overnight parking overnight permitted	Depends on location	Depends on location
	101-250	Mandatory for traffic control, mandatory for commuter information	Paving mandatory at initial construction	Preferred	Mandatory	Mandatory	Preferred
	250 +	Mandatory for traffic control, mandatory for commuter information	Paving mandatory at initial construction	Preferred	Mandatory	Mandatory	Preferred

²⁸ Park & Ride Locations. New Hampshire Department of Transportation, Concord, New Hampshire, 2013.

Tool 19: Belmont Park and Ride Case Study

The Town of Belmont developed the State's first municipally-owned and maintained park and ride lot. The following is an excerpt from an interview with the Town Planner as a way to illustrate how municipalities could develop park and rides.



Figure 3: Belmont Park and Ride

- The property was the site of a former filling station.
- The property was abandoned and found to have some contamination from the underground tanks.
- In 2001, there was an agreement between the State and the Town that the Town would accept a tax deed for the property and the State would provide funds for the cleanup through the Oil Remediation and Compliance Bureau.
- The cleanup was completed including the installation of monitoring wells.
- Our 2002 Master Plan identified the need for some sort of shared parking for residents.
- In 2003, the Conservation Commission requested Capital Funds to construct a graveled parking area on the property as an entrance to the Town Forest which abuts the lot. Staff recommended to the Selectmen that a joint effort be put forth to construct the site as a park and ride, also providing parking for people accessing the Town Forest. In addition, the erection of an information sign would give the Town a “presence” on Laconia Road and an additional way in which to provide community information.
- The initial design, construction, sign and lighting costs were estimated at approximately \$27,000. The Selectmen created a capital account for \$23,000 in 2004. The Town’s general engineering fund covered the services of an engineer for the design.
- State funds covered flush mounting the monitoring wells.
- We purchased some used lot lights from a Town in Maine.
- The sign was provided through an Eagle Scout project.
- The lot was initially intended to be gravel. The following year our Public Works Department had it paved as part of a road paving project.
- The Public Works Department mows the grass and plows the lot.

- When I drafted the Rules for the lot, I contacted NHDOT to see what they used. They were enthusiastic about our project, the State being a strong proponent of rideshare. Although they had a few agreements with private landowners for rideshare space on private property, they did not know of any other municipality who had offered a site. We added our site to their rideshare website.
- We've been very pleased with the use of the site and have not had any major problems. Site lighting costs seem to be the heaviest on-going funding burden for us.

Rideshare Ordinance:

The Town also developed a Rideshare Ordinance in 2005 to regulate the use of the facility.

Town of Belmont

Rideshare Ordinance

A. Facility Purpose

The Town of Belmont provides a Rideshare Facility in promotion of the following purposes:

1. provide a centralized, convenient meeting place for use by commuters to park vehicles while participating in carpools or using transit services;
2. promote ridesharing to provide an alternative way for commuters to travel to and from destinations;
3. reduce travel costs, traffic congestion and environmental impacts;
4. provide a secondary access to the adjacent Town Forest.

B. Ordinance Purpose and Authority

This Ordinance is enacted by the Belmont Board of Selectmen under the authority of New Hampshire RSA 41:11 and 41:11-a to regulate the use of the Belmont Rideshare facility for the following purposes:

1. promote the safety and welfare of the municipality and persons using the facility;
2. promote the aesthetic value of the facility as representative of the Town's "presence" on Laconia Road and as a municipal information site;
3. protect the facility from damage and misuse;
4. minimize the fiscal impact on the Town for the maintenance and care of the facility;
5. minimize impact to abutting properties.

C. Operation, Administration and Enforcement

This Ordinance shall be administered by the Town Administrator under the direction of the Board of Selectmen. The Town Administrator shall develop operational and maintenance procedures for the site.

Enforcement of the terms of this Ordinance shall be by the Board of Selectmen. Vehicles removed under the terms of this ordinance shall be removed at the owner's expense.

Violations of this Ordinance are subject to a fine of \$100 per instance, per day.

D. Regional Use

The use of the site is not limited to residents of the community and is open to all commuters for the purposes herein specified.

E. Fees

No fees shall be charged to park at the Rideshare facility.

F. Parking Time Limit

The use of the facility is for short-term commuter parking. Vehicles on site in excess of 72 hours shall be considered abandoned under RSA 262:40-a(II) and are subject to removal under the terms of this Ordinance. Notice of this section shall be posted on site.

G. Approved Vehicles

Due to lot size and available turning radii and maneuvering area, and to reduce pavement damage by heavy vehicles, parking is limited to appropriately registered passenger cars and motorcycles. Bicycles are also allowed. Commercial vehicles are prohibited.

H. Signage

Only signage approved and erected by the Town is allowed. Signage may include site name, site directional, facility rules, Town Forest related signage and general municipal information.

I. Prohibited Uses

The following are prohibited:

1. Loitering
2. Abandoned vehicles
3. Commercial vehicles
4. Littering or dumping
5. Unpermitted signage

J. Liability

The Town of Belmont assumes no liability for injury or damage occurring as a result of the public's use of the facility.

Signed and Approved on: July 5, 2005

Brian Watterson

Brian Watterson, Board of Selectmen, Chairman

Reginald Caldwell

Reginald Caldwell, Board of Selectmen, Vice Chairman

Ronald Cormier, Jr.

Ronald Cormier, Jr., Board of Selectmen

Tool 20: Maintenance and Operations Expense Analysis and Responsibilities

	Parking Spaces	Lighting	Bus Shelter	Bike Rack/Locker	Public Telephone	Public Transit/Facility Operator	2010 Per Space Maintenance Expenses	2010 Per Space Operations Expenses
Londonderry: Exit 5	728	Yes	Yes	Yes	Yes	Yes	\$402	\$53
Dover: Route 16	414	Yes	Yes	Yes	Yes	Yes	\$118	\$65
Portsmouth: Transportation Center	975	Yes	Yes	Yes	Yes	Yes	\$113	\$72
Concord: Exit 14	340	Yes	Yes	Yes	Yes	Yes	\$809	\$207
Salem	476	Yes	Yes	Yes	Yes	Yes	\$374	\$28
Londonderry: Exit 4	452	Yes	Yes	No	Yes	Yes	\$129	\$32

	Parking Spaces	Lighting	Bus Shelter	Bike Rack/Locker	Public Telephone	Public Transit/Facility Operator	2012-13 Total Per Space M&O Expenses
New London	132	Yes	Yes	No	Yes	Yes	\$72
Belmont	42	Yes	No	No	No	No	Not known

Park & Ride Lot Exterior Maintenance Responsibilities for State-Owned Lots

	Lot with a Bus Terminal			No Terminal	
	District or Turnpikes	Traffic	Facility Operator	District or Turnpikes	Traffic
Landscaping (lawns, trees, shrubbery, ground cover, etc maintenance and replacement)			X	X	
Slope Mowing (outside designated areas)	X			X	
Litter pickup & trash removal			X	X	
Pavement markings (parking stripes, etc)		X			X
Pavement resurfacing	X			X	
Plowing & snow removal **			X**	X	
Sanding / Salting			X	X	
Drainage (catch basins & pipe replacement)	X			X	
Curbing (repair / replace)	X			X	
Signage (erecting new)		X			X
Signage (major maintenance, replace worn/damaged signs)		X			X
Signage (winter knockdowns/straightening)			X		X
Security Cameras (repair camera units)		X			X
Septic System Pumping			X	X	
Septic System Repair & Replacement				X	
Enforcement of RSAs (abandoned vehicles, tractor-trailers, etc)			X	X	
Shelters (maintenance, graffiti removal, replacement)				X	
Sidewalks (maintenance)			X	X	
Sidewalks (repair)	X			X	
Water Lines (pre-meter)	X			X	
Water Usage			X		
Parking Lot Lighting (repair & power)	X			X	
Electrical Services (transformer, pre-meter, conduit)	X			X	
Electrical Services (post-meter)	X			X	

Notes:

* District 5 will continue Exit 4 Londonderry parking lot maintenance & BX will clean walkways around terminal.

*Turnpikes will continue Exit 8 Nashua parking lot & BX will clean walkways around terminal.

Rail & Transit facility maintenance funds may be used for major bus terminal repairs. Long-term repair and replacement of building facilities needs to be addressed in the Department's budgeting and assess management.

3/29/2012

Tool 21: Sample Maintenance and Operations Agreement

Below is an example of an agreement for maintenance and operations. It includes the State's P-37 form and a standard agreement NHDOT uses for maintenance and operations at a facility maintained by a transit operator. Operator and cost information are redacted. This example is not perfectly adaptable to a future park and ride arrangement. However, it can serve as a starting point for park and ride projects that include NHDOT and a municipality or transit operator.

Subject: <input type="text"/>		FORM NUMBER P-37 (version 1/09)	
AGREEMENT The State of New Hampshire and the Contractor hereby mutually agree as follows:			
GENERAL PROVISIONS			
I. IDENTIFICATION.			
1.1 State Agency Name <input type="text"/>		1.2 State Agency Address <input type="text"/>	
1.3 Contractor Name <input type="text"/>		1.4 Contractor Address <input type="text"/>	
1.5 Contractor Phone Number <input type="text"/>	1.6 Account Number <input type="text"/>	1.7 Completion Date <input type="text"/>	1.8 Price Limitation <input type="text"/>
1.9 Contracting Officer for State Agency <input type="text"/>		1.10 State Agency Telephone Number <input type="text"/>	
1.11 Contractor Signature <input type="text"/>		1.12 Name and Title of Contractor Signatory <input type="text"/>	
1.13 Acknowledgement: State of <input type="text"/> County of <input type="text"/> On <input type="text"/> , before the undersigned officer, personally appeared the person identified in block 1.12, or satisfactorily proven to be the person whose name is signed in block 1.11, and acknowledged that s/he executed this document in the capacity indicated in block 1.12.			
1.13.1 Signature of Notary Public or Justice of the Peace [Seal]			
1.13.2 Name and Title of Notary or Justice of the Peace <input type="text"/>			
1.14 State Agency Signature <input type="text"/>		1.15 Name and Title of State Agency Signatory <input type="text"/>	
1.16 Approval by the N.H. Department of Administration, Division of Personnel (if applicable) By: _____ Director, On: _____			
1.17 Approval by the Attorney General (Form, Substance and Execution) By: _____ On: _____			
1.18 Approval by the Governor and Executive Council By: _____ On: _____			

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2. EMPLOYMENT OF CONTRACTOR/SERVICES TO BE PERFORMED. The State of New Hampshire, acting through the agency identified in block 1.1 ("State"), engages contractor identified in block 1.3 ("Contractor") to perform, and the Contractor shall perform, the work or sale of goods, or both, identified and more particularly described in the attached EXHIBIT A which is incorporated herein by reference ("Services").

3. EFFECTIVE DATE/COMPLETION OF SERVICES.

3.1 Notwithstanding any provision of this Agreement to the contrary, and subject to the approval of the Governor and Executive Council of the State of New Hampshire, this Agreement, and all obligations of the parties hereunder, shall not become effective until the date the Governor and Executive Council approve this Agreement ("Effective Date").

3.2 If the Contractor commences the Services prior to the Effective Date, all Services performed by the Contractor prior to the Effective Date shall be performed at the sole risk of the Contractor, and in the event that this Agreement does not become effective, the State shall have no liability to the Contractor, including without limitation, any obligation to pay the Contractor for any costs incurred or Services performed. Contractor must complete all Services by the Completion Date specified in block 1.7.

4. CONDITIONAL NATURE OF AGREEMENT.

Notwithstanding any provision of this Agreement to the contrary, all obligations of the State hereunder, including, without limitation, the continuance of payments hereunder, are contingent upon the availability and continued appropriation of funds, and in no event shall the State be liable for any payments hereunder in excess of such available appropriated funds. In the event of a reduction or termination of appropriated funds, the State shall have the right to withhold payment until such funds become available, if ever, and shall have the right to terminate this Agreement immediately upon giving the Contractor notice of such termination. The State shall not be required to transfer funds from any other account to the Account identified in block 1.6 in the event funds in that Account are reduced or unavailable.

5. CONTRACT PRICE/PRICE LIMITATION/ PAYMENT.

5.1 The contract price, method of payment, and terms of payment are identified and more particularly described in EXHIBIT B which is incorporated herein by reference.

5.2 The payment by the State of the contract price shall be the only and the complete reimbursement to the Contractor for all expenses, of whatever nature incurred by the Contractor in the performance hereof, and shall be the only and the complete compensation to the Contractor for the Services. The State shall have no liability to the Contractor other than the contract price.

5.3 The State reserves the right to offset from any amounts otherwise payable to the Contractor under this Agreement those liquidated amounts required or permitted by N.H. RSA 80:7 through RSA 80:7-c or any other provision of law.

5.4 Notwithstanding any provision in this Agreement to the contrary, and notwithstanding unexpected circumstances, in no event shall the total of all payments authorized, or actually made hereunder, exceed the Price Limitation set forth in block 1.8.

6. COMPLIANCE BY CONTRACTOR WITH LAWS AND REGULATIONS/ EQUAL EMPLOYMENT OPPORTUNITY.

6.1 In connection with the performance of the Services, the Contractor shall comply with all statutes, laws, regulations, and orders of federal, state, county or municipal authorities which impose any obligation or duty upon the Contractor, including, but not limited to, civil rights and equal opportunity laws. In addition, the Contractor shall comply with all applicable copyright laws.

6.2 During the term of this Agreement, the Contractor shall not discriminate against employees or applicants for employment because of race, color, religion, creed, age, sex, handicap, sexual orientation, or national origin and will take affirmative action to prevent such discrimination.

6.3 If this Agreement is funded in any part by monies of the United States, the Contractor shall comply with all the provisions of Executive Order No. 11246 ("Equal Employment Opportunity"), as supplemented by the regulations of the United States Department of Labor (41 C.F.R. Part 60), and with any rules, regulations and guidelines as the State of New Hampshire or the United States issue to implement these regulations. The Contractor further agrees to permit the State or United States access to any of the Contractor's books, records and accounts for the purpose of ascertaining compliance with all rules, regulations and orders, and the covenants, terms and conditions of this Agreement.

7. PERSONNEL.

7.1 The Contractor shall at its own expense provide all personnel necessary to perform the Services. The Contractor warrants that all personnel engaged in the Services shall be qualified to perform the Services, and shall be properly licensed and otherwise authorized to do so under all applicable laws.

7.2 Unless otherwise authorized in writing, during the term of this Agreement, and for a period of six (6) months after the Completion Date in block 1.7, the Contractor shall not hire, and shall not permit any subcontractor or other person, firm or corporation with whom it is engaged in a combined effort to perform the Services to hire, any person who is a State employee or official, who is materially involved in the procurement, administration or performance of this Agreement. This provision shall survive termination of this Agreement.

7.3 The Contracting Officer specified in block 1.9, or his or her successor, shall be the State's representative. In the event of any dispute concerning the interpretation of this Agreement, the Contracting Officer's decision shall be final for the State.

8. EVENT OF DEFAULT/REMEDIES.

8.1 Any one or more of the following acts or omissions of the Contractor shall constitute an event of default hereunder ("Event of Default"):

8.1.1 failure to perform the Services satisfactorily or on schedule;

8.1.2 failure to submit any report required hereunder; and/or

8.1.3 failure to perform any other covenant, term or condition of this Agreement.

8.2 Upon the occurrence of any Event of Default, the State may take any one, or more, or all, of the following actions:

8.2.1 give the Contractor a written notice specifying the Event of Default and requiring it to be remedied within, in the absence of a greater or lesser specification of time, thirty (30) days from the date of the notice; and if the Event of Default is not timely remedied, terminate this Agreement, effective two (2) days after giving the Contractor notice of termination;

8.2.2 give the Contractor a written notice specifying the Event of Default and suspending all payments to be made under this Agreement and ordering that the portion of the contract price which would otherwise accrue to the Contractor during the period from the date of such notice until such time as the State determines that the Contractor has cured the Event of Default shall never be paid to the Contractor;

8.2.3 set off against any other obligations the State may owe to the Contractor any damages the State suffers by reason of any Event of Default; and/or

8.2.4 treat the Agreement as breached and pursue any of its remedies at law or in equity, or both.

9. DATA/ACCESS/CONFIDENTIALITY/PRESERVATION.

9.1 As used in this Agreement, the word "data" shall mean all information and things developed or obtained during the performance of, or acquired or developed by reason of, this Agreement, including, but not limited to, all studies, reports, files, formulae, surveys, maps, charts, sound recordings, video recordings, pictorial reproductions, drawings, analyses, graphic representations, computer programs, computer printouts, notes, letters, memoranda, papers, and documents, all whether finished or unfinished.

9.2 All data and any property which has been received from the State or purchased with funds provided for that purpose under this Agreement, shall be the property of the State, and shall be returned to the State upon demand or upon termination of this Agreement for any reason.

9.3 Confidentiality of data shall be governed by N.H. RSA chapter 91-A or other existing law. Disclosure of data requires prior written approval of the State.

10. TERMINATION. In the event of an early termination of this Agreement for any reason other than the completion of the Services, the Contractor shall deliver to the Contracting Officer, not later than fifteen (15) days after the date of termination, a report ("Termination Report") describing in detail all Services performed, and the contract price earned, to and including the date of termination. The form, subject matter, content, and number of copies of the Termination

Report shall be identical to those of any Final Report described in the attached EXHIBIT A.

11. CONTRACTOR'S RELATION TO THE STATE. In the performance of this Agreement the Contractor is in all respects an independent contractor, and is neither an agent nor an employee of the State. Neither the Contractor nor any of its officers, employees, agents or members shall have authority to bind the State or receive any benefits, workers' compensation or other emoluments provided by the State to its employees.

12. ASSIGNMENT/DELEGATION/SUBCONTRACTS.

The Contractor shall not assign, or otherwise transfer any interest in this Agreement without the prior written consent of the N.H. Department of Administrative Services. None of the Services shall be subcontracted by the Contractor without the prior written consent of the State.

13. INDEMNIFICATION. The Contractor shall defend, indemnify and hold harmless the State, its officers and employees, from and against any and all losses suffered by the State, its officers and employees, and any and all claims, liabilities or penalties asserted against the State, its officers and employees, by or on behalf of any person, on account of, based or resulting from, arising out of (or which may be claimed to arise out of) the acts or omissions of the Contractor. Notwithstanding the foregoing, nothing herein contained shall be deemed to constitute a waiver of the sovereign immunity of the State, which immunity is hereby reserved to the State. This covenant in paragraph 13 shall survive the termination of this Agreement.

14. INSURANCE.

14.1 The Contractor shall, at its sole expense, obtain and maintain in force, and shall require any subcontractor or assignee to obtain and maintain in force, the following insurance:

14.1.1 comprehensive general liability insurance against all claims of bodily injury, death or property damage, in amounts of not less than \$250,000 per claim and \$2,000,000 per occurrence; and

14.1.2 fire and extended coverage insurance covering all property subject to subparagraph 9.2 herein, in an amount not less than 80% of the whole replacement value of the property.

14.2 The policies described in subparagraph 14.1 herein shall be on policy forms and endorsements approved for use in the State of New Hampshire by the N.H. Department of Insurance, and issued by insurers licensed in the State of New Hampshire.

14.3 The Contractor shall furnish to the Contracting Officer identified in block 1.9, or his or her successor, a certificate(s) of insurance for all insurance required under this Agreement. Contractor shall also furnish to the Contracting Officer identified in block 1.9, or his or her successor, certificate(s) of insurance for all renewal(s) of insurance required under this Agreement no later than fifteen (15) days prior to the expiration date of each of the insurance policies. The certificate(s) of insurance and any renewals thereof shall be

attached and are incorporated herein by reference. Each certificate(s) of insurance shall contain a clause requiring the insurer to endeavor to provide the Contracting Officer identified in block 1.9, or his or her successor, no less than ten (10) days prior written notice of cancellation or modification of the policy.

15. WORKERS' COMPENSATION.

15.1 By signing this agreement, the Contractor agrees, certifies and warrants that the Contractor is in compliance with or exempt from, the requirements of N.H. RSA chapter 281-A (*"Workers' Compensation"*).

15.2 To the extent the Contractor is subject to the requirements of N.H. RSA chapter 281-A, Contractor shall maintain, and require any subcontractor or assignee to secure and maintain, payment of Workers' Compensation in connection with activities which the person proposes to undertake pursuant to this Agreement. Contractor shall furnish the Contracting Officer identified in block 1.9, or his or her successor, proof of Workers' Compensation in the manner described in N.H. RSA chapter 281-A and any applicable renewal(s) thereof, which shall be attached and are incorporated herein by reference. The State shall not be responsible for payment of any Workers' Compensation premiums or for any other claim or benefit for Contractor, or any subcontractor or employee of Contractor, which might arise under applicable State of New Hampshire Workers' Compensation laws in connection with the performance of the Services under this Agreement.

16. WAIVER OF BREACH. No failure by the State to enforce any provisions hereof after any Event of Default shall be deemed a waiver of its rights with regard to that Event of Default, or any subsequent Event of Default. No express failure to enforce any Event of Default shall be deemed a waiver of the right of the State to enforce each and all of the provisions hereof upon any further or other Event of Default on the part of the Contractor.

17. NOTICE. Any notice by a party hereto to the other party shall be deemed to have been duly delivered or given at the time of mailing by certified mail, postage prepaid, in a United States Post Office addressed to the parties at the addresses given in blocks 1.2 and 1.4, herein.

18. AMENDMENT. This Agreement may be amended, waived or discharged only by an instrument in writing signed by the parties hereto and only after approval of such amendment, waiver or discharge by the Governor and Executive Council of the State of New Hampshire.

19. CONSTRUCTION OF AGREEMENT AND TERMS. This Agreement shall be construed in accordance with the laws of the State of New Hampshire, and is binding upon and inures to the benefit of the parties and their respective successors and assigns. The wording used in this Agreement is the wording chosen by the parties to express their mutual

intent, and no rule of construction shall be applied against or in favor of any party.

20. THIRD PARTIES. The parties hereto do not intend to benefit any third parties and this Agreement shall not be construed to confer any such benefit.

21. HEADINGS. The headings throughout the Agreement are for reference purposes only, and the words contained therein shall in no way be held to explain, modify, amplify or aid in the interpretation, construction or meaning of the provisions of this Agreement.

22. SPECIAL PROVISIONS. Additional provisions set forth in the attached EXHIBIT C are incorporated herein by reference.

23. SEVERABILITY. In the event any of the provisions of this Agreement are held by a court of competent jurisdiction to be contrary to any state or federal law, the remaining provisions of this Agreement will remain in full force and effect.

24. ENTIRE AGREEMENT. This Agreement, which may be executed in a number of counterparts, each of which shall be deemed an original, constitutes the entire Agreement and understanding between the parties, and supersedes all prior Agreements and understandings relating hereto.

EXHIBITS TO CONTRACT

EXHIBIT A	Scope of Services
EXHIBIT B	Budget
EXHIBIT C	Special Provisions

CERTIFICATE OF GOOD STANDING

CERTIFICATE OF CORPORATE VOTE

CERTIFICATE OF INSURANCE

EXHIBIT A: SCOPE OF SERVICES

The Contractor shall provide the following services. All equipment shall be provided by the Contractor unless the State agrees otherwise to provide it:

1. Winter Maintenance

1.1 Snow-clearing operations will be done, at a minimum, when accumulation reaches 2" or greater. This is to include all parking spaces (as possible) and roadways.

1.2 Storms that end by 3:00 a.m. will be cleared by 7:00 a.m.

1.3 Storms that continue through the day will be cleared at 3 to 4 hour intervals.

1.4 Communicate with NHDOT District Office (448-2654) and REDACTED to coordinate or request salt or sand for the lot and any other coordination needed regarding snow clearing.

1.5 Shovel and treat sidewalks and walkways.

1.6 Salt applications on the parking lot travel path will be the responsibility of the Contractor. The State will load a measured amount of salt onto the Contractor's truck at the State maintenance facility on REDACTED to allow for one salt application per storm event to keep in compliance with permitting restrictions. No other deicing chemicals shall be used on the parking lot.

1.7 All activities of the Contractor shall preclude the discharge of substances in concentrations that will result in harm to water supply, fish and wildlife. Only those materials approved and registered by the U.S. Environmental Protection Agency for the specific purpose planned will be considered for use on the Premises.

1.8 The Contractor, REDACTED, is authorized by the Commissioner to assist in the operation and management of the REDACTED lot including enforcement of RSA 228:103 and RSA 228:104.

2. Other Maintenance

2.1 The Contractor shall provide all grounds maintenance in the non-winter seasons. Maintenance shall include the following at a minimum:

- Mowing
- Weed whacking
- Litter removal
- Sweeping/cleaning sand and debris from parking lot
- Cleaning transit shelter

2.2 Maintenance provided in this section shall be consistent with guidelines set forth by the State with regards to its written standards for Park & Ride lots.

2.3 Where no written standards exist for the State, the Contractor may use its own discretion. However, the Contractor shall adhere to reasonable requests from the State pertaining to the items listed in Section 2.1 above, such as those that stem from customer complaints.

EXHIBIT B: BUDGET

1. Contract Price

1.1 The total contract price shall not exceed REDACTED

1.1.1. The contractor shall invoice the State monthly or quarterly.

1.1.2. Invoices shall be sent to:

Attn: Fred Butler
NHDOT Bureau of Rail & Transit
PO Box 483
Concord, NH 03302-0483

1.1.3. The State agrees to pay such invoices within 30 days after satisfactory completion of work invoiced, receipt of the invoice, approval, and acceptance by State.

EXHIBIT C: SPECIAL PROVISIONS

(There are no special provisions.)

Tool 22: Liability and Risk Reduction/Minimization

Owner and Operator Liabilities:

The owner and operator of a park and ride may have liabilities in the event property is damaged or a person is injured. First, in New Hampshire, almost anyone can sue almost anyone else, for nearly anything. Therefore, the issue is not whether an injured or damaged person, or even someone with no injury or damages, can sue, but rather what their chances of success might be. Frivolous cases can and likely will be filed. But, generally they can be dismissed or defeated with relative ease. Second, potential liability for personal injury or property damage is no more likely to be imposed or more severe for the owner of the land, than it would be for the entity holding a Ground Lease, Lease, Easement, or License. Liability is imposed based on the conduct that gave rise to the damages, and not based on the legal mechanism under which the land is owned or controlled.

Once the facility is operating, the most obvious and likely claims might be for personal injury and/or property damage by people using the facility, common among them is the “slip and fall.” Other claims common claims: “I was hit by a car because the lot was improperly striped”, or “My car was damaged by your poorly designed curb”, or “I was robbed because you did not provide enough security.” Other less likely claims might be by abutters or neighbors, based on stormwater drainage issues, traffic impacts, light pollution, noise, trash, spills, and dumping. Finally, there may be claims of regulatory violations related to offsite impacts from stormwater, spills, or waste disposal.

The operator of a park and ride owes a “duty of care” to those who are foreseeably within the zone of danger of the risks created by the activity (such as the users of the facility) or who are specifically protected by a State law. A “duty of care” means that the operator must use reasonable care not to subject others to an unreasonable risk of harm. It is unclear under New Hampshire law whether the “duty of care” of a park and ride operator means that the operator must make reasonable efforts to protect from criminal danger, such as vandalism, physical assault, and the like, as opposed to non-criminal dangers, such as car damage because of poor curb design, slip and falls, and the like. Because of this lack of clarity in the law, and the ability of anyone to sue for any reason, the best approach would be to assume that the operator is required to use reasonable measures to protect against crime.

When an operator does not satisfy its duty of care, and as a result someone experiences personal injury or property damage, the operator may be liable for that damage. In the past, municipalities enjoyed near-complete immunity from such liability. However, since 1974, municipal immunity has been eroding.

Currently, municipalities are immune only from suit for the damages they may cause with respect to the exercise of their legislative or judicial functions, and their exercise of executive planning functions involving the making of basic policy decisions which are characterized by the exercise of a high degree of official judgment or discretion. See Merrill v. Manchester, 114 N.H. 772 (1974). It can safely be presumed that designing, building, and operating a park and ride are all tasks that are not legislative, judicial, or the exercise of discretionary policy judgments.

Examples of the distinction are helpful. The New Hampshire Supreme Court has decided that a town was immune from liability for its decision to install a storm drain, but having decided to install it, the town was not immune from a claim for damages from the abutter when the storm drain caused damage on the abutter's property. The New Hampshire Supreme Court has also decided that the decision on where to install highway guardrails was immune from liability, but that once the decision was made, the town was not immune to liability for damages caused by the failure to conform to the approved plan.

Private operators of a park and ride would not have any immunity from suit. It is important to note that whether a park and ride is operated by the State, a private party, or a town or city, the "duty of care" does not require perfection, or an absolute guarantee of safety. It requires reasonable prudence. Put another way, the owner or operator will not be liable to the injured plaintiff unless the plaintiff can prove that his or her injury (or property damage) was caused by owner or operator acting in a way that fell short of what a reasonable park and ride operator should do or that the owner or operator violated an applicable law.

Towns and cities are not without some legal protection against financial loss. In response to the judicial abrogation of common law immunity for its cities and towns, the New Hampshire Legislature enacted RSA 507-B to limit the amount of damages that a municipality can be required to pay. The limit for any single claim by an individual is \$275,000, and the limit of what can be collected by any number of people injured or suffering damages in a single incident or occurrence, is \$925,000. Like all laws, these amounts are subject to periodic amendment by the Legislature.

Private operators of a park and ride would not have any such limits to liability. Municipalities, but not private owners or operators, can take measures to protect individual employees from liability. See RSA 31:105 ("A city, town, county, village district or precinct, school district, chartered public school, school administrative unit, or any other municipal corporation or political subdivision may by a vote of the governing body indemnify and save harmless for loss or damage occurring after said vote any person employed by it and any member or officer of its governing board, administrative staff or agencies including but not limited to selectmen, school board members, chartered public school trustees, city councilors and aldermen, town and city managers, town and city health officers, regional planning commissions, overseers of public welfare, and superintendents of schools from personal financial loss and expense including reasonable legal fees and costs, if any, arising out of any claim, demand, suit, or judgment by reason of negligence or other act resulting in accidental injury to a person or accidental damage to or destruction of property if the indemnified person at the time of the accident resulting in the injury, damage, or destruction was acting in the scope of employment or office").

Mechanisms for Risk Reduction or Minimization:

Many opportunities exist to minimize liability and then to manage the risks liability that is unavoidable. The operator can implement any number of operational controls, including the following.

A worthwhile investment to protect against liability is good legal representation, especially during the land acquisition and permitting phases. Good title research work, clearly drawn Purchase and Sale Agreement or Lease, other agreements, and Deeds will minimize acquisition risks. Well-crafted documents should provide instruction of what will happen if these various circumstances and issues arise.

Alternative Dispute Resolution:

All transactional documents, which includes nearly every document except a deed, should have a provision for alternate dispute resolution, known as ADR. ADR prescribes the process the parties must go through to try to resolve disputes. Typically, the party with the issue must provide the other party in writing the description of the problem. Then, the party receiving notice of the issue usually has the option to either fix the problem or say in writing why they disagree that the issue really is a problem or really exists. Next, the parties are typically required to engage in mediation or arbitration. Both mediation and arbitration are ways of the parties being able to put forward their positions to a neutral third party, typically an attorney. In arbitration, the arbiter decides the case. In mediation, the mediator helps the parties determine if they can come to a mutually acceptable agreement. Finally, most ADR provisions will allow the parties to go to court only if all of the other possible attempts to resolve the issue are completed and the parties still have a disagreement.

Reduce/Minimize Risk:

- Audits
- Inspections
- Checklists
- Training
- Smart design
- Low Impact Design

Insurance:

Insurance policies provide protection against unexpected loss. Insurance policies are contracts. A person or a business purchases an insurance policy from an insurance company by entering into a contract and making periodic payments. The payments are often due monthly and are referred to as “premiums.” In exchange for the premiums, the insurance company agrees to pay up to a certain amount in the event of unexpected loss. Insurance policies often require the policy holder (i.e., the purchaser of the insurance policy) to pay a portion of the loss. The portion paid by the policy holder is called the “deductible.” An insurance policy holder may be an entity such as an individual, business, non-profit organization, or municipality.

Insurance is an industry regulated by the states. In New Hampshire, the New Hampshire Insurance Department is the regulatory agency. There are insurance policies tailored for numerous types of businesses and undertakings. In New Hampshire, common types of insurance policies include professional liability policies, comprehensive general liability (CGL) policies, and business liability policies. CGL policies are common insurance policies sold to businesses. CGL policies generally provide that the insurance company will defend and indemnify the policy holder against claims for bodily injury and property damage. In the case of a park and ride, the insurance company would provide legal defense to the owners of the park and ride from claims made by people claiming that they or their vehicles were injured or damaged by conditions

existing at the park and ride. In the event that the person was entitled to damages, the insurance company would indemnify the park and ride by paying the damages.

Generally, if the language of an insurance policy is ambiguous as to whether the policy covers a certain loss, courts construe the policy as providing coverage. The reason for this is that insurance policies are not considered to be bargained-for contracts in the sense that both parties to the contract have equal bargaining power. Insurance policies are drafted by insurance companies that are better versed in the contents of the policy than is the lay policy holder. However, because policies such as CGL policies are issued to businesses, New Hampshire courts tend to be somewhat less protective of the policy holder when construing such policies.

It is critical for a policy holder to notify the insurance company as soon as the policy holder becomes aware that there may be a claim made for damages made. Failure to follow the notice requirements of an insurance policy could result in the insurance company's lawful denial of coverage.

Tool 23: Park and Ride Historical Usage Survey

1. What park and ride(s) in New Hampshire do you use? Indicate the town/city and road in which the facility is located.

Facility 1 in town x on road y

Facility 2 in town x on road y

2. What town/city do you live in?

3. What form of transportation do you usually use when arriving at each identified facility?

Facility	Personal Vehicle	Dropped off by Family/Friend	Taxi	Walk	Bicycle	Bus	Other
Facility 1 in town x on road y	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Facility 2 in town x on road y	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. What towns/cities are your typical destinations for each identified facility?

Facility	Most frequent destination	Second most frequent destination
Facility 1 in town x on road y		
Facility 2 in town x on road y		

5. What form of transportation did you usually use when leaving the facility for your destination?

Facility	Carpool			Walking	Bicycle	Bus	Other
	2 people	3 people	4+ people				
Facility 1 in town x on road y	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Facility 2 in town x on road y	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. How often do you use the park and ride ?

Facility	Less than once/week	1-2 days/week	3-4 days/week	5+ days/week
Facility 1 in town x on road y	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Facility 2 in town x on road y	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. What kind of trips do you make? (Check all that apply)

Facility	Work commute	Business travel	Leisure	School	Medical	Personal	Other
Facility 1 in town x on road y	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Facility 2 in town x on road y	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. How long do you tend to leave your car in the facility?

Facility	1-4 hours	5-8 hours	8-12 hours	12-24 hours	24+ hours
Facility 1 in town x on road y	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Facility 2 in town x on road y	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. What would you like to see improved in this facility?

Facility	More parking	Phone service	Transit service	Side-walks	Shelter	Travel Info (maps, etc)	Other
Facility 1 in town x on road y	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Facility 2 in town x on road y	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Tool 24: Park and Ride Survey “Snapshot”

1. What park and ride were you parking at when you received this survey?
2. What town/city do you live in?
3. What form of transportation did you use when arriving at the facility?

<input type="checkbox"/> Personal Vehicle	<input type="checkbox"/> Dropped off by family/friend	<input type="checkbox"/> Taxi
<input type="checkbox"/> Walking	<input type="checkbox"/> Bicycle	<input type="checkbox"/> Bus
<input type="checkbox"/> Other, <input type="text"/>		
4. What town/city was your final destination?
5. What is the name or address of that final destination?
6. How many miles did you avoid driving round trip from the destination in Question 4 to the destination in Question 5?
7. What form of transportation did you use when leaving the facility for your destination?

<input type="checkbox"/> Carpooled (2 people total)	<input type="checkbox"/> Carpool (3 people total)	<input type="checkbox"/> Carpool (4 or more)
<input type="checkbox"/> Walking	<input type="checkbox"/> Bicycle	<input type="checkbox"/> Bus
<input type="checkbox"/> Other, <input type="text"/>		
8. How often do you use the park and ride?

<input type="checkbox"/> Less than once per week	<input type="checkbox"/> 1 to 2 days per week	<input type="checkbox"/> 3 to 4 days per week
<input type="checkbox"/> 5 or more days per week		
9. What kind of trip were you making from the facility?

<input type="checkbox"/> Work commute	<input type="checkbox"/> Business travel	<input type="checkbox"/> Leisure
<input type="checkbox"/> School	<input type="checkbox"/> Medical appointment	<input type="checkbox"/> Personal reason
<input type="checkbox"/> Special event, <input type="text"/>	<input type="checkbox"/> Other, <input type="text"/>	
10. How long did you leave your car in the facility?

<input type="checkbox"/> 1 to 4 hours	<input type="checkbox"/> 5 to 8 hours	<input type="checkbox"/> 8 to 12 hours
<input type="checkbox"/> 12 to 24 hours	<input type="checkbox"/> More than 24 hours	
11. What would you like to see improved in this facility?

<input type="checkbox"/> No improvements required	<input type="checkbox"/> More parking spaces	<input type="checkbox"/> Phone service
<input type="checkbox"/> Transit service	<input type="checkbox"/> Sidewalks	<input type="checkbox"/> Shelter
<input type="checkbox"/> Travel Information (Maps, etc)	<input type="checkbox"/> Other, <input type="text"/>	

Tool 25: Monitoring Park and Ride Use

Below is a field actuated table that provides a way to record park and ride use. We recommend only surveying park and ride use on a Tuesday, Wednesday or Thursday on a week free of holidays. This tool can be used monthly, seasonally or annually depending on resources you have for data collection. A quick note on the fields are provided below:

- Location refers to the Name of the municipality in which the park and ride is located.
- P & R Year Built is an important field because if need for the facility remains constant, then the number of cars should rise over the short term until drivers are more aware of the park and ride .
- Capacity refers to the number of vehicle spaces available at the facility. If there are bike racks or motorcycle spaces you may want to record that capacity separately.
- The State Gas Price Average is a useful base indicator for tracking the impact of gas prices on park and ride use. This information is available at <http://fuelgaugereport.opisnet.com/NHavg.asp>. We recommend following the average cost of a gallon of Regular Unleaded.
- Time refers to the time in which the occupancy of the facility is recorded. We recommend recording the occupancy in the middle of the day between 10 am and 2 pm.
- Date refers to the date in which the survey is performed.
- # of cars refers to the number of vehicles observed by the surveyor.
- % occupancy automatically calculates based on the # of cars and capacity fields entered into the tool.
- % overall occupancy is recalculated as day 1 and day 2 are updated
- If available, enter in the demand forecast for the park and ride location based on guidance in Tool 9: “Forecasting Demand.”
- The Occupancy to Demand Ratio will show how close you are to your occupancy goal for the park and ride. If the Occupancy number is lower than the demand number than it is not doing as well as you anticipated. If it is higher, it is doing better than expected.

Location	Name of Town	
P&R Year Built		
	Day 1	Day 2
Capacity		
State Gas Price Average		
Time		
Date		
# of Cars		
% Occupancy		
% of Overall Occupancy	0.0	
Travel Demand Forecast		
Occupancy to Demand Ratio	0.0:	

Tool 26: Evaluating Park and Ride Multimodal Opportunities

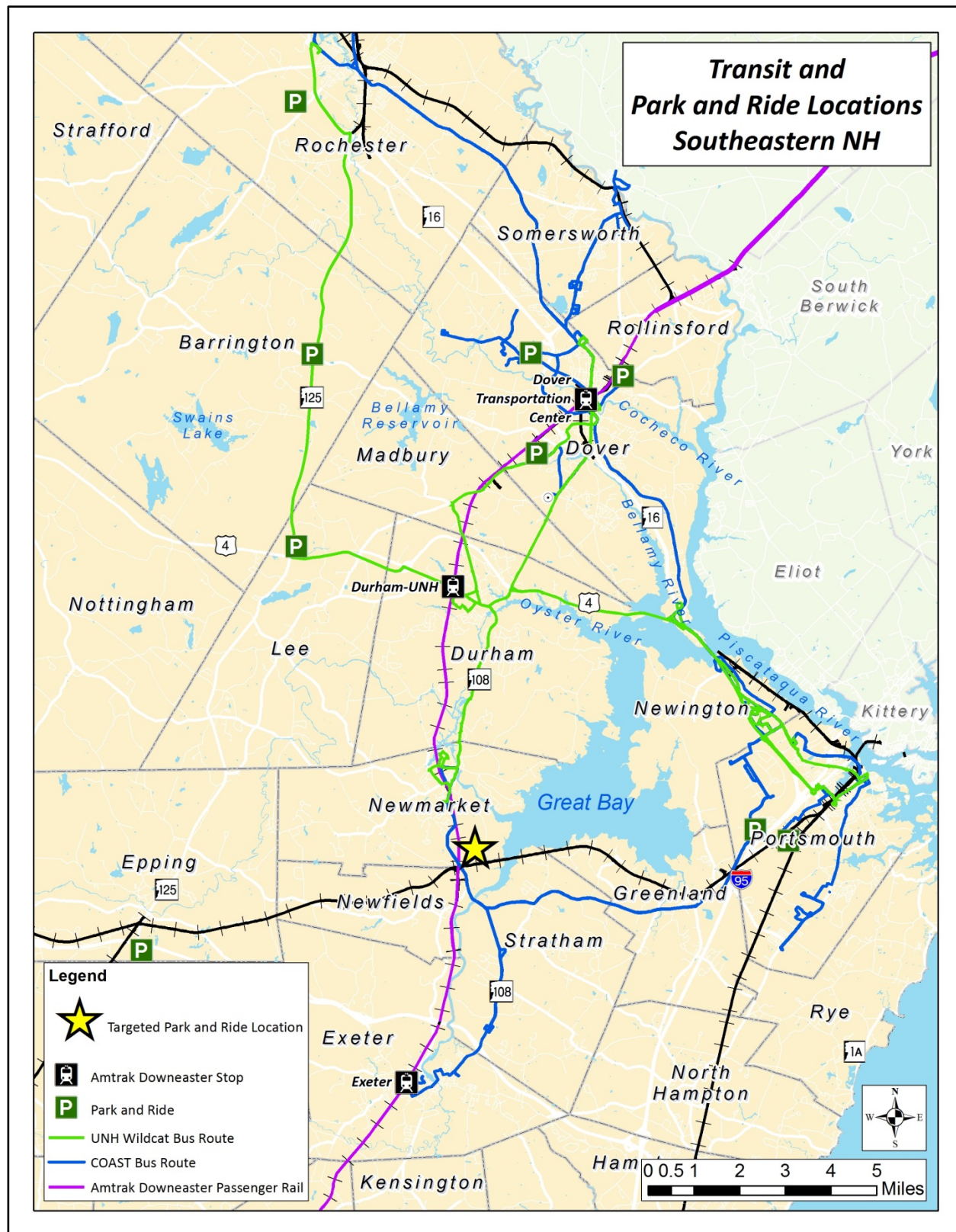
The map on the next page (Figure 4) provides a regional look at the transit, rail, highway, and park and ride systems in southeastern New Hampshire.

Southeastern New Hampshire has one of the most developed transit systems in the state with coverage serving the major urbanized areas of the region. Southeastern New Hampshire is also home to the Downeaster passenger rail service which has three stops in the region.

The majority of the park and ride network in the region was built beginning in the early-2000s and continues to present day. The park and ride development in the region has been driven by environmental mitigation requirements from large transportation projects in the area. NHDOT has worked hard to reach out to the public and other stakeholders to ensure the park and rides are built conveniently upstream on primary commute corridors in order to capture as much commuter traffic as possible. They have also been successful working with the local transit providers to ensure the park and rides are built in locations that either are or could be served by regional and/or intercity transit.

The planning that has gone into constructing these park and rides has led to high levels of daily use for commuters and other travelers. This has accomplished the objective of increasing the efficiency on the region's primary commuter routes by shifting people in single occupancy vehicles to high occupancy vehicles or other modes of transportation.

Figure 4: Transit and Park and Ride Locations in Southeastern NH



The following list of questions has some factors to consider when evaluating intermodal opportunities at park and rides:

- 1) Does transit exist in this area or is this a likely location for future transit routes (work with local transit providers and your MPO/RPC to help answer this question)?
- 2) If so, where are the routes located and will the proposed park and ride location meet the needs of the transit providers (E.g. ease of access and egress, adequate room to circulate busses)?
- 3) Are there large businesses or organizations downstream of this location that may want to support commuter shuttles or vanpools based out of the facility (if so do they have interest in participating in the planning/outreach process)?
- 4) Is the proposed location in close proximity to an area that has pedestrian or bicycle infrastructure?
- 5) If so, is it possible to safely connect these modes to the park and ride?
- 6) Is there passenger rail near the proposed park and ride location and will the facility be built so that the public can make connections between modes?

Subsequent pages contain examples that take a closer look at elements from the map above.

Figure 5: The Portsmouth Transit Center



Example 1:

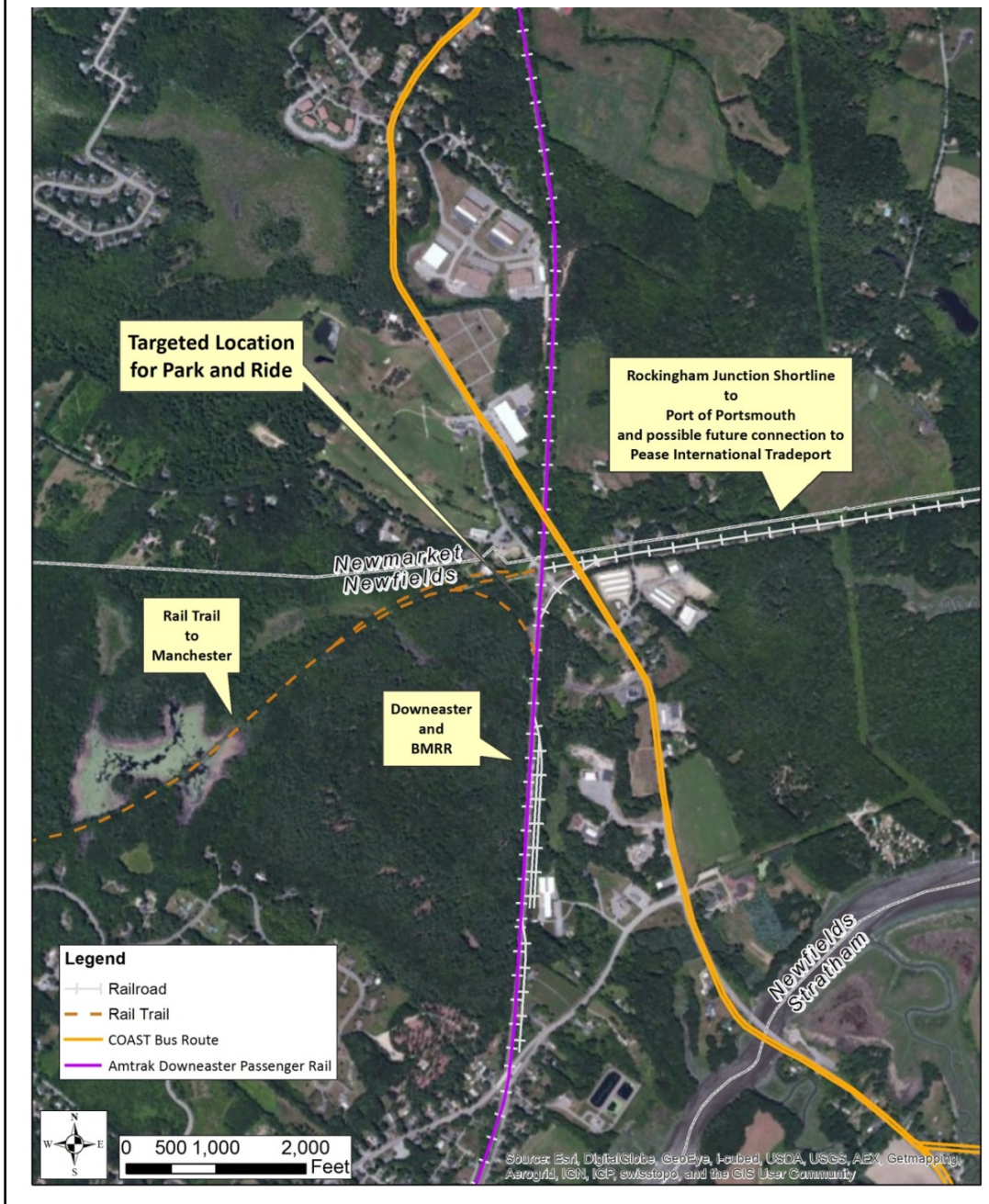
Built in the early 2000s and expanded several years later with funding from the CMAQ program, the Portsmouth Transportation Center was one of the first multimodal parking facilities in New Hampshire. This park and ride includes over 975 parking spaces and a transit center that is open 24 hours a day seven days a week. There is bike storage, access to public phones, bathrooms, and two staffed public facilities. This is one of the largest and most successful park and ride facilities in the state.

The facility is located just outside of the Pease International Tradeport in Portsmouth and has easy access to the major commuter routes: Route 33 and Interstate 95. The facility is managed and operated by C&J Transportation and is served by C&J, COAST, and Flightline with daily commuter routes to Boston, locations in the Strafford and Rockingham regions, and transit service to the Manchester-Boston Regional Airport.

This facility is New Hampshire's most used park and ride, and often operates at over 100% capacity. The transit service is a major factor for the success of the park and ride. On a daily basis C&J transportation operates a commuter transit route to Boston with enough ridership to support 20 minutes headways at peak travel times of the day.

The convenient location just off Interstate 95 and major commuter routes, along with access to transit are two of the primary reasons why this facility has seen this level of success. In early 2013 the park and ride was awarded CMAQ funding for its second major expansion.

Figure 6: Targeted Park and Ride Location – Rockingham Junction, Newmarket



Example 2:

The second example takes a closer look at a location that is not currently served by a park and ride, but has many characteristics of an ideal park and ride location. The location being investigated is marked with a star in Figure 4: “Transit and Park and Ride Locations in Southeastern New Hampshire” and is shown in more detail in the figure above.

The location under investigation is at the border of Newmarket and Newfields along Route 108. It is just north of the intersection of two major commuter routes (Routes 108 and 33) that serve Portsmouth, Exeter, Pease International Tradeport, Southern New Hampshire, and the Boston metro area. The average daily traffic on this stretch of route 108 was 17,000 cars per day in 2010.

The following short exercise will use the questions from above to help evaluate the multimodal opportunities at this location:

- 1) Does transit exist in this area or is this a likely location for future transit routes (work with local transit providers and your MPO/RPC to help answer this question)?

Yes. There is also potential for future transit connections including additional Wildcat Transit routes and intercity transit routes originating at this location.

- 2) If so, where are the routes located and will the proposed park and ride location meet the needs of the transit providers (E.g. ease of access and egress, adequate room to circulate busses)?

COAST Route 7 makes a connection from Newington-Newmarket-Exeter via Routes 33 and 108. Route 7 also connects to a number of Wildcat Transit and other COAST routes. COAST should conveniently be able to pull off of Route 108 in this area due to an existing access road for Rockingham Junction. Adequate space for transit to safely turn around should be planned for a park and ride built in this location.

- 3) Are there large businesses or organizations downstream of this location that may want to support commuter shuttles or vanpools based out of the facility (if so do they have interest in participating in the planning process or the outreach and education of the project)?

The population targeted by this park and ride are primarily people commuting to jobs. The goal of placing a park and ride here is to reduce commuter congestion during peak traffic times of the day. With Portsmouth, Pease International Tradeport, and Exeter all close by this would be an excellent location for employer vanpool or shuttle pickup.

- 4) Is the proposed location in close proximity to an area that has pedestrian or bicycle infrastructure?

This proposed location is at the terminus of a popular rail trail that runs along the former Boston & Maine Railroad: Portsmouth to Manchester Branch. The rail trail begins at the proposed park and ride location and continues to Manchester. Route 108 (and routes it connects to) is very popular for cyclists and cycling groups because it is the primary southern route around the Great Bay and provides access to many scenic and historic locations.

- 5) If so, is it possible to safely connect these modes to the park and ride?

Yes. If a park and ride is constructed at this location it will be important to plan for the safe transfer between modes of transportation. Motor vehicles, pedestrians, and transit can all be expected and should be planned for by separating modes where possible (i.e. sidewalks to provide safe pedestrian areas, and a bus shelter and safe waiting area that is separate from motor vehicle parking areas).

- 6) Is there a passenger rail near the proposed park and ride location and will the facility be built so that the public can make connections between modes?

The Amtrak Downeaster passenger rail service runs along the Boston and Maine Railroad. This service currently makes three intercity stops in the downtowns of Dover, Durham, Exeter. There are issues (primarily parking and access) with these three locations that limit the regional commuter benefits of each of these locations.

A future Rockingham Junction Train stop would provide a true regional train stop for the Amtrak service and has the potential to significantly increase ridership on the Downeaster. In the future, if the Portsmouth to Manchester rail corridor is reclaimed for rail use, this location could potentially support commuter rail connecting points within the Strafford and Rockingham regions.

Any plans for developing a park and ride at Rockingham Junction should include provisions for future passenger rail.

Tool 27: ITS for Park and Ride Facilities

Intelligent Transportation Systems (ITS) first became part of United States transportation policy in 1998 with the passage of the Transportation Equity Act for the 21st century (TEA-21). At the time electronics, computing power, and the Internet had all matured to the point that the utility of incorporating them into the transportation system became clear. Applications for ITS are broad and bring many benefits to the transportation system including increasing efficiency of the existing transportation network, reducing congestion, improving safety and security, improving emergency response and the reducing negative impacts the transportation system has on the environment.

Rapidly advancing technologies have resulted in ITS systems taking hold in all aspects of our transportation systems and ongoing advances promise more integration as we move forward. ITS elements have even penetrated into park and ride and intermodal facilities and are helping users feel more secure, find parking spaces, and connect to other modes of transportation more easily. These technologies can be instrumental in building and maintaining core groups of park and ride users.

The following are some examples of ITS applications employed around the country.

Pre-Arrival Services:

Figure 7: ITS Examples



Parking Space Counting System:

Using surface mounted sensors, loop counters, and in the near future, optical sensors (similar to those used on traffic signals) real time parking information is fed into a central computer system that can indicate both the number and location of parking spots available at a facility.

These systems are most appropriate for large parking centers.

Pre-Arrival ITS Services Continued



Automated Vehicle Location (AVL) Systems :

Automated Vehicle Location (AVL) Systems provide real time transit information to the public with transit vehicle locations and schedules. This tool can also be instrumental in encouraging park and ride use if a facility is served by transit.



Cell Phone Based Parking Apps:

If a parking space counter system is in place at a facility it can be used to feed information into a parking application for mobile devices that can deliver real-time parking information to commuters. This can be useful in attracting and retaining park and ride users at busy park and rides.

Onsite Services:



Variable Message Boards:

These electronic signs are becoming more prevalent throughout the transportation system. In park and rides these systems provide information to travelers about available parking. When tied in with other technologies these systems can provide real-time parking information and transit schedules.