

## CHAPTER II

# Transportation Needs Assessment

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### INTRODUCTION

This chapter presents an analysis of the demand for transit services in the Northwest Region based upon standard estimation techniques and public commentary from residents. The transit demand identified in this chapter will be utilized in the identification of transit service alternatives and the evaluation of the various alternatives presented in the next Technical Memorandum. Different methods are used to estimate the maximum transit trip demand in the Northwest Region:

- Rural Transit Demand Methodology
- Transit Needs and Benefits Study
- Ridership Trends



Feedback from residents within the community also plays a critical role in the regional planning process. Public meetings throughout the region allow citizens to express their ideas and provide suggestions to the planning document.

### COMMUNITY INPUT

Community input at public meetings provides an opportunity for residents to express transit needs for their area. These needs were recorded by the LSC Team and will be used in the development of transit alternatives. A goal of the Preferred Plan is to meet as many of the needs as possible, provided funding is available.

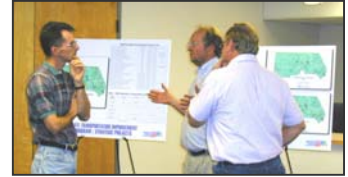
Public meetings were scheduled during the initial stage of the project. Three meeting sites were selected within the region for maximum community input. Two meetings were held on July 8, 2003 (one in Meeker and one in Kremmling). The third meeting was held in Steamboat Springs on July 9, 2003. Many comments were submitted by meeting attendees. The following is a list of the comments related to transit and to alternate modes of transportation.

#### ***Steamboat Springs Comments – Public Meeting, July 9, 2003***

- *More transit services – Fish Creek area. Rail service – Interstate – outside CO; Front-range to mountains needed. Must have incentives to use other modes; creative marketing. Are there federal monies for subsidies? Smaller buses – may be more neighborhood friendly. Jitneys – are they a realistic option. Need bicycle access – share the road. Rabbit Ears – look at safety options. Additional shoulders on state highways.*
- *Only option is to provide multi-modal public transport in urban/city areas; specifically Steamboat Springs.*
- *Can we assume “mass transit” means buses? I don’t think we have densities to support true mass transit; current challenges to support more effective bus service (which “locals” really like) is ability to pay & hire drivers. US 40 improvements needed from mile marker 140-149! Trucker kiosk on the pass or outside of Kremmling!*

### **Meeker Comments – Public Meeting, July 8, 2003**

- *Rifle is growing very fast. This will impact Meeker because we are 40 miles away. There will be jobs in Rifle. In the 80's there was a bus from Craig, Rifle to Grand Junction. We have 2 regional mines. At the present, miners carpool. We need a public transport system! This will cut down on congestion. It will allow low-income people to access jobs, mental and medical care. The closest bus stop is 50 or 40 miles away.*
- *Out of town transit to Craig/Rifle. Many low-income residents without licenses.*
- *The town of Meeker owns 115 acres plus adjacent to its west boundaries. A master plan has been adopted by the town. The plan includes pedestrian trails and a visitor center. It also includes changing the main street intersection with Highway 13. Identified potential funding partners are: COCO, BLM, forest service, CDOT (enhancement, scenic byways, reconstruction) DOW, town, etc. Attached is a drawing of the proposed project. Timeline 5 to 10 years. I would be happy to provide more info anytime!*



Other public meetings will be held around the region as the study proceeds over the next six months.

## **RURAL TRANSIT DEMAND METHODOLOGY**

An important source of information and the most recent research regarding demand for transit services in *rural areas* and for persons who are elderly or disabled is the Transit Cooperative Research Program (TCRP) Project A-3: Rural Transit Demand Estimation Techniques. This study, completed by SG Associates, Inc. and LSC, represents the first substantial research into demand for transit service in rural areas and small communities since the early 1980s.

The TCRP Methodology is based on *permanent* population. Thus, the methodology provides a good look at transit demand for the Northwest Region. Knowing this information, the LSC Team presents the transit demand for 2002 and for year 2030, based on population projections from the Colorado Department of Local Affairs.

### **TCRP Methodology Background**

The TCRP study documents present a series of formulas relating the number of participants in various types of programs in 185 transit agencies across the country. The TCRP analytical technique uses a logit model approach to the estimation of transit demand, similar to that commonly used in urban transportation models. This model incorporates an exponential equation, which relates the quantity of service and the demographics of the area.

This analysis procedure considers transit demand in two major categories:

- “*program demand*” which is generated by transit ridership to and from specific social service programs, and
- “*non-program demand*” generated by other mobility needs of elderly persons, persons with disabilities, and the general public, including youth. Examples of non-program trips may include shopping, employment, and medical trips.

### **Non-Program Demand**

As with any other product or service, the demand for transit services is a function of the level of supply provided. To use the TCRP methodology in identifying a feasible maximum demand, it is necessary to assume a high supply level, as measured in vehicle-miles per square mile per year. The high supply level is the upper-bound “density” of similar rural services provided in this country. This assessment of demand for the rural areas, therefore, could be considered to be the maximum potential ridership if a high level of rural service were made available throughout the Northwest Region. The TCRP methodology is based on the *permanent* population of the five-county area. Therefore, the TCRP methodology is a good demand method to use for the Northwest Region during the non-peak seasons.

For the Northwest Region, a reasonable maximum level of service in the non-peak season would be to serve every portion of the county with four round-trips (eight one-way trips) daily, Monday through Friday. This equates to approximately 2,400 vehicle-miles of transit service per square mile per year. This is at the upper range of observed rural systems.

Applying this feasible maximum service density to the permanent population of each county yields the 2002 estimated transit demand for the general population including youth, as well as the elderly and mobility-limited populations, as shown in Table II-1. The 2002 potential demand for the entire Northwest Region for elderly transit service is 40,540 annual trips; disabled demand is 5,730 annual trips; and general public demand is 20,120 annual trips. The potential demand for each county is also shown in the table. The Northwest Region estimated total transit demand for 2002, using the TCRP method, at 66,390 annual trips for the non-peak season. This amount would be desired by the elderly, mobility-limited, and general public if a very high level of transit service could be provided. The demand would be concentrated in the larger communities.

Transit demand estimates, using the TCRP methodology, for 2030 are provided in Table II-2. Total demand for 2030 is estimated to be 110,730 one-way, annual passenger-trips for the Northwest Region.

**Table II-1**  
**2002 Estimated Public Transit Demand using the TCRP Method**  
**Northwest Region - based on Permanent Population**

County	Census Tract	Census Block Group	Area Description	Estimated Annual Passenger-Trip Demand					Estimated Daily Transit Demand		Daily Demand Density (Trips per Sq. Mile per Day)
				Elderly	Mobility Limited	Elderly + Mobility Limited	General Public	TOTAL	#	%	
Grand	1	1	West Grand County	1,050	70	1,120	350	1,470	6	9.5%	0
	1	2	Kremmling Area	1,100	160	1,260	780	2,040	8	13.2%	2
	2	1	NE Grand County	2,280	40	2,320	650	2,970	12	19.2%	0
	2	2	E Central Grand County	2,780	330	3,110	1,180	4,290	17	27.7%	0
	2	3	Granby Area	1,280	250	1,530	570	2,100	8	13.6%	4
	2	4	SE Grand County	1,260	290	1,550	1,070	2,620	10	16.9%	0
<i>Subtotal</i>				<i>9,750</i>	<i>1,140</i>	<i>10,890</i>	<i>4,600</i>	<i>15,490</i>	<i>61</i>		<i>5</i>
Jackson	9556	1	Jackson County - rural	920	50	970	250	1,220	5	36.6%	0
	9556	2	Walden Area	1,030	190	1,220	890	2,110	8	63.4%	9
<i>Subtotal</i>				<i>1,950</i>	<i>240</i>	<i>2,190</i>	<i>1,140</i>	<i>3,330</i>	<i>13</i>		<i>9</i>
Moffat	1	1	Central Moffat County	560	30	590	380	970	4	5.1%	0
	1	2	W Moffat County	430	70	500	350	850	3	4.4%	0
	2	1	NE Moffat County	320	0	320	100	420	2	2.2%	0
	2	2	SE Moffat County	370	0	370	150	520	2	2.7%	0
	3	1	NE of Craig	450	0	450	70	520	2	2.7%	0
	3	2	NW of Craig	650	130	780	940	1,720	7	9.0%	0
	3	3	S of Craig	890	130	1,020	30	1,050	4	5.5%	0
	4	1	SW Craig Area	250	70	320	0	320	1	1.7%	4
	4	2	NW Craig Area	330	110	440	110	550	2	2.9%	2
	4	3	W Craig Area	800	200	1,000	170	1,170	5	6.1%	7
	4	4	Central Craig	1,970	140	2,110	1,160	3,270	13	17.1%	39
	4	5	W Craig Area	810	110	920	260	1,180	5	6.2%	10
	5	1	SE Craig Area	0	0	0	0	0	0	0.0%	0
	5	2	NE Craig Area	570	150	720	450	1,170	5	6.1%	18
	5	3	NE Craig Area	670	40	710	180	890	3	4.6%	2
	5	4	E Craig Area	800	290	1,090	400	1,490	6	7.8%	12
	5	5	E Craig Area	540	260	800	240	1,040	4	5.4%	11
	5	6	Central Craig	390	210	600	350	950	4	5.0%	17
5	7	Central Craig	770	130	900	170	1,070	4	5.6%	23	
<i>Subtotal</i>				<i>11,570</i>	<i>2,070</i>	<i>13,640</i>	<i>5,510</i>	<i>19,150</i>	<i>75</i>		<i>147</i>
Rio Blanco	9511	1	E Rio Blanco County	720	0	720	180	900	4	8.9%	0
	9511	2	Central Rio Blanco County	1,440	90	1,530	440	1,970	8	19.4%	0
	9511	3	Meeker Area	1,240	120	1,360	950	2,310	9	22.8%	28
	9511	4	W Meeker Area	1,330	170	1,500	320	1,820	7	17.9%	1
	9512	1	W Rio Blanco County	130	0	130	20	150	1	1.5%	0
	9512	2	N Rangely Area	890	70	960	310	1,270	5	12.5%	2
9512	3	S Rangely Area	920	140	1,060	660	1,720	7	17.0%	1	
<i>Subtotal</i>				<i>6,670</i>	<i>590</i>	<i>7,260</i>	<i>2,880</i>	<i>10,140</i>	<i>40</i>		<i>31</i>

**Table II-1, continued**  
**2002 Estimated Public Transit Demand using the TCRP Method**  
**Northwest Region - based on Permanent Population**

County	Census Tract	Census Block Group	Area Description	Estimated Annual Passenger-Trip Demand					Estimated Daily Transit Demand		Daily Demand Density (Trips per Sq. Mile per Day)
				Elderly	Mobility Limited	Elderly + Mobility Limited	General Public	TOTAL	#	%	
Routt	1	1	NE of Steamboat Springs	470	30	500	0	500	2	2.7%	0
	1	2	NW of Steamboat Springs	640	150	790	60	850	3	4.6%	0
	1	3	NW Routt County	270	70	340	60	400	2	2.2%	0
	2	1	Hayden Area	670	270	940	340	1,280	5	7.0%	2
	2	2	S Hayden Area	500	80	580	310	890	3	4.9%	0
	3	1	SW Routt County	100	30	130	50	180	1	1.0%	0
	3	2	Area NE of Oak Creek	410	90	500	120	620	2	3.4%	0
	3	3	Area NW of Oak Creek	670	70	740	260	1,000	4	5.5%	0
	3	4	Oak Creek Area	340	50	390	260	650	3	3.6%	2
	4	1	N of Steamboat Springs	230	0	230	40	270	1	1.5%	0
	4	2	NW Steamboat Springs	250	220	470	470	940	4	5.1%	1
	4	3	N Steamboat Springs	390	80	470	0	470	2	2.6%	0
	5	1	Steamboat Springs	910	70	980	300	1,280	5	7.0%	2
	5	2	Steamboat Springs	220	30	250	210	460	2	2.5%	10
	5	3	Steamboat Springs	690	0	690	210	900	4	4.9%	24
	5	4	W of Steamboat Springs	30	0	30	0	30	0	0.2%	0
	5	5	SW of Steamboat Springs	310	80	390	520	910	4	5.0%	0
	5	1	Steamboat Springs Area	60	0	60	0	60	0	0.3%	0
	6	2	Steamboat Springs Area	540	90	630	990	1,620	6	8.9%	0
	6	1	NE of Steamboat Springs	1,110	30	1,140	170	1,310	5	7.2%	0
7	2	E of Steamboat Springs	660	140	800	1,070	1,870	7	10.2%	2	
7	1	SE of Steamboat Springs	710	40	750	440	1,190	5	6.5%	0	
8	2	E of Oak Creek	420	70	490	110	600	2	3.3%	0	
<b>Subtotal</b>				<b>10,600</b>	<b>1,690</b>	<b>12,290</b>	<b>5,990</b>	<b>18,280</b>	<b>72</b>		<b>44</b>
<b>Northwest Region Transit Demand Total</b>				<b>40,540</b>	<b>5,730</b>	<b>46,270</b>	<b>20,120</b>	<b>66,390</b>	<b>260</b>		<b>236</b>

Source: Based on 2000 Census Data; LSC, 2003.

**Table II-2**  
**2030 Estimated Public Transit Demand using the TCRP Method**  
**Northwest Region - based on Permanent Population**

County	Census Tract	Census Block Group	Area Description	Estimated Annual Passenger-Trip Demand					Estimated Daily Transit Demand		Daily Demand Density (Trips per Sq. Mile per Day)
				Elderly	Mobility Limited	Elderly + Mobility Limited	General Public	TOTAL	#	%	
Grand	1	1	West Grand County	2,310	150	2,460	800	3,260	13	9.1%	0
	1	2	Kremmling Area	2,580	390	2,970	1,870	4,840	19	13.6%	4
	2	1	NE Grand County	5,030	90	5,120	1,470	6,590	26	18.5%	0
	2	2	E Central Grand County	6,510	800	7,310	2,820	10,130	40	28.4%	0
	2	3	Granby Area	3,000	590	3,590	1,360	4,950	19	13.9%	8
	2	4	SE Grand County	2,780	660	3,440	2,420	5,860	23	16.4%	0
<b>Subtotal</b>				<b>22,210</b>	<b>2,680</b>	<b>24,890</b>	<b>10,740</b>	<b>35,630</b>	<b>140</b>		<b>13</b>
Jackson	9556	1	Jackson County - rural	1,090	60	1,150	300	1,450	6	34.5%	0
	9556	2	Walden Area	1,330	250	1,580	1,170	2,750	11	65.5%	12
<b>Subtotal</b>				<b>2,420</b>	<b>310</b>	<b>2,730</b>	<b>1,470</b>	<b>4,200</b>	<b>16</b>		<b>12</b>
Moffat	1	1	Central Moffat County	720	40	760	510	1,270	5	4.8%	0
	1	2	W Moffat County	550	90	640	470	1,110	4	4.2%	0
	2	1	NE Moffat County	410	0	410	130	540	2	2.1%	0
	2	2	SE Moffat County	480	0	480	200	680	3	2.6%	0
	3	1	NE of Craig	580	0	580	90	670	3	2.5%	0
	3	2	NW of Craig	920	190	1,110	1,350	2,460	10	9.3%	0
	3	3	S of Craig	1,150	180	1,330	40	1,370	5	5.2%	0
	4	1	SW Craig Area	330	100	430	0	430	2	1.6%	5
	4	2	NW Craig Area	430	150	580	150	730	3	2.8%	3
	4	3	W Craig Area	1,120	290	1,410	250	1,660	7	6.3%	11
	4	4	Central Craig	2,760	190	2,950	1,660	4,610	18	17.5%	55
	4	5	W Craig Area	1,140	160	1,300	370	1,670	7	6.3%	14
	5	1	SE Craig Area	0	0	0	0	0	0	0.0%	0
	5	2	NE Craig Area	740	200	940	590	1,530	6	5.8%	24
	5	3	NE Craig Area	870	50	920	230	1,150	5	4.4%	3
	5	4	E Craig Area	1,230	460	1,690	630	2,320	9	8.8%	19
	5	5	E Craig Area	700	340	1,040	320	1,360	5	5.2%	15
5	6	Central Craig	500	270	770	470	1,240	5	4.7%	22	
5	7	Central Craig	1,080	190	1,270	250	1,520	6	5.8%	33	
<b>Subtotal</b>				<b>15,710</b>	<b>2,900</b>	<b>18,610</b>	<b>7,710</b>	<b>26,320</b>	<b>103</b>		<b>204</b>
Rio Blanco	9511	1	E Rio Blanco County	930	0	930	240	1,170	5	8.5%	0
	9511	2	Central Rio Blanco County	1,870	120	1,990	580	2,570	10	18.6%	0
	9511	3	Meeker Area	1,740	160	1,900	1,360	3,260	13	23.6%	39
	9511	4	W Meeker Area	1,870	240	2,110	450	2,560	10	18.5%	1
	9512	1	W Rio Blanco County	170	0	170	20	190	1	1.4%	0
	9512	2	N Rangely Area	1,150	100	1,250	410	1,660	7	12.0%	2
	9512	3	S Rangely Area	1,280	210	1,490	940	2,430	10	17.6%	2
<b>Subtotal</b>				<b>9,010</b>	<b>830</b>	<b>9,840</b>	<b>4,000</b>	<b>13,840</b>	<b>54</b>		<b>44</b>

**Table II-2, continued**  
**2030 Estimated Public Transit Demand using the TCRP Method**  
**Northwest Region - based on Permanent Population**

County	Census Tract	Census Block Group	Area Description	Estimated Annual Passenger-Trip Demand					Estimated Daily Transit Demand		Daily Demand Density (Trips per Sq. Mile per Day)
				Elderly	Mobility Limited	Elderly + Mobility Limited	General Public	TOTAL	#	%	
Routt	1	1	NE of Steamboat Springs	780	40	820	0	820	3	2.7%	0
	1	2	NW of Steamboat Springs	1,050	250	1,300	90	1,390	5	4.5%	0
	1	3	NW Routt County	440	110	550	100	650	3	2.1%	0
	2	1	Hayden Area	1,200	490	1,690	620	2,310	9	7.5%	3
	2	2	S Hayden Area	810	130	940	520	1,460	6	4.7%	1
	3	1	SW Routt County	160	40	200	90	290	1	0.9%	0
	3	2	Area NE of Oak Creek	680	150	830	210	1,040	4	3.4%	0
	3	3	Area NW of Oak Creek	1,100	120	1,220	440	1,660	7	5.4%	0
	3	4	Oak Creek Area	560	80	640	440	1,080	4	3.5%	3
	4	1	N of Steamboat Springs	390	0	390	70	460	2	1.5%	0
	4	2	NW Steamboat Springs	470	420	890	920	1,810	7	5.9%	2
	4	3	N Steamboat Springs	630	130	760	0	760	3	2.5%	0
	5	1	Steamboat Springs	1,630	130	1,760	540	2,300	9	7.5%	3
	5	2	Steamboat Springs	370	50	420	350	770	3	2.5%	17
	5	3	Steamboat Springs	1,140	0	1,140	350	1,490	6	4.8%	40
	5	4	W of Steamboat Springs	60	0	60	0	60	0	0.2%	0
	5	5	SW of Steamboat Springs	550	140	690	940	1,630	6	5.3%	0
	5	1	Steamboat Springs Area	100	0	100	0	100	0	0.3%	0
	6	2	Steamboat Springs Area	950	160	1,110	1,770	2,880	11	9.4%	1
	6	1	NE of Steamboat Springs	1,830	50	1,880	280	2,160	8	7.0%	0
7	2	E of Steamboat Springs	1,270	280	1,550	2,100	3,650	14	11.9%	4	
7	1	SE of Steamboat Springs	1,170	60	1,230	740	1,970	8	6.4%	0	
<i>Subtotal</i>				17,340	2,830	20,170	10,570	30,740	121		74
<b>Northwest Region Transit Demand Total</b>				<b>66,690</b>	<b>9,550</b>	<b>76,240</b>	<b>34,490</b>	<b>110,730</b>	<b>434</b>		<b>346</b>



**Program Trip Demand**

The methodology for forecasting demand for program-related trips involves two factors.

- Determining the number of participants in each program.
- Applying a trip rate per participant using TCRP demand methodology.

The program demand data for the Northwest Region was taken from reports released by Head Start and Mental Health Services for fiscal year 2002. The participant numbers were reported by individual agencies and are also available through the Region 8 Head Start office and the Colorado Department of Human Services. The existing program demand estimates are approximately 581,072 annual trips for the Northwest Region, which has increased approximately 20,000 trips from 1999. These data are shown in Table II-3.

Table II-3 2002 Annual Program-Trip Need Estimates					
County	Participants		Need Estimate		Total Program - Trip Need
	Head Start	Mental Health Services	Head Start	Mental Health Services	
Grand	0	268	0	92,996	92,996
Jackson	0	56	0	19,432	19,432
Moffat	39	548	10,257	190,156	200,413
Rio Blanco	0	280	0	97,160	97,160
Routt	0	493	0	171,071	171,071
<b>TOTAL</b>					<b>581,072</b>

*Source: Region 8 Head Start, 2003; CO Department of Human Services, 2002 data.*

**Summary of TCRP Methodology**

Combining the program estimates and non-program estimates—the total existing *non-peak* transit demand for the Northwest Region, using the TCRP Methodology, is approximately 647,462 annual trips.

**TRANSIT NEEDS AND BENEFITS STUDY (TNBS)**



The Colorado Department of Transportation completed a Transit Needs and Benefits Study (TNBS) for the entire state in 1999. An update of the existing transit need was performed in 2000 using 1999 data, which replaced the 1996 data from the original study. Transit need estimates were developed for the entire state, for each region, and on a county-by-county basis.

The unmet need estimates in the TNBS incorporated needs related to households without transportation, seniors, persons with disabilities, and resorts. Program trips for the Intermountain Region are those transportation needs associated with specific programs



for mental health services (such as Head Start, Development Services programs, Senior Nutrition, or Sheltered Workshop programs) reported by the Colorado Department of Human Services.

The LSC Team updated the TNBS transit need estimates using the recently released 2000 census numbers. Table II-4 provides a summary of the needs using the 1996, 1999, and 2000 data. One notation for the needs table is that the Census 2000 collected disability information differently than in previous years. The actual numbers reported for 2000 were much higher than those reported in the 1990 Census. The LSC Team believes the increase is due to the simplified questioning procedure for the 2000 census.

<b>Table II-4</b>			
<b>TNBS Updated Transit Need Estimates – NW Region</b>			
<b>Transit Category</b>	<b>1996</b>	<b>1999</b>	<b>2002</b>
Rural General Public	381,420	433,966	547,482
Disabled	1,770	2,100	5,730
Program Trips	561,713	561,713	581,072
Urban Area	n/a	n/a	n/a
Resort Area	5,791,978	5,985,033	5,985,033
<b>Annual Need</b>	<b>6,736,881</b>	<b>6,982,812</b>	<b>7,119,317</b>
<i>Annual Trips Provided</i>	<i>630,000</i>	<i>1,881,391</i>	<i>2,400,168</i>
Need Met (%)	9%	27%	34%
Unmet Need (%)	91%	73%	66%

Source: LSC, 2003.

## Unmet Needs

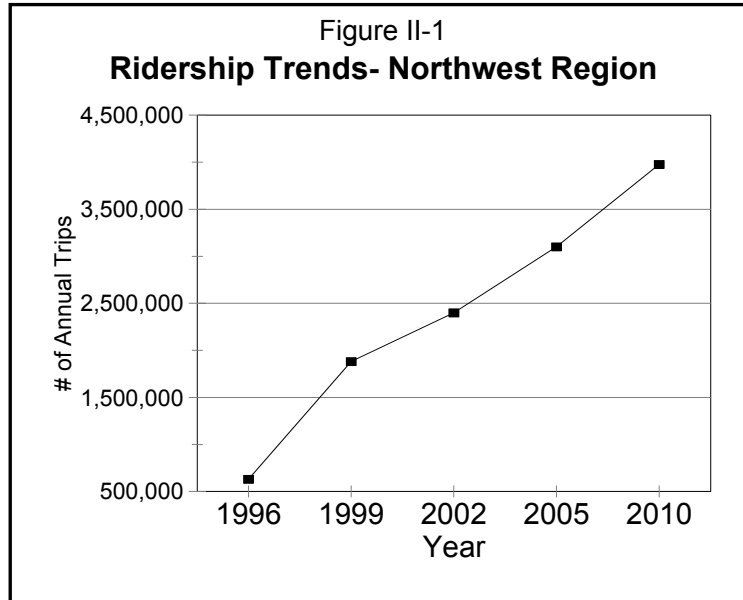
The updated annual transit need estimates for the Northwest Region were 547,482 trips for the general public including youth and seniors, 5,730 trips for persons with disabilities, and 581,072 program trips. The total transit need in 2002 for the Northwest Region is estimated at 7,119,317 annual trips. The table indicates that approximately 34 percent of the existing transit need is being met with 66 percent of the transit need for the region unmet.

The TNBS approach used a combination of methodologies and aggregated the need for the Northwest Region. However, the approach used factors based on statewide characteristics and is not specific to each of the five rural and resort counties. The TNBS level of need should be used as a guideline to the level of need and as a comparison for the other methodologies.

## RIDERSHIP TRENDS

Another approach to looking at short-term transit demand is to evaluate recent trends in ridership. This approach is valid in areas where there are existing transit services such in the Northwest Region. Annual ridership data were presented in Technical Memorandum #1 for the transit providers. Figure II-1 shows the past ridership trends and ridership projections based on recent trends for the Northwest

Region. This section is based on existing ridership and is projected to year 2010. The ridership trends and projections *do not* estimate the transit need within the study area.



As can be seen in this graph, the transit ridership is expected to increase in the future based on recent trends. Much of the transit demand pertains to the number of tourists and visitors to the resort areas and to the increases in population for the study area. Transit ridership for year 2005 is estimated at approximately 3,100,000 and for 2010 is estimated at 4,000,000 annual trips for the Northwest Region.

This chapter presents a brief summary of the unmet need based on data from the previous Technical Memorandum #1. It is the intent of the LSC Team to have each TAC member thoroughly review this document and submit any changes, corrections, or additions to LSC.