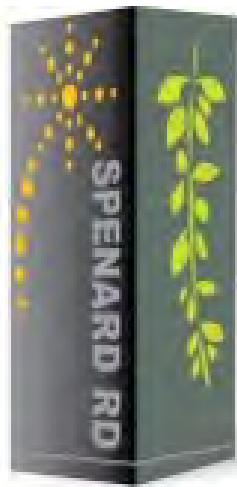


SPENARD ROAD RECONSTRUCTION
PHASE II
HILLCREST DRIVE TO BENSON BOULEVARD
PM&E PROJECT NO. 03-022B



SPENARD ROAD
Reconstruction

TRAFFIC PROJECTIONS

DRAFT
JANUARY 2016

Prepared by:



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Prepared for:



Municipality of Anchorage
4700 Elmore Road
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**Spenard Road Reconstruction Phase II
Hillcrest Drive to Benson Boulevard
MOA Project No. 03-22B**

Prepared For:

Municipality of Anchorage
Project Management and Engineering Department
4700 Elmore Road, Anchorage, AK 99507

Prepared By:

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Surveyors Engineers Planners
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NOTICE TO USERS

This Report reflects the thinking and design decisions, at the time of publication. Changes frequently occur during the evolution of the design process. Persons who may rely on the information contained in this document should consult with the Municipality of Anchorage, Project Management & Engineering Department for the most current design. Please contact Mr. John Smith, Project Manager at 343-8422 for this information.

TABLE OF CONTENTS

NOTICE TO USERS	I
TABLE OF CONTENTS	II
1.0 Traffic Projections	1
1.1 DESIGN YEAR	1
1.2 EXISTING FACILITIES	1
1.3 FUTURE TRAFFIC VOLUMES	1
1.4 FUTURE TRAFFIC VOLUMES	3
1.5 MAJOR CROSS STREETS	7
1.6 MAJOR CROSS STREETS	7
2.0 Spenard Road Corridor Discussion	11
3.0 Traffic Projection Recommendations	12

TABLE OF FIGURES

Figure 1 2013 AADT Volumes.....	2
Figure 2 Historic Growth Rates 2008-2013	4
Figure 3 Historic Growth Rates 2003-2013	5
Figure 4 Historic Growth Rates 1993-2013	6
Figure 5 Benson/NLB/Fireweed Historic Growth Rates 2008-2013	8
Figure 6 Benson/NLB/Fireweed Historic Growth Rates 2003-2013	9
Figure 7 Benson/NLB/Fireweed Historic Growth Rates 1993-2013	10

TABLE OF TABLES

Table 1 - Spenard Road Historic Annual Growth Rates	3
Table 2 - Spenard Road Trend Line Growth Rates	3
Table 3 - Major Cross Street Historic Growth Rates.....	7
Table 4 - Major Cross Street Trend Line Growth Rates	7
Table 5 - AMATS Projected Annual Growth Rates 2013-2035.....	7
Table 6 - AADT of 3 Lane Roads in Anchorage	11
Table 7 - Spenard Road Growth Rates and Traffic Projections.....	12
Table 8 - Major Cross Street Growth Rates and Traffic Projections.....	12

1.0 TRAFFIC PROJECTIONS

The Spenard Road project started in 2000 as a Highway Safety Improvement Project (HSIP) to address pedestrian, bicycle, and motorist safety issues. The HSIP process included the development of two studies, the Traffic and Safety Analysis and Engineering Analysis Report. To address safety concerns, both studies recommended converting the current 4-lane section between Northern Lights Boulevard and Hillcrest Drive to a 3-lane section, one lane in each direction with a continuous two-way center left turn lane (CTWLTL). To reassess the HSIP recommendations and upgrade the road to current MOA arterial standards, new traffic projections are required.

1.1 DESIGN YEAR

For road reconstruction projects the design year is the initial construction year plus 20 years. The construction year for Spenard Road Phase II, Hillcrest Drive to Benson Boulevard, is anticipated to be 2017. Consequently, the design year and traffic projection will be for year 2037.

1.2 EXISTING FACILITIES

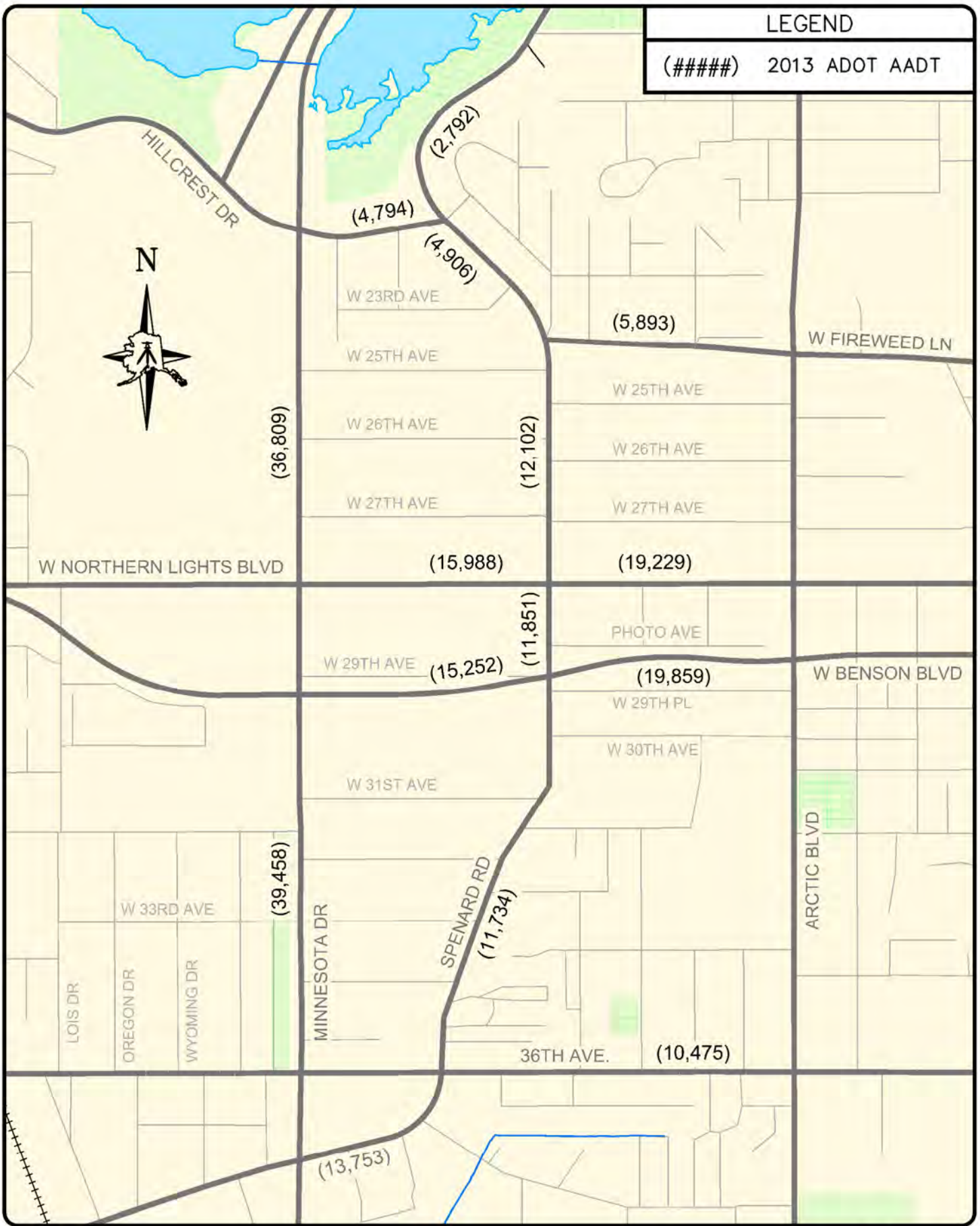
The Alaska Department of Transportation and Public Facilities (ADOT&PF) publishes the Annual Traffic Volume Report that includes Average Annual Daily Traffic (AADT) volumes for road throughout Alaska. AADT is the volume of traffic on a segment of road each day averaged over the entire year. Annual growth rates were determined from this data for individual road segments for 5-, 10-, and 20-year time frames. Figure 1 shows the 2013 published AADT volumes for Spenard Road.

Future AADT projections were based on an analysis of past historical growth patterns of Spenard Road and the Anchorage Metropolitan Transportation Solutions (AMATS) 2035 transportation model projections.

1.3 FUTURE TRAFFIC VOLUMES

The current MOA project area extends from Benson Boulevard to Hillcrest Drive. To assist in the projection analysis, Spenard Road project corridor was divided into four segments to best represent current traffic patterns. The road segments are bound by the major signalized intersections of Benson Boulevard, Northern Lights Boulevard, and Fireweed Lane. The traffic projection assessments were developed for the following segments:

- 36th Avenue to Benson Boulevard;
- Benson Boulevard to Northern Lights Boulevard;
- Northern Lights Boulevard to Fireweed Lane; and
- Fireweed Lane to Hillcrest Drive.



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SPENARD ROAD RECONSTRUCTION PHASE II
HILLCREST DR. TO BENSON BLVD.
 MOA Project No. 03-022B

2013 ANNUAL AVERAGE DAILY TRAFFIC

DRAWN BY: DAJ
 CHECKED BY: LLB

FIGURE 1

DATE: 1/8/2016
 SCALE: 1"=700'

1

Future Traffic Volumes

Twenty years of historic AADT data was used to develop the historic annual growth rates for Spenard Road. Data used in determining past historical growth rates was obtained from published ADOT&PF Central Region Traffic Volume Reports. Published reports can be found on ADOT&PF's website at http://www.dot.alaska.gov/stwdp/ing/transdata/traffic_reports.shtml. The reports are a compilation of traffic data collected, reviewed and analyzed by the Highway Data Section of ADOT&PF and approved by the Federal Highways Administration.

Historic growth rates for three time periods were developed, 1993-2013 (long-term), 2003-2013 (mid-term) and 2008-2013 (short-term) for each road segment. From this data, 20-, 10-, and 5-year growth trend overviews were developed. The historic annual growth rate is estimated by using the beginning year AADT and ending year AADT for each of the three time periods. Table 1 provides the historic annual growth rates during the three time periods for each segment.

Table 1 - Spenard Road Historic Annual Growth Rates

Year	Segment				Average
	36 th Ave to Benson	Benson to NLB	NLB to Fireweed	Fireweed to Hillcrest	
2008-2013	-0.30%	-1.55%	1.23%	-4.62%	-1.31%
2003-2013	-1.52%	-1.70%	-1.16%	-4.60%	-2.25%
1993-2013	-0.77%	-1.10%	-0.80%	-0.90%	-0.89%
<i>Average</i>	<i>-0.86%</i>	<i>-1.45%</i>	<i>-0.24%</i>	<i>-3.37%</i>	

Growth rates based on linear trend lines of historic AADT were also developed for the same time periods and road segments. Linear trend lines provide a means to determine the statistical confidence in the underlying data. Table 2 provides the linear annual growth rates during the three time periods for each segment.

Table 2 - Spenard Road Trend Line Growth Rates

Year	Segment				Average
	36 th Ave to Benson	Benson to NLB	NLB to Fireweed	Fireweed to Hillcrest	
2008-2013	0.05%	-3.95%	1.30%	-3.33%	-1.48%
2003-2013	-1.59%	-1.59%	-1.91%	-3.56%	-2.16%
1993-2013	-1.13%	-1.12%	-0.96%	-0.30%	-0.88%
<i>Average</i>	<i>-0.89%</i>	<i>-2.22%</i>	<i>-0.52%</i>	<i>-2.40%</i>	

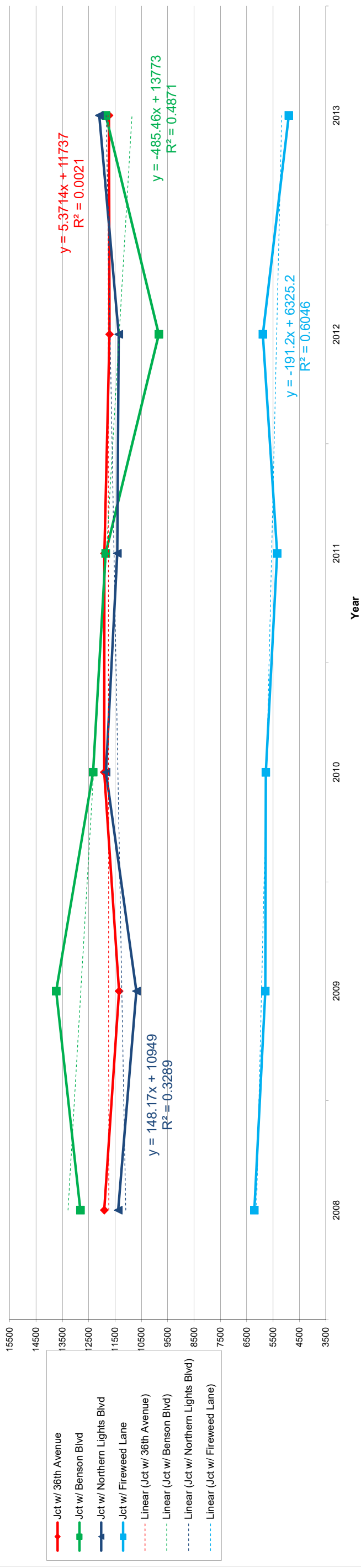
Figures 2 through 4 show the graphical representation of the historic traffic trends over 5-, 10-, and 20-year periods

134310 Spenard Rd

Design Designation Studies

		ANNUAL AVERAGE DAILY TRAFFIC																				
MILE	DESCRIPTION	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
1.48	Jct w/ Minnesota Drive	15848	16000	17000	17000	15546	16850	16608	16400	16350	19975	20130	19910	19910	16592	16310	14794	15689	14785	14379	13440	13753
1.67	Jct w/ 36th Avenue	13700	13700	14730	14700	13200	14070	14570	14390	12503	13560	13670	12904	12840	13939	11779	11912	11352	11914	11906	11714	11734
2.10	Jct w/ Benson Blvd	14776	12372	15204	13050	13206	17066	13000	13748	12638	13652	14065	13210	11843	11580	12507	12817	13737	12335	11862	9841	11851
2.19	Jct w/ Northern Lights Blvd	14200	13441	15000	12800	12683	13750	14230	11817	11780	12080	13605	13460	13390	12481	13695	11383	10692	11847	11416	11366	12102
2.44	Jct w/ Fireweed Lane	5884	5965	6498	5211	5399	5280	6205	8056	7161	8203	7854	6726	6690	6688	6349	6214	5797	5780	5349	5890	4906
2.61	Jct w/ Hillcrest Drive	3319	4028	3975	3900	3652	3676	3575	3642	3610	4142	3815	3770	3777	3690	3592	3519	3291	3280	2834	2812	2792

Spenard Rd Historic Growth Rate 2008-2013



HISTORIC GROWTH RATES (Based on Linear Trend Line)

MILE	DESCRIPTION	EQUATION	R ²	TREND LINE VOLUME	GROWTH RATES
				2008	2008 - 2013
1.48	Jct w/ Minnesota Drive	$y = -353.086x + 15709.13$	0.67	15356	-2.41%
1.67	Jct w/ 36th Avenue	$y = 5.371x + 11736.53$	0.00	11742	0.05%
2.10	Jct w/ Benson Blvd	$y = -485.457x + 13772.93$	0.49	13287	-3.95%
2.19	Jct w/ Northern Lights Blvd	$y = 148.171x + 10949.07$	0.33	11097	1.30%
2.44	Jct w/ Fireweed Lane	$y = -191.2x + 6325.2$	0.6	6134	-3.33%
2.61	Jct w/ Hillcrest Drive	$y = -157.657x + 3639.8$	0.88	3482	-5.00%

HISTORIC GROWTH RATES (Based on Beginning Year and Ending Year)

MILE	DESCRIPTION	BEGIN YEAR	BEGIN VOLUME	END YEAR	END VOLUME	GROWTH RATE
1.48	Jct w/ Minnesota Drive	2008	14794	2013	13753	-1.45%
1.67	Jct w/ 36th Avenue	2008	11912	2013	11734	-0.30%
2.10	Jct w/ Benson Blvd	2008	12817	2013	11851	-1.55%
2.19	Jct w/ Northern Lights Blvd	2008	11383	2013	12102	1.23%
2.44	Jct w/ Fireweed Lane	2008	6214	2013	4906	-4.62%
2.61	Jct w/ Hillcrest Drive	2008	3519	2013	2792	-4.52%

* Growth rates listed are for years that data is available.

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OBSERVATIONS:

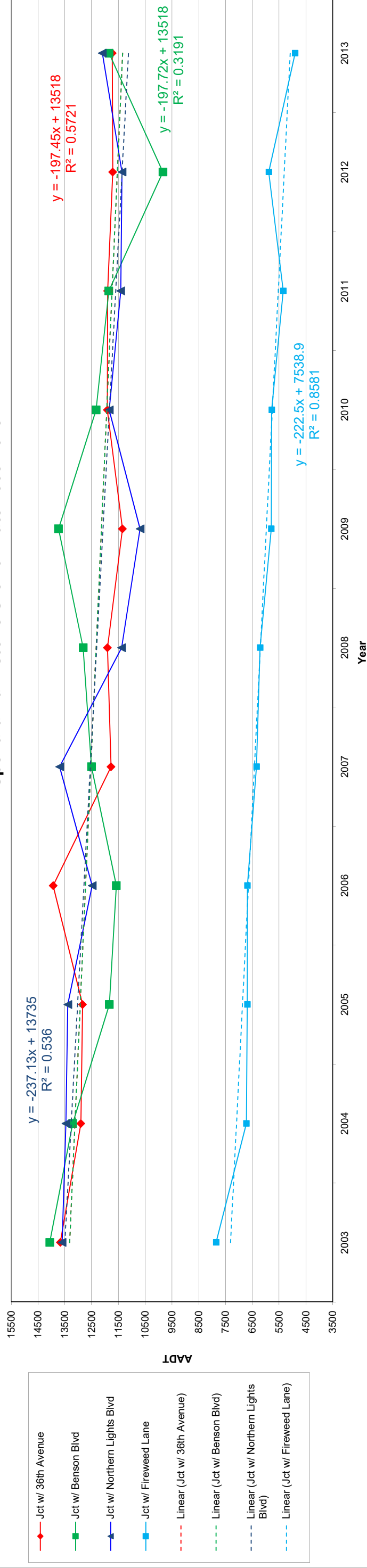
Figure 2

Design Designation Studies

134310 Spenard Rd

		ANNUAL AVERAGE DAILY TRAFFIC																				
MILE	DESCRIPTION	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
1.48	Jct w/ Minnesota Drive	15848	16000	17000	17000	15546	16850	16608	16400	16350	19975	20130	19910	19910	16592	16310	14794	15689	14785	14379	13440	13753
1.67	Jct w/ 36th Avenue	13700	13700	14730	14700	13200	14070	14570	14390	12503	13560	13670	12904	12840	13939	11779	11912	11352	11914	11906	11714	11734
2.10	Jct w/ Benson Blvd	14776	12372	15204	13050	13206	17066	13000	13748	12638	13652	14065	13210	11843	11580	12507	12817	13737	12335	11862	9841	11851
2.19	Jct w/ Northern Lights Blvd	14200	13441	15000	12800	12683	13750	14230	11817	11780	12080	13605	13460	13390	12481	13695	11383	10692	11847	11416	11366	12102
2.44	Jct w/ Fireweed Lane	5884	5965	6498	5211	5399	5280	6205	8056	7161	8203	7854	6726	6690	6688	6349	6214	5797	5780	5349	5890	4906
2.61	Jct w/ Hillcrest Drive	3319	4028	3975	3900	3652	3676	3575	3642	3610	4142	3815	3770	3777	3690	3592	3519	3291	3280	2834	2812	2792

Spenard Rd Historic Growth Rate 2003-2013



HISTORIC GROWTH RATES (Based on Linear Trend Line)

MILE	DESCRIPTION	EQUATION	R ²	TREND LINE VOLUME		GROWTH RATES	
				2003	2013	2003 - 2013	
1.48	Jct w/ Minnesota Drive	$y = -714.482x + 20622.55$	0.88	19908	12763	-4.35%	
1.67	Jct w/ 36th Avenue	$y = -197.445x + 13517.76$	0.57	13320	11346	-1.59%	
2.10	Jct w/ Benson Blvd	$y = -197.718x + 13517.98$	0.32	13320	11343	-1.59%	
2.19	Jct w/ Northern Lights Blvd	$y = -237.127x + 13735.22$	0.54	13498	11127	-1.91%	
2.44	Jct w/ Fireweed Lane	$y = -222.5x + 7538.91$	0.86	7316	5091	-3.56%	
2.61	Jct w/ Hillcrest Drive	$y = -117.245x + 4221.29$	0.92	4104	2932	-3.31%	

HISTORIC GROWTH RATES (Based on Beginning Year and Ending Year)

MILE	DESCRIPTION	BEGIN YEAR	BEGIN VOLUME	END YEAR	END VOLUME	GROWTH RATE
1.48	Jct w/ Minnesota Drive	2003	20130	2013	13753	-3.74%
1.67	Jct w/ 36th Avenue	2003	13670	2013	11734	-1.52%
2.10	Jct w/ Benson Blvd	2003	14065	2013	11851	-1.70%
2.19	Jct w/ Northern Lights Blvd	2003	13605	2013	12102	-1.16%
2.44	Jct w/ Fireweed Lane	2003	7854	2013	4906	-4.60%
2.61	Jct w/ Hillcrest Drive	2003	3815	2013	2792	-3.07%

* Growth rates listed are for years that data is available.

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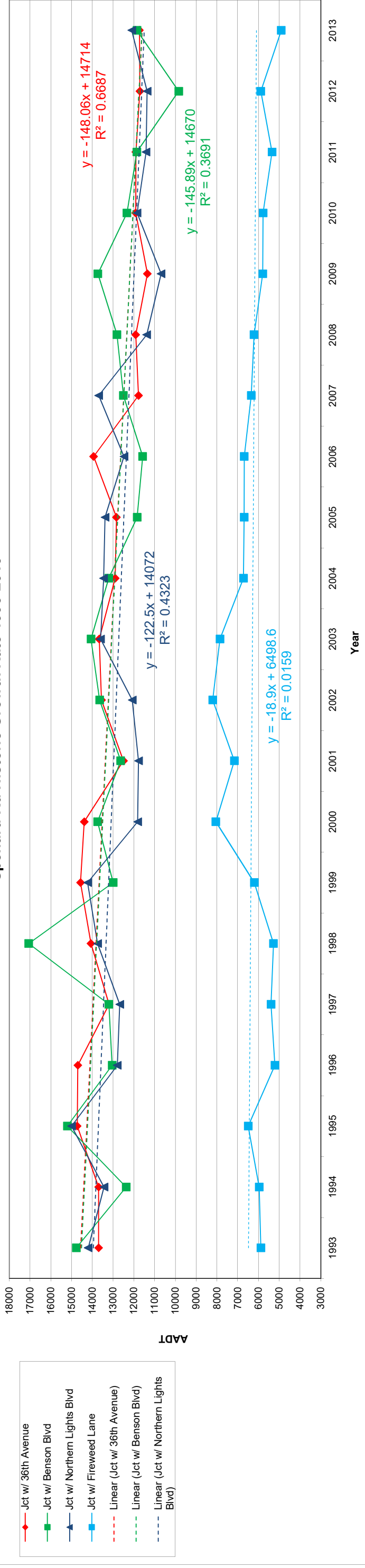
Figure 3

Design Designation Studies

134310 Spenard Rd

		ANNUAL AVERAGE DAILY TRAFFIC																				
MILE	DESCRIPTION	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
1.48	Jct w/ Minnesota Drive	15848	16000	17000	17000	15546	16850	16608	16400	16350	19975	20130	19910	16592	16310	14794	15689	14785	14379	13440	13753	13753
1.67	Jct w/ 36th Avenue	13700	13700	14730	14700	13200	14070	14570	14390	12503	13560	13670	12904	12840	13939	11779	11912	11352	11914	11906	11714	11734
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Spenard Rd Historic Growth Rate 1993-2013



HISTORIC GROWTH RATES (Based on Linear Trend Line)

MILE	DESCRIPTION	EQUATION	R ²	TREND LINE VOLUME		GROWTH RATES	
				1993	2013	1993 - 2013	
1.48	Jct w/ Minnesota Drive	$y = -108.37x + 17728.7$	0.11	17620	15453	-0.65%	
1.67	Jct w/ 36th Avenue	$y = -148.06x + 14713.74$	0.67	14566	11604	-1.13%	
2.10	Jct w/ Benson Blvd	$y = -145.89x + 14669.58$	0.37	14524	11606	-1.12%	
2.19	Jct w/ Northern Lights Blvd	$y = -122.5x + 14072.2$	0.43	13950	11500	-0.96%	
2.44	Jct w/ Fireweed Lane	$y = -18.9x + 6498.61$	0.02	6480	6102	-0.30%	
2.61	Jct w/ Hillcrest Drive	$y = -42.15x + 4020.41$	0.47	3978	3135	-1.18%	

* Growth rates listed are for years that data is available.

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OBSERVATIONS:

HISTORIC GROWTH RATES (Based on Beginning Year and Ending Year)

MILE	DESCRIPTION	BEGIN YEAR	END YEAR	BEGIN VOLUME	END VOLUME	GROWTH RATE
1.48	Jct w/ Minnesota Drive	1993	2013	15848	13753	-0.71%
1.67	Jct w/ 36th Avenue	1993	2013	13700	11734	-0.77%
2.10	Jct w/ Benson Blvd	1993	2013	14776	11851	-1.10%
2.19	Jct w/ Northern Lights Blvd	1993	2013	14200	12102	-0.80%
2.44	Jct w/ Fireweed Lane	1993	2013	5884	4906	-0.90%
2.61	Jct w/ Hillcrest Drive	1993	2013	3319	2792	-0.86%

Figure 4

1.4 MAJOR CROSS STREETS

In addition to Spenard Road, the major intersecting streets historical AADT was also reviewed. The following tables present the historic and linear annual growth rates of the major streets as they approach Spenard Road.

Table 3 - Major Cross Street Historic Growth Rates

Year	Intersection		
	Benson	NLB	Fireweed
2008-2013	-0.29%	-0.49%	-4.39%
2003-2013	-0.87%	0.25%	-5.05%
1993-2013	0.10%	-0.14%	-2.14%

Table 4 - Major Cross Street Trend Line Growth Rates

Year	Intersection		
	Benson	NLB	Fireweed
2008-2013	-0.45%	-062%	-5.23%
2003-2013	-1.27%	-0.58%	-5.34%
1993-2013	0.25%	-0.06%	-1.80%

Figures 5 through 7 show the graphical representation of the historic traffic trends over 5-, 10-, and 20-year periods.

1.5 MAJOR CROSS STREETS

The current AMATS transportation model forecasts traffic to the year 2035. Table 3 presents the project corridor’s 2013 AADT historical data, AMATS 2035 model projections, and the corresponding growth rates.

Table 5 - AMATS Projected Annual Growth Rates 2013-2035

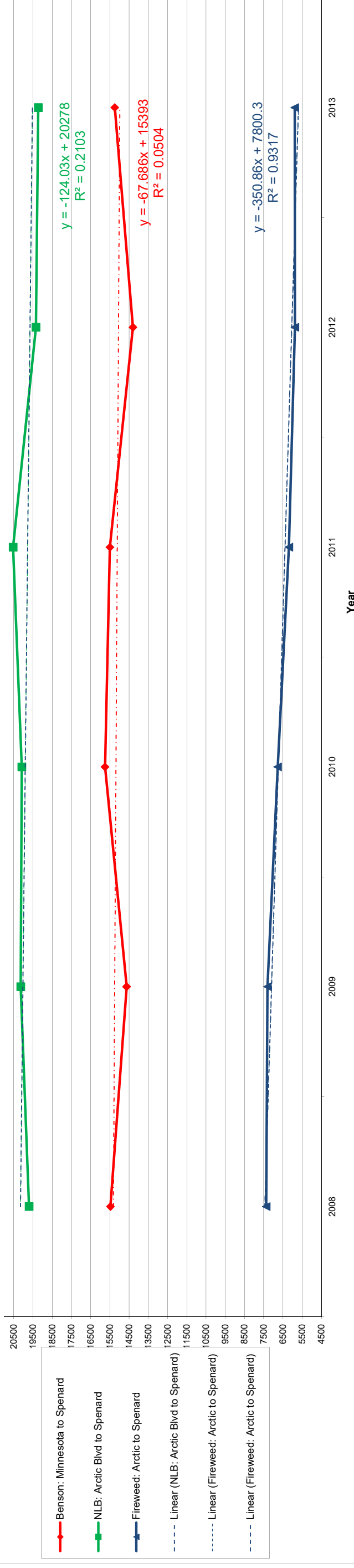
Year	Segment			
	36 th Ave to Benson	Benson to NLB	NLB to Fireweed	Fireweed to Hillcrest
2013 AADT	11,734	11,851	12,102	4,906
AMATS 2035 AADT	9,842	8,838	7,511	3,226
Growth Rate	-0.80%	-1.32%	-2.14%	-1.89%

Design Designation Studies

Benson Blvd / Northern Lights Blvd / Fireweed Ln

		1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
MILE	DESCRIPTION	14947	15000	12271	15602	15900	11508	16387	17082	18320	17069	16641	16460	16762	16390	16267	15478	14635	15759	15504	14307	15252
0.38	Benson: Minnesota to Spenard	19791	20900	20242	20000	19818	19349	21310	21167	21224	21521	18751	21068	20978	23442	20589	19710	20144	20090	20542	19348	19229
5.72	NLB: Arctic Blvd to Spenard	9074	8500	9100	8590	8800	8690	8668	8560	8540	9812	9890	9990	7931	7910	7890	7376	7309	6780	6193	5883	5893
1.00	Fireweed: Arctic to Spenard																					

Historic Growth Rate 2008-2013



HISTORIC GROWTH RATES (Based on Linear Trend Line)

MILE	DESCRIPTION	EQUATION	R ²	TREND LINE VOLUME	GROWTH RATES
0.38	Benson: Minnesota to Spenard	$y = -67.686x + 15392.73$	0.05	2008: 15325 2013: 14987	2008 - 2013 -0.45%
5.72	NLB: Arctic Blvd to Spenard	$y = -124.029x + 20277.93$	0.21	20154 19534	-0.62%
1.00	Fireweed: Arctic to Spenard	$y = -350.857x + 7800.33$	0.93	7449 5695	-5.23%

HISTORIC GROWTH RATES (Based on Beginning Year and Ending Year)

MILE	DESCRIPTION	BEGIN YEAR	BEGIN VOLUME	END YEAR	END VOLUME	GROWTH RATE
0.38	Benson: Minnesota to Spenard	2008	15478	2013	15252	-0.29%
5.72	NLB: Arctic Blvd to Spenard	2008	19710	2013	19229	-0.49%
1.00	Fireweed: Arctic to Spenard	2008	7376	2013	5893	-4.39%

* Growth rates listed are for years that data is available.

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OBSERVATIONS:

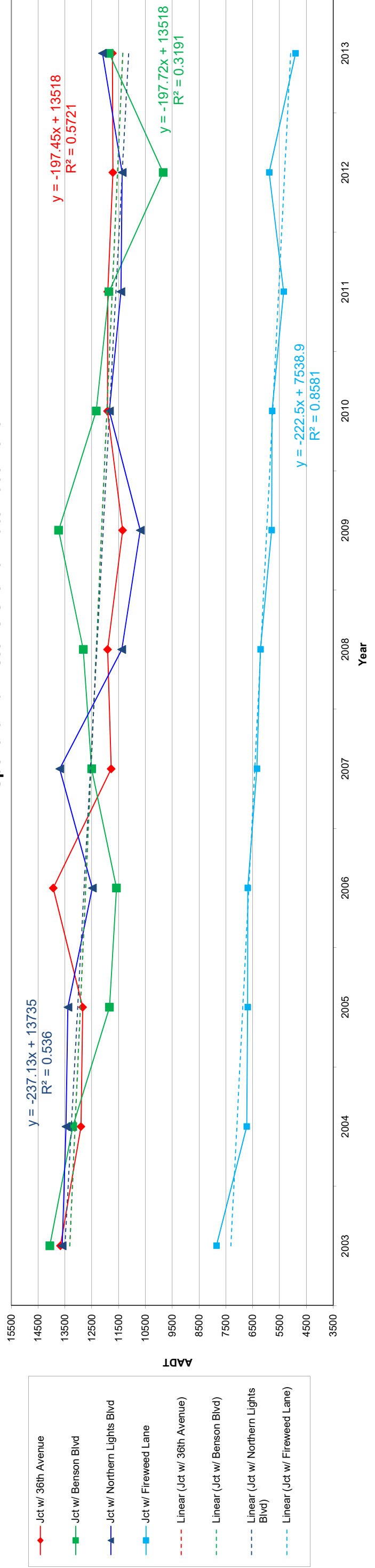
Figure 5

Design Designation Studies

134310 Spenard Rd

		ANNUAL AVERAGE DAILY TRAFFIC																				
MILE	DESCRIPTION	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
1.48	Jct w/ Minnesota Drive	15848	16000	17000	17000	15546	16850	16608	16400	16350	19975	20130	19910	19910	16592	16310	14794	15689	14785	14379	13440	13753
1.67	Jct w/ 36th Avenue	13700	13700	14730	14700	13200	14070	14570	14390	12503	13560	13670	12904	12840	13939	11779	11912	11352	11914	11906	11714	11734
2.10	Jct w/ Benson Blvd	14776	12372	15204	13050	13206	17066	13000	13748	12638	13652	14065	13210	11843	11580	12507	12817	13737	12335	11862	9841	11851
2.19	Jct w/ Northern Lights Blvd	14200	13441	15000	12800	12683	13750	14230	11817	11780	12080	13605	13460	13390	12481	13695	11383	10692	11847	11416	11366	12102
2.44	Jct w/ Fireweed Lane	5884	5965	6498	5211	5399	5280	6205	8056	7161	8203	7854	6726	6690	6688	6349	6214	5797	5780	5349	5890	4906
2.61	Jct w/ Hillcrest Drive	3319	4028	3975	3900	3652	3676	3575	3642	3610	4142	3815	3770	3777	3690	3592	3519	3291	3280	2834	2812	2792

Spenard Rd Historic Growth Rate 2003-2013



HISTORIC GROWTH RATES (Based on Linear Trend Line)

MILE	DESCRIPTION	EQUATION	R ²	TREND LINE VOLUME		GROWTH RATES	
				2003	2013	2003 - 2013	
1.48	Jct w/ Minnesota Drive	$y = -714.482x + 20622.55$	0.88	19908	12763	-4.35%	
1.67	Jct w/ 36th Avenue	$y = -197.445x + 13517.76$	0.57	13320	11346	-1.59%	
2.10	Jct w/ Benson Blvd	$y = -197.718x + 13517.98$	0.32	13320	11343	-1.59%	
2.19	Jct w/ Northern Lights Blvd	$y = -237.127x + 13735.22$	0.54	13498	11127	-1.91%	
2.44	Jct w/ Fireweed Lane	$y = -222.5x + 7538.91$	0.86	7316	5091	-3.56%	
2.61	Jct w/ Hillcrest Drive	$y = -117.245x + 4221.29$	0.92	4104	2932	-3.31%	

HISTORIC GROWTH RATES (Based on Beginning Year and Ending Year)

MILE	DESCRIPTION	BEGIN YEAR	BEGIN VOLUME	END YEAR	END VOLUME	GROWTH RATE
1.48	Jct w/ Minnesota Drive	2003	20130	2013	13753	-3.74%
1.67	Jct w/ 36th Avenue	2003	13670	2013	11734	-1.52%
2.10	Jct w/ Benson Blvd	2003	14065	2013	11851	-1.70%
2.19	Jct w/ Northern Lights Blvd	2003	13605	2013	12102	-1.16%
2.44	Jct w/ Fireweed Lane	2003	7854	2013	4906	-4.60%
2.61	Jct w/ Hillcrest Drive	2003	3815	2013	2792	-3.07%

* Growth rates listed are for years that data is available.

LINEAR TREND LINE ANALYSIS: A linear trend line analysis attempts to find a linear relationship among a given set of data. The equations given on this sheet are for the line that most closely fits the data. The R² factor indicates how well the line correlates to the data. As the R² value approaches 1, the relationship between the best fit line and the data becomes stronger. Growth rates are calculated from the results of the best fit line.

HISTORICAL ANALYSIS: The historical analysis evaluates the change in data between two specified years. An annual compound growth rate calculation is applied to determine the growth rate from one year to another.

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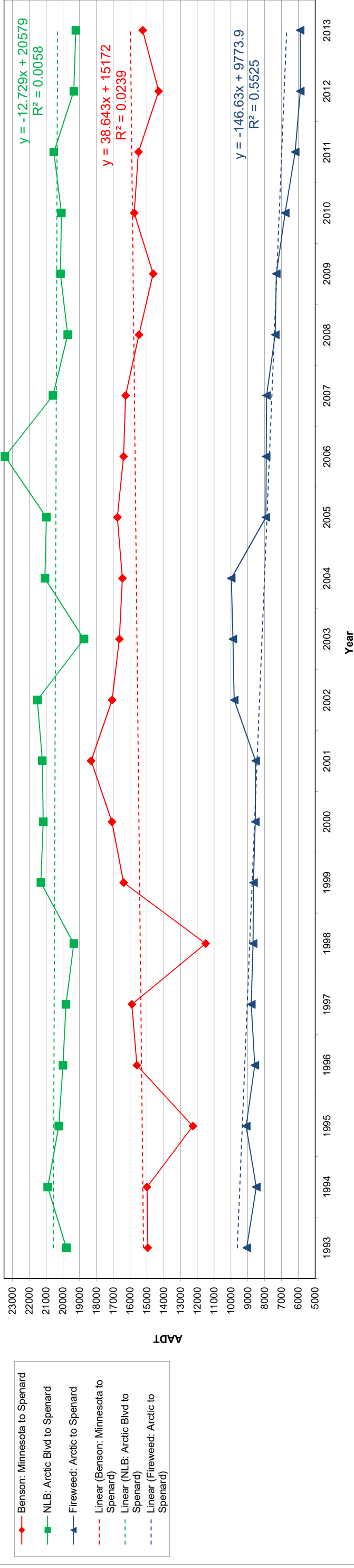
Figure 3

Design Designation Studies

Benson Blvd / Northern Lights Blvd / Fireweed Ln

		ANNUAL AVERAGE DAILY TRAFFIC																				
MILE	DESCRIPTION	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
0.38	Benson: Minnesota to Spenard	14947	15000	12271	15602	15900	11508	16387	17082	18320	17069	16641	16460	16762	16390	16267	15478	14635	15759	15504	14307	15252
5.72	NLB: Arctic Blvd to Spenard	19791	20900	20242	20000	19818	19349	21310	21167	21224	21521	18751	21068	20978	23442	20589	19710	20144	20090	20542	19348	19229
1.00	Fireweed: Arctic to Spenard	9074	8500	9100	8590	8800	8690	8668	8560	8540	9812	9890	9990	7931	7910	7890	7376	7309	6780	6193	5883	5893

Historic Growth Rate 1993-2013



HISTORIC GROWTH RATES (Based on Linear Trend Line)

MILE	DESCRIPTION	EQUATION	R ²	TREND LINE VOLUME		GROWTH RATES
				1993	2013	1993 - 2013
0.38	Benson: Minnesota to Spenard	$y = 38.643x + 15172.12$	0.02	15211	15984	0.25%
5.72	NLB: Arctic Blvd to Spenard	$y = -12.73x + 20578.73$	0.01	20566	20311	-0.06%
1.00	Fireweed: Arctic to Spenard	$y = -146.63x + 9773.86$	0.55	9627	6695	-1.80%

HISTORIC GROWTH RATES (Based on Beginning Year and Ending Year)

MILE	DESCRIPTION	BEGIN YEAR	BEGIN VOLUME	END YEAR	END VOLUME	GROWTH RATE
0.38	Benson: Minnesota to Spenard	1993	14947	2013	15252	0.10%
5.72	NLB: Arctic Blvd to Spenard	1993	19791	2013	19229	-0.14%
1.00	Fireweed: Arctic to Spenard	1993	9074	2013	5893	-2.14%

* Growth rates listed are for years that data is available.

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OBSERVATIONS:

Figure 7

Spenard Road Corridor Discussion

The historic 10- to 20-year growth patterns and future AMATS forecasts are negative for all segments of the roadway within the project corridor. However, in the past 5 years, the Northern Light Boulevard to Fireweed Lane segment has seen a positive 1.2% growth rate. Even with generally negative growth trends, it appears the area is beginning to witness revitalization through renovation of businesses such as REI, Northern Lights Center, Bear's Tooth, Chilkoot Charlies, and Bosco's, to name a few. The *Spenard Corridor Technical Report* dated April 2011 also recognizes this renewal potential by identifying several development catalyst zones, or areas whose existing conditions and/or location is catalytic for future investments and revitalization.

In fact, MOA's investment in Spenard Road must consider anticipated future growth and development in the area during the design life of the project. While traffic trends are generally decreasing, urban street design should attempt to balance the needs and goals of multiple corridor users. These user groups are typically motorists, bicyclists, and pedestrians. Different user groups generally have different goals that many times are in conflict with one another. The proposed 3-lane road section provides a balance that should provide a more user-friendly environment for the stakeholder groups.

Numerous studies have been developed that demonstrate conversion of 4-lane undivided to 3-lane roads with CTWLTLs have both operational and safety benefits. These benefits support motorist and non-motorist alike. However, the conversion benefits can only be realized if future traffic remains below recommended volume thresholds. According to the Federal Highways Administration's *Road Diet Informational Guide*, the recommended upper limit AADT for 3-lane roadways is 20,000 vpd. To exceed this threshold, Spenard Road would need to experience an approximate 2.5% growth rate over the next 20 years.

Anecdotal evidence exists that illustrates higher volume 3-lane road sections can performance well in Anchorage.

Table 6 - AADT of 3 Lane Roads in Anchorage

3-Lane Section	2013 AADT
Mt. View Dr. – Bragaw to Pine	10,740
Arctic Blvd. – Tudor to International	10,617
Arctic Blvd. – Benson to 36 th	11,200
15 th Ave. – C St to Cordova	11,454
Spenard Rd. – Wisconsin to Northwood	13,193
Spenard Rd. – Northwood to Woodland	16,070

2.0 TRAFFIC PROJECTION RECOMMENDATIONS

The project area is predicted to have modest growth through the 20-year design life with the Northern Light Boulevard to Fireweed Lane section of Spenard Road experiencing the greatest growth. Growth along this segment is anticipated to remain at 1%. The remaining segments of Spenard Road and adjoining cross streets are forecasted to grow at 0.5%. A 0.5% growth rate produces design year (2037) traffic volumes that correspond to historic volumes similar to those in early to mid-2000's. The following tables summarize the recommended growth rates and AADT projections for the project.

Table 7 - Spenard Road Growth Rates and Traffic Projections

Segment	Growth Rate	Construction 2017	Mid-Year 2027	Design Year 2037
30 th Ave to Benson	0.5%	11,970	12,590	13,230
Benson to NLB	0.5%	12,090	12,710	13,360
NLB to Fireweed	1.0%	12,600	13,920	15,370
Fireweed to Hillcrest	0.5%	5,010	5,270	5,530

Table 8 - Major Cross Street Growth Rates and Traffic Projections

Segment	Growth Rate	Construction 2017	Mid-Year 2027	Design Year 2037
Benson: Minnesota to Spenard	0.5%	15,560	16,360	17,200
NLB: Arctic to Spenard	0.5%	19,620	20,620	21,680
Fireweed: Arctic to Spenard	0.5%	6,020	6,320	6,650