

MEMORANDUM

To: Advisory Committee
Chittenden County Park-and-Ride/Intercept Facility Plan
From: Joe Segale, PE/PTP
Subject: Revised Project Prioritization Methodology and Results
Date: 2 September 2010

At its August 12, 2010 meeting, the Park-and-Ride/Intercept Facility Plan Advisory Committee made several suggestions for modifying the preliminary prioritization methodology presented in *Project Memo 4 – Preliminary Prioritization Method* (August 5, 2010 Draft). This memorandum summarizes the comments, presents a revised methodology, summarizes the results and will be discussed at the September 7, 2010 Advisory Committee Meeting.

Summary of Suggested Changes

The names of the following two criteria have been modified as suggested:

- “Right-of-way acquired” has been changed to “Land acquired”; and
- “Confirmed Partnership Opportunities” has been changed to “Confirmed Public/Private Partnership”

The following changes were suggested to the methodology:

1. Change the maximum score possible from 25 to 50 points
2. Provide separate criteria and weighting for park-and-ride and intercept facilities.
3. Add a criterion for “likelihood of obtaining state and local permits”
4. Include existing facilities in the prioritization

Summary of Changes Included in Revised Methodology

The response to comments 1, 2 and 3 have been incorporated into the revised methodology as presented in Table 1. The maximum score has been increased to 50 points. Maximum points have been increased for each criterion that reflect new weighting and a different approach to addressing congestion, safety and the suggested local/state permit criterion.

The criteria have been weighted differently for park-and-ride and intercept facilities as follows:

- Bicycle and pedestrian access is a pre-requisite for intercept facilities and is therefore given more weight in the scoring for intercept facilities.
- Intercept facilities are by definition located directly adjacent to activity centers. Thus, proximity to an activity center will not distinguish one intercept facility from another. Therefore, the activity center criterion is not included for intercept facilities. Proximity to activity centers continues to be a criterion in the park-and-ride methodology.

The most significant change to the methodology has been placement of congestion and safety into a “Potential Obstacle” table that will be used to deduct points from locations with poor level of service or high crash rates. The list potential obstacle also includes the suggested criterion for the likelihood of obtaining state and local permits. Deductions are logical for these three factors. Unlike the other criteria which relate to positive conditions, the potential obstacles can make a specific site less attractive for a park-and-ride or intercept facility. The one difference between the scoring for potential obstacles is that no deduction will be applied for intercept facilities located in congested areas. Because intercept facilities will be located at the edge of the busiest areas of the County, congestion will be an issue at most if not all locations and is therefore not a characteristic that will distinguish one location from another.

Table 1: Revised Criteria and Scoring

Category	Criteria	Max Score by Facility Type	
		Park & Ride	Intercept
Demand	Annual Average Daily Traffic (AADT)	10	10
	Level of Transit Service	10	10
	Bicycle or Pedestrian Connections	8	10
Location	Interstate/Arterial Access	5	5
	Activity Center/Services	2	0
Readiness	Site is Identified	3	3
	Land is aquired or otherwise available	6	6
	Confirmed Public/Private Partnership Opportunities	6	6
Totals		50	50
		Max Adjstment by Facility Type	
	Potential Obstacle	Park & Ride	Intercept
	High Levels of Congestion at Site (LOS E or F)	-5	0
	High Crash Location at Site	-5	-5
	Significant Obstacles to Obtaining State and Local Permits	-10	-10
	Total Potential Deduction	-20	-15

Point scales specific to each criterion have also been revised to reflect differences between park-and-ride and intercept facilities where appropriate and are described below.

The total amount of points possible for the AADT criterion has increased from 5 to 10. The points assigned are proportional to AADT on adjacent roads at scales specific to park-and-ride and intercept facilities. AADTs on roadways adjacent to or near proposed park-and-ride locations ranged from a 2,400 to 62,700 vehicles per day. AADTs on roadways adjacent to or near proposed intercept locations ranged from a 27,400 to 92,900 vehicles per day. All other point scales are summarized in the tables below.

To reflect the critical importance of high frequency transit at intercept facilities, only locations with existing service are assigned points. Transit is also important for park-and-ride facilities, but points are awarded for less frequent service or for locations that are on planned routes (Table 2).



Table 2: Level of Transit Service Point Scale

Availability of Transit Service	Park & Ride	Intercept
On an existing, higher frequency route (min 1/2 hour headway)	10	10
On an existing commuter service route w/ AM and PM peak hour service	10	5
Existing low level service route	5	0
Potential for future bus service in near to mid-term	2	0
Service possible in long term	1	0
No existing or planned transit service	0	0

Table 3: Bicycle and Pedestrian Connection Service Point Scale

Bicycle and Pedestrian Connections	Park & Ride	Intercept
Within 1/2 mile of residential or employment area & sidewalks exists and/or;	8	10
Within 2 miles biking distance of residential or employment area and biking facilities exist		
Within 1/2 mile of residential or employment area & sidewalks possible and/or;	4	5
Within 2 miles biking distance of residential or employment area and biking facilities possible		
Not accessible by bike or foot	0	0

Table 4: Proximity to Activity Center Point Scale

Proximity to Activity Center or Services	Park & Ride	Intercept
Less than 1/2 mile	1	Not used
More than 1/2 miles	0	Not used

Table 5: Interstate/Arterial Access Point Scale

Interstate/Arterial Access	Park & Ride	Intercept
At interstate exit or on a principal arterial	5	5
Just off a principal arterial	2	2
Not on or near a principal arterial	0	0

Table 6: Site Identified Point Scale

Site Identified	Park & Ride	Intercept
Yes	3	3
No	0	0

Table 7: Land Acquired Point Scale

Land has been acquired	Park & Ride	Intercept
Yes	6	6
No	0	0

Table 8: Confirmed Public/Private Partnership

Confirmed Public/Private Partnership Opportunities	Park & Ride	Intercept
Yes	6	6
No	0	0



Table 9: Point Deductions for Congestion

Congestion	Park & Ride	Intercept
LOS D or Better	0	0
LOS E or F at nearby intersection or road	-5	0

Table 10: Point Deductions for Safety

Safety	Park & Ride	Intercept
No High Crash Location near entrance	0	0
High Crash Location near access	-5	-5

Table 11: Point Deductions for Obstacles to Local and State Permits

Significant Obstacles to Obtaining State and Local Permits	Park & Ride	Intercept
No	0	0
Yes	-10	-10

The revised methodology has been used to rank the park-and-ride and intercept facility locations evaluated in the 2004 plan. The results are presented in Table 12 (page 5) for park-and-rides and Table 13 (page 6) for intercept facilities. The test provides a means to check the reasonableness of the proposed prioritization methodology. The methodology may be revised to address additional comments and other locations may be included once the methodology has been approved by the Advisory Committee.

Alternate Prioritization Methodology for Existing Facilities

The scores and ranking of park-and-ride facilities presented in Table 12 includes the Exit 11 park-and-ride in Richmond. It is the only existing facility on the list. However, as demonstrated in *Project Memorandum 1 – Inventory and Travel Characteristics* (February 23, 2010 draft), there are issues at other existing facilities that should be addressed including poor visibility from adjacent roadways, congestion, safety and not enough parking. These types of issues could be addressed with spot improvements at existing facilities and do not necessarily involve constructing a facility at a new location. Since the prioritization methodology presented above is designed for ranking new locations, it not well suited to prioritizing improvements at existing facilities. Therefore, it may be useful to have a separate methodology for prioritizing existing facilities. Table 14 (page 6) lists the existing facilities that have identified deficiencies and presents a prioritization methodology. Scores are assigned based on the deficiency and weighted according to demand. Demand is based on observed parking space occupancy, level of transit service and bicycle/pedestrian access. The methodology will be explained further at the September 7, 2010 meeting.



Table 12: Test Ranking of Potential and Existing Park-and-Ride Locations

Town	Location	DEMAND POINTS			LOCATION POINTS		READINESS POINTS			OBSTACLE DEDUCTIONS			Score without Obstacles	Score with Obstacles
		AADT	Level of Transit Service	Bicycle/ Pedestrian Connection	Highway Access	Activity Center or Village	Site Identified	Land Acquired	Confirmed Public/Private Partnerships	Congestion	Safety	State & Local Permits		
Williston	I-89 Exit 12 Taft Corners	10	10	8	5	1	3	0	0	-5	-5	0	37	27
Richmond	I-89 Exit 11	7	10	4	5	0	3	6	0	-5	-5	0	35	25
Shelburne	Shelburne Village	3	10	8	5	1	0	0	0	-5	0	0	27	22
Essex	Lang Farm, VT 15 & CCCH	6	10	4	5	1	0	0	0	0	0	0	26	26
Essex	VT 117 & CCCH	2	10	0	5	0	3	6	0	0	0	0	26	26
Jericho	VT 15 & River Road, Big Johns	2	2	8	5	0	3	0	0	0	0	0	20	20
Charlotte	Railroad station or other permanent	4	10	4	2	0	0	0	0	0	0	0	20	20
Essex	VT 2A CCCH Interchange	5	0	0	5	0	3	6	0	0	-5	0	19	14
Essex	VT 15 & Allen Martin Drive	4	2	4	5	0	3	0	0	0	0	0	18	18
Colchester	Near US 7/Severance Road	5	0	4	5	0	0	0	0	-5	-5	0	14	4
Richmond	Richmond Village	3	0	8	0	1	0	0	0	0	-5	0	12	7
Colchester	VT 127 Near Heineberg Bridge	3	0	0	5	0	3	0	0	0	-5	0	11	6
St. George	VT 2A/VT 116 intersection	3	2	0	5	1	0	0	0	0	0	0	11	11
Westford	Westford Village	1	0	8	0	1	0	0	0	0	0	0	10	10
Williston	Redmond Road near CCCH	2	0	0	5	0	0	0	0	0	0	0	7	7

Table 13: Test Ranking of Potential Intercept Facility Locations

Town	Location	DEMAND POINTS			LOCATION POINTS		READINESS POINTS			OBSTACLE DEDUCTIONS			Score without Obstacles	Score with Obstacles
		AADT	Level of Transit Service	Bicycle/Pedestrian Connection	Highway access	Activity Center or Village	Site Identified	Land Acquired	Confirmed Public/Private Partnerships	Congestion	Safety	State & Local Permits		
South Burlington	US 2 at I-89 Exit 14	10	10	10	5	Not Used	3	6	6	Not Used	-5	0	50	45
Burlington	South End Transit Center	6	10	10	2	Not Used	3	6	6	Not Used	-5	0	43	38
South Burlington	US 7, south of I-189	9	10	5	5	Not Used	0	0	0	Not Used	-5	0	29	24
Colchester	US 7 near I-89 Exit 16	7	5	5	5	Not Used	0	0	6	Not Used	-5	0	28	23
Colchester	VT 15/Barnes Ave	6	10	0	5	Not Used	0	0	0	Not Used	-5	0	21	16
South Burlington	I-89 and VT 116	7	0	0	5	Not Used	0	0	0	Not Used	0	0	12	12
Burlington	Northern Connector/VT 127	3	3	0	5	Not Used	0	0	0	Not Used	0	0	11	11

Table 14: Prioritization of Existing Park-and-Ride Facilities

Facility	Existing Deficiencies						Weighting of Deficiency Score by Demand					Final Score	
	Poor visibility from Arterial	High Crash Location	Congestion	> 85% Parking Occupancy	Poor Access for Transit Vehicles	Issues Score	Peak Parking Demand		Level of Transit Service	Bike/Ped Connection	Demand Score		Demand Adjustment (Demand Score/30)
							Observed Count	10 Point Scale					
Points Assigned if Relevant	5	5	5	20	15	45	101	10	10	5	25	0.83	
Points Assigned if Not Relevant	0	0	0	0	0								72
Richmond/Exit 11	0	5	5	20	15	45	101	10	10	5	25	0.83	
St. Albans/Exit 19	0	0	5	20	15	40	72	7	10	10	27	0.90	36
Georgia/Exit 18	0	0	0	0	15	15	25	2	10	0	12	0.40	6
Highgate Commons	0	5	0	0	0	5	14	1	10	0	11	0.37	2
Collins-Perley	0	5	0	0	0	5	4	0	10	0	10	0.33	2
Charlotte-CITGO	0	5	0	0	0	5	5	0	10	0	10	0.33	2
Berlin/Exit 7	0	5	5	0	0	10	45	4	0	0	4	0.13	1
Huntington Village	0	5	0	0	0	5	5	0	0	5	5	0.17	1
Fairfield	0	5	0	0	0	5	1	0	0	0	0	0.00	0
Bristol Park and Ride	5	0	0	0	0	5	3	0	0	0	0	0.00	0