



Assessment of Transit Needs, Gaps, and Duplications

This chapter examines the transit need that exists in the Seward area. Transit need and transit demand are terms that should be thought of separately. Need exists when transit service may not be available. Demand is generally thought of as deriving from various levels or types of service.

It remains difficult to quantify the existing transit need for a region. Chapter V uses three methodologies to examine the amount of need and demand. The first methodology examines the difference in household trips by vehicle access. The remaining methodologies attempt to quantify demand by using trip rates related to both program trips and general public service trips.

Needs, gaps, and duplications are summarized at the end of this chapter. This summary integrates the discussion from the previous chapters.

MOBILITY GAP METHODOLOGY

The mobility gap methodology is used to identify what amount of service is required to provide an equal amount of mobility to households that have access to vehicles and those that do not. The National Personal Transportation Survey (NPTS) provides data that allow for calculations to be made relating to trip rates. Separate trip rates are generated for various regions throughout the United States to account for any locational inequities. Trip rates are also separated by general density and other factors such as age.

Alaska is part of Division Nine, the Pacific Region. Trip rates for zero-vehicle households in rural areas of the Pacific Region were determined to be 3.3 daily trips. For rural households with at least one vehicle, the trip rate was 5.8 daily trips. The mobility gap is calculated by subtracting the daily trip rate of zero-vehicle households from the daily trip rate of households with at least one vehicle.

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Thus, the mobility gap is represented as 2.5 household trips per day. This means that households that have access to a vehicle take 2.5 more daily trips on average.

To calculate the transit need for each transit analysis zone (TAZ), the number of zero-vehicle households is multiplied by the mobility gap number. Table V-1 shows this information broken out by TAZ. In total, 383 daily trips need to be provided via transit to make up for the gap in mobility.

These numbers were updated to reflect potential growth over the next ten years. Table V-2 shows the mobility gap table, updated to 2020 demographics. The number of trips that would need to be provided to make up for the gap in mobility in 2020 is estimated at 414 trips. This is a modest increase of 31 daily trips over this time span.

Table V-1 Seward Mobility Gap 2010									
Tract	Block Group	TAZ	Location	2010 Population	2010 Households	No Vehicle	One Plus Vehicle	Mobility Gap	Daily Transit Need
13	2	6	Seward	477	155	22	132	2.5	56
		7		174	56	8	48	2.5	20
		8		661	214	31	183	2.5	78
		10		118	38	6	33	2.5	14
		11		104	34	5	29	2.5	12
		12		51	16	2	14	2.5	6
		13		219	71	10	61	2.5	26
		14		105	34	5	29	2.5	12
		15		68	22	3	19	2.5	8
		16		120	39	6	33	2.5	14
		17		94	31	4	26	2.5	11
18	153	50	7	42	2.5	18			
19	221	72	10	61	2.5	26			
13	1	1	Bear Creek	317	124	5	119	2.5	13
		2		272	107	4	102	2.5	11
		3		275	108	4	103	2.5	11
		4		232	91	4	87	2.5	9
		5		748	293	12	281	2.5	31
13	1	21	Lowell Point	97	38	2	36	2.5	4
3	1	22	Primrose	73	31	1	30	2.5	3
			TOTAL	4,581	1,623	153	1,469	-	383

Source: LSC, 2010.

Table V-2 Seward Mobility Gap 2020									
Tract	Block Group	TAZ	Location	2020 Population	2020 Households	No Vehicle	One Plus Vehicle	Mobility Gap	Daily Transit Need
13	2	6	Seward	515	167	24	143	2.5	60
		7		188	61	9	52	2.5	22
		8		713	231	34	198	2.5	84
		10		127	41	6	35	2.5	15
		11		113	36	5	31	2.5	13
		12		55	18	3	15	2.5	6
		13		237	77	11	66	2.5	28
		14		113	37	5	31	2.5	13
		15		73	24	3	20	2.5	9
		16		129	42	6	36	2.5	15
		17		102	33	5	28	2.5	12
		18		165	54	8	46	2.5	19
		19		239	77	11	66	2.5	28
13	1	1	Bear Creek	342	134	6	128	2.5	14
		2		294	115	5	110	2.5	12
		3		297	116	5	111	2.5	12
		4		251	98	4	94	2.5	10
		5		807	316	13	303	2.5	33
13	1	21	Lowell Point	105	41	2	39	2.5	4
3	1	22	Primrose	79	33	1	32	2.5	3
			TOTAL	4,943	1,751	165	1,585	-	414

Source: LSC, 2010.

RURAL TRANSIT DEMAND

A methodology developed as part of a Transit Cooperative Research Program (TCRP) project exists that allows us to forecast transit demand for market segments of the population.

Program Trips

Program trips are trips that occur because of the presence of specific social service programs including Head Start, day habilitation services, and senior living centers.

Census information was gathered on various segments of the population, including individuals of specific ages and by type of disability. These populations, for each TAZ, are then used to forecast the number of participants in a specific program. The TCRP methodology has a trip rate for each type of program which allows us to calculate the approximate number of trips that will be provided. Table V-3 shows the total number of estimated annual one-way program trips as 31,894. This equates to approximately 125 daily program trips on public transit.

Table V-3		
Seward Area Estimated Program-Related Transit Need		
Program Type	Estimated # of Participants	Annual One-Way Trips
Developmental Services		
<i>Adult</i>	15 pp	5,319
<i>Case Management</i>	5 pp	207
<i>Pre-school -- 3 to 5 yrs (est.)</i>	4 pp	926
Head Start	6 pp	1,515
Job Training (est.)	29 clients	4,009
Mental Health Services (est.)	2 clients	776
<i>Case Management (est.)</i>	44 clients	279
Nursing Home	11 pp	104
Senior Nutrition (est.)	29 pp	7,594
Sheltered Workshop* (est.)	29 pp	11,166
TOTAL PROGRAM TRIPS		31,894
<i>Source: Demand estimates based on the methodology presented in "TCRP Report 3: Workbook for Estimating Demand for Rural Passenger Transportation," and 2000 US Census Bureau.</i>		
<i>*Note: Est. = Best Estimation Technique used from 2000 US Census Bureau.</i>		

Non-Program Trips

TCRP rural demand methodology has established a system of estimating demand for non-program trips. This method uses the general population, elderly population, mobility-limited population, and low-income population to determine total demand. The methodology uses assumed vehicle-miles to generate a service factor that is then used to calculate demand by market segment.

Table V-4 presents this information for each TAZ within the study area. The table shows general public trips, mobility-limited trips, and elderly trips. This methodology estimates the current non-program demand at 5,710 trips annually. This estimate thus predicts 22 daily one-way non-program trips within the area.

These numbers were also forecasted based on 2020 demographics. Table V-5 shows this information. When looking at the future demographics, the annual estimated demand becomes approximately 6,100 trips. This represents an increase of two trips daily, or 390 annually.

**Table V-4
2010 Estimated Non-Program Transit Demand using the TCRP Method
Seward Area**

Place	Census Tract	Census Block Group	Transit Analysis Zones	Estimated Annual Passenger-Trip Demand					Estimated Daily Transit Demand		Daily Demand Density (Trips per Sq. Miles per Day)			
				Elderly	Mobility-Limited	Elderly + Mobility-Limited	Low-Income	Total Annual Demand	#	%				
Seward	13	2	6	350	110	460	210	670	3	11.7%	0.33			
			7	130	40	170	80	250	1	4.4%	0.48			
			8	500	160	660	290	950	4	16.6%	2.93			
			10	100	30	130	60	190	1	3.3%	5.10			
			11	80	20	100	50	150	1	2.6%	0.59			
			12	80	20	100	40	140	1	2.5%	21.12			
			13	220	70	290	130	420	2	7.4%	24.58			
			14	80	20	100	40	140	1	2.5%	0.92			
			15	120	30	150	70	220	1	3.9%	35.95			
			16	30	10	40	20	60	0	1.1%	16.81			
			17	130	40	170	80	250	1	4.4%	36.31			
			18	110	40	150	70	220	1	3.9%	0.70			
			19	120	40	160	70	230	1	4.0%	15.82			
			Bear Creek	13	1	1	130	50	180	100	280	1	4.9%	0.04
						2	110	40	150	90	240	1	4.2%	0.24
						3	110	40	150	90	240	1	4.2%	0.25
						4	90	40	130	80	210	1	3.7%	0.37
						5	300	110	410	240	650	3	11.4%	0.78
			Lowell Point	13	1	21	40	10	50	30	80	0	1.4%	0.03
Primrose	3	1	22	80	20	100	20	120	0	2.1%	0.01			
Totals				2,910	940	3,850	1,860	5,710	22	100%	163.35			

Source: 2000 Census, Alaska Department of Labor and Workforce Development-Research and Analysis, LSC 2010.

**Table V-5
2020 Estimated Public Transit Demand using the TCRP Method
Seward Area**

Census Tract	Census Block Group	Transit Analysis Zones	Estimated Annual Passenger-Trip Demand					Estimated Daily Transit Demand		Daily Demand Density (Trips per Sq. Miles per Day)
			Elderly	Mobility-Limited	Elderly + Mobility-Limited	Low-Income	Total Annual Demand	#	%	
13	2	6	380	120	500	220	720	3	11.8%	0.4
		7	140	40	180	80	260	1	4.3%	0.5
		8	540	170	710	310	1,020	4	16.7%	3.1
		10	110	30	140	60	200	1	3.3%	5.4
		11	80	30	110	50	160	1	2.6%	0.6
		12	80	20	100	50	150	1	2.5%	22.6
		13	230	70	300	140	440	2	7.2%	25.8
		14	80	30	110	50	160	1	2.6%	1.0
		15	130	40	170	70	240	1	3.9%	39.2
		16	30	10	40	20	60	0	1.0%	16.8
		17	140	40	180	80	260	1	4.3%	37.8
		18	120	40	160	70	230	1	3.8%	0.7
		19	130	40	170	80	250	1	4.1%	17.2
13	1	1	140	50	190	110	300	1	4.9%	0.0
		2	120	40	160	100	260	1	4.3%	0.3
		3	120	40	160	100	260	1	4.3%	0.3
		4	100	40	140	80	220	1	3.6%	0.4
		5	320	120	440	260	700	3	11.5%	0.8
13	1	21	40	20	60	30	90	0	1.5%	0.0
3	1	22	80	20	100	20	120	0	2.0%	0.0
Totals			3,110	1,010	4,120	1,980	6,100	24	100.0%	173

Source: 2000 Census, Alaska Department of Labor and Workforce Development-Research and Analysis, LSC 2010.

GREATEST TRANSIT NEED

The “greatest transit need” is defined as those portions of the study area with the highest percentage of zero-vehicle households and elderly, disabled, and below-poverty populations. This information was used to develop the transit service plan and identify the appropriate service district boundaries.

Methodology

The data included in Chapter III were used to calculate the greatest transit need. The categories used for the calculation were zero-vehicle households, elderly population, disabled population, and below-poverty population. Using these categories, LSC developed a “transit need index” to determine the greatest transit need. The percentage of the population for each TAZ within each category was calculated, placed in numerical order, and divided into five segments. Five segments were chosen to reflect a reasonable range. Each segment contained an approximately equal number of TAZs to provide equal representation.

The TAZs in the segment with the lowest density were given a score of one. The TAZs in the segment with the next density were given a score of two, and so on. The TAZ in the segment with the highest percentages were given a score of five. This scoring was completed for each of the categories (zero-vehicle households, elderly population, disabled population, and below-poverty population). After each of the TAZs was scored for the four categories, the four scores were added up to achieve an overall score. Table V-6 presents the ranked scores for each US Census TAZ in the study area. The scores range from four (lowest need) to 20 (highest need). Figure V-1 also shows the information graphically.

Results

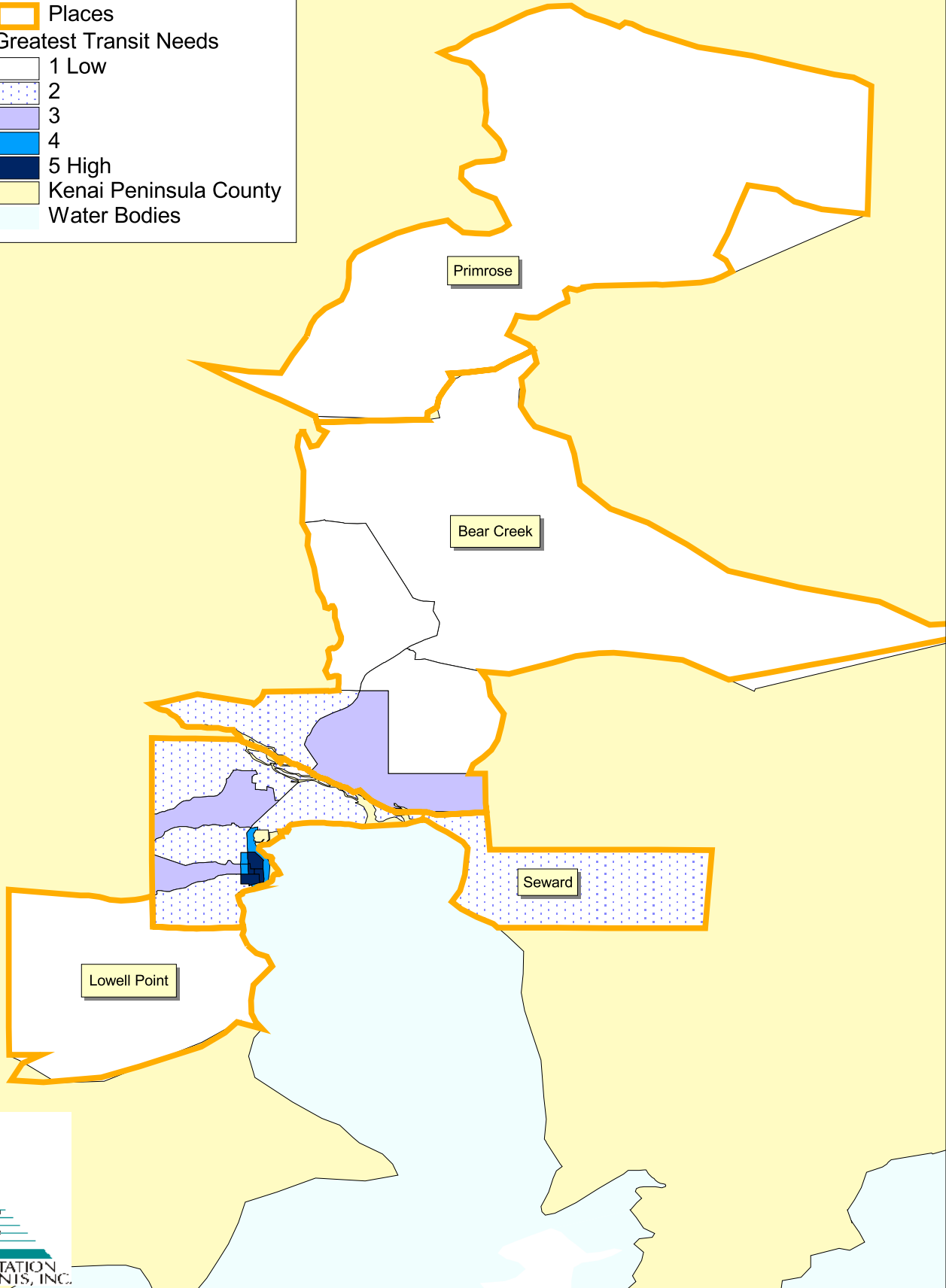
The results allow us to rank which census TAZs need transit the most. The areas that show the highest transit need based on this methodology are located in the downtown area of Seward. More specifically, TAZs 13, 16, 17, and 19 all received a greatest transit needs score of four, the maximum possible under this scenario. All of the TAZs that scored a four are adjacent to those that scored a five. This shows that the transit need is generally clustered around a specific area, which is valuable information when service alternatives are discussed.

Figure V-1
Greatest Transit Needs

Places

Greatest Transit Needs

- 1 Low
- 2
- 3
- 4
- 5 High
- Kenai Peninsula County
- Water Bodies



**Table V-6
2010 Greatest Transit Need Scores by Census Block Group**

Census Tract	Census Block Group	Transit Analysis Zones	Area Description	Land Area (acres)	Zero-Vehicle Households			Total # of Hhlds	Total Number of Elderly 60 & over			Mobility-Limited Population			Below-Poverty Population			Overall Score (4-20)	Final (1-5)	Total Population (Persons) #			
					#	Density (hhlds per acre)	rank		#	#	Density (hhlds per acre)	rank	#	Density (hhlds per acre)	rank	#	Density (hhlds per acre)				rank		
13	2	6	Seward	5,104	22	0.00	3	155	51	0.01	2	22	0.00	2	40	0.01	1	8	2	477			
		7		1,302	8	0.01	3	56	19	0.01	3	8	0.01	3	15	0.01	2	11	2	174			
		8		814	31	0.04	4	214	71	0.09	4	31	0.04	4	56	0.07	3	15	3	661			
		10		93	6	0.06	4	38	13	0.14	4	5	0.06	4	10	0.11	4	16	4	118			
		11		637	5	0.01	3	34	11	0.02	3	5	0.01	3	9	0.01	2	11	2	104			
		12		17	2	0.14	4	16	5	0.33	4	2	0.14	4	4	0.26	4	16	4	51			
		13		43	10	0.24	5	71	23	0.55	5	10	0.24	5	19	0.43	5	20	5	219			
		14		383	5	0.01	4	34	11	0.03	4	5	0.01	4	9	0.02	3	15	3	105			
		15		15	3	0.21	5	22	7	0.47	5	3	0.20	5	6	0.37	4	19	4	68			
		16		9	6	0.63	5	39	13	1.43	5	6	0.62	5	10	1.13	5	20	5	120			
		17		17	4	0.26	5	31	10	0.58	5	4	0.25	5	8	0.46	5	20	5	94			
		18		790	7	0.01	3	50	16	0.02	3	7	0.01	3	13	0.02	2	11	2	153			
		19		36	10	0.29	5	72	24	0.65	5	10	0.28	5	19	0.51	5	20	5	221			
		13		1	1	Bear Creek	18,752	5	0.00	1	124	19	0.00	1	9	0.00	1	20	0.00	1	4	1	317
					2		2,535	4	0.00	2	107	16	0.01	2	8	0.00	2	17	0.01	1	7	1	272
					3		2,437	4	0.00	2	108	16	0.01	2	8	0.00	2	18	0.01	1	7	1	275
					4		1,428	4	0.00	2	91	14	0.01	2	7	0.00	2	15	0.01	2	8	2	232
					5		2,090	12	0.01	3	293	44	0.02	3	22	0.01	3	48	0.02	3	12	3	748
		13		1	21	Lowell Point	7,537	2	0.00	1	38	6	0.00	1	3	0.00	1	6	0.00	1	4	1	97
3	1	22	Primrose	24,614	1	0.00	1	31	11	0.00	1	3	0.00	1	3	0.00	1	4	1	73			
STUDY AREA TOTAL:				68,655	153	9.4%		1,623	400	8.7%		179	3.9%		343	7.5%			4,581				

Source: 2000 Census, Alaska Department of Labor and Workforce Development-Research and Analysis, LSC 2010.

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DEMOGRAPHIC-BASED NEEDS IDENTIFICATION

The above technical methods provide a good barometer for transit need. The data present an estimate of potential need of the residents of the study area. The mobility gap methodology allows us to see the upper threshold of potential need by examining the relationship between vehicle access and trips. While this model shows that 383 trips would need to be provided daily to bridge the gap in mobility, it should be seen as the highest potential need. The TCRP methodology for public transit trips presents a more realistic daily demand of 22 trips.

IDENTIFIED SERVICE GAPS

Gaps in service are both geographic in nature as well as lack of service for various market segments. While the Seward area is served with elderly and disabled demand-responsive services, much of the Seward area currently receives little, if any, services. However, that does not mean a significant portion of the population in the community is not being served. Much of the rural portions are sparsely populated, and it would not be feasible to serve 100 percent of the borough. The following paragraphs summarize service gaps and issues identified in Chapters II through V.

Geographic Service Gaps

With the exception of a pilot program summer shuttle which operated during 2010, no public transportation or publicly-supported general public transportation options exist in the Seward area. This leaves a complete geographic service gap for needy individuals who do not fit into other specialized programs for the elderly or persons with disabilities. Although taxi companies are available to provide transportation to and from any location in the Seward area, their services are perceived to be unaffordable on a regular basis by general-public populations in need.

Service Delivery Gaps

In addition to the lack of public or publicly-supported transportation options, existing providers report the following service delivery gaps:

- a. Unclear/incomplete understanding of transportation options in the Seward area.
- b. Limited service hours (varies by provider).

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- ▶ Hours of the day.
 - ▶ Days of the week.
 - ▶ Seasonal changes with some private providers closing shop in the winter, others focusing on the tourist market at an inconvenience to residents in the peak summer season.
 - ▶ Limited ability to provide connecting services or day trip services to the Kenai/Soldotna area or Anchorage for medical and shopping purposes.
- c. Inconsistent availability of wheelchair/lift-equipped services.
- d. Organizational barriers to service delivery.
- ▶ Higher-than-desired amounts of administrative time used on transportation components of human-service programs.
 - ▶ Organizational turnover of “lead” transportation organization.
 - ▶ Ownership turnover of private transportation providers, especially taxi companies.
- e. Based on the above barriers, and comparing current service delivery to demand estimates, between 20 and 400 trips per day are unmet.