



APPENDIX A: TRAFFIC MEMO

This memorandum was prepared in order to present traffic analysis for the alternatives Screening #1 - Purpose and Need in more detail than was provided in Chapter 2 of the Geneva Road Environmental Impact Statement and is meant to be used in conjunction with Chapter 2.

The following describes each alternative considered along with tables showing 2030 traffic demand and projected Level of Service (LOS).

NO-ACTION, TSM, AND TRANSIT ALTERNATIVES

No-action Alternative

The No-action Alternative includes maintaining the roadway and associated features in its current roadway configuration. This alternative assumes that short-term minor restoration (safety and maintenance) activities that maintain continued operation of the existing roadway facility would be implemented. This alternative would not include the addition of sidewalk, curb and gutter, shoulder, median, or additional travel lanes, but would allow for the maintenance of the existing facilities.

Transportation System Management (TSM) Alternative

The TSM Alternative includes intersection improvements (such as turn lanes, signal coordination, and optimization), access management to reduce conflicts, and Transportation Demand Management (TDM) activities to reduce traffic, such as employer based efforts (ride-sharing, transit promotion, and staggered or flexible works hours), and community efforts (encouraging walking, biking, and telecommuting). The lane configuration of Geneva Road would remain the same as the No-action Alternative, only additional turn lanes at intersections would be added.

Transit Alternative

The Transit Alternative assumes that public transit system improvements included in the Mountainland Association of Government's (MAG) Regional Transportation Plan (RTP) would be implemented by year 2030. The RTP includes a bus route along the entire length of Geneva Road. This alternative would maintain existing configuration of Geneva Road similar to the No-action Alternative, but would double the frequency of the planned Geneva Road bus route and would provide bus pullouts along Geneva Road at planned bus stops.

Purpose and Need Screening Analysis

Primary Purpose: Improve Regional and Local Traffic Mobility

Year 2030 travel demand and level of service (LOS) for the No-action, TSM, and Transit Alternatives are shown in Table 1. The TSM Alternative would increase the capacity of the roadway by approximately 10 percent. The Transit Alternative would decrease the travel demand by three percent with additional transit usage. None of these alternatives would include additional travel lanes on Geneva Road, thus the majority of Geneva Road would operate with LOS E or F by year 2030; however, some of the segments of Geneva Road which have already been improved to three and five lanes would operate with an acceptable LOS (A-D) in year 2030.

Table 1 2030 Travel Demand and LOS for No-action, TSM, and Transit Alternatives

Segment		# Lanes	No-Action Alternative			TSM Alternative			Transit Alternative		
From	To		Travel Demand (vpd)	LOS D Capacity (vpd)	LOS	Travel Demand (vpd)	LOS D Capacity (vpd)	LOS	Travel Demand (vpd)	LOS D Capacity (vpd)	LOS
I-15 (Center Street in Provo)	1600 West (Center Street in Provo)	5	18,000	32,000	B	18,000	35,100	B	17,460	32,000	B
1600 West (Center Street in Provo)	Geneva Road (Center Street in Provo)	2	15,000	12,100	E	15,000	13,200	E	14,550	12,100	E
Center Street (Provo)	400 North (Provo)	3	13,000	13,700	D	13,000	15,000	C	12,610	13,700	D
400 North (Provo)	550 North (Provo)	2	13,000	12,100	E	13,000	13,200	D	12,610	12,100	E
550 North (Provo)	820 North (Provo)	3	13,000	13,700	D	13,000	15,000	C	12,610	13,700	D
820 North (Provo)	1680 North (Provo)	2	13,000	12,100	E	13,000	13,200	D	12,610	12,100	E
1680 North (Provo)	2000 South (Orem)	2	14,000	12,100	E	14,000	13,200	E	13,580	12,100	E
2000 South (Orem)	1390 South (Orem)	2	27,000	12,100	F	27,000	13,200	F	26,190	12,100	F
1390 South (Orem)	University Parkway (Orem)	3	27,000	13,700	F	27,000	15,000	F	26,190	13,700	F
University Parkway (Orem)	1000 South (Orem)	5	38,000	32,000	E	38,000	35,100	E	36,860	32,000	E
1000 South (Orem)	800 South (Orem)	2	38,000	12,100	F	38,000	13,200	F	36,860	12,100	F
800 South (Orem)	400 South (Orem)	2	34,000	12,100	F	34,000	13,200	F	32,980	12,100	F
400 South (Orem)	200 South (Orem)	2	33,000	12,100	F	33,000	13,200	F	32,010	12,100	F
200 South (Orem)	Center Street (Orem)	3	33,000	13,700	F	33,000	15,000	F	32,010	13,700	F
Center Street (Orem)	200 North (Orem)	2	23,000	12,100	F	23,000	13,200	F	22,310	12,100	F
200 North (Orem)	400 North (Orem)	5	23,000	32,000	C	23,000	35,100	B	22,310	32,000	C
400 North (Orem)	600 North (Orem)	2	30,000	12,100	F	30,000	13,200	F	29,100	12,100	F
600 North (Orem)	800 North (Orem)	3	30,000	13,700	F	30,000	15,000	F	29,100	13,700	F
800 North (Orem)	1600 North (Orem)	3	28,000	13,700	F	28,000	15,000	F	27,160	13,700	F
1600 North (Orem)	200 South (Lindon)	5	35,000	32,000	E	35,000	35,100	D	33,950	32,000	E
200 South (Lindon)	700 North (Lindon)	5	31,000	32,000	D	31,000	35,100	D	30,070	32,000	D

Segment		# Lanes	No-Action Alternative			TSM Alternative			Transit Alternative		
From	To		Travel Demand (vpd)	LOS D Capacity (vpd)	LOS	Travel Demand (vpd)	LOS D Capacity (vpd)	LOS	Travel Demand (vpd)	LOS D Capacity (vpd)	LOS
700 North (Lindon)	700 South (Pleasant Grove)	5	29,000	32,000	D	29,000	35,100	C	28,130	32,000	D
700 South (Pleasant Grove)	State Street (Pleasant Grove)	5	23,000	32,000	C	23,000	35,100	B	22,310	32,000	C

*Shading indicates that Geneva Road segment is able to meet traffic screening criteria



Areas which may be able to achieve LOS D with TSM improvements



LOS A-B



LOS C-D



LOS E-F

IMPROVE OTHER EXISTING/PLANNED ROADWAYS AND BUILD A NEW ROAD ON A NEW LOCATION ALTERNATIVES

Improve Other Existing/Planned Roadways Alternative

This alternative includes an additional travel lane in each direction (above current plans) on I-15, planned East Lake Parkway (Vineyard Connector), planned 3110 West in Provo, State Street, Sandhill Road (Orem), 1200 West (Orem), and Proctor Lane (Pleasant Grove). This alternative would maintain the existing features of Geneva Road, with the addition of bus pullouts, and would investigate adding TSM improvements.

Build a New Road on a New Location Alternative

This alternative includes building a new five-lane roadway on a new location. This alternative was developed to provide a north-south roadway west of I-15 in this portion of Utah County from the proposed East Lake Parkway (Vineyard Connector) to the proposed 3110 West in Provo (connecting these two planned roadways, west of Geneva Road). This alternative would provide two travel lanes in each direction with a permissive left-turn lane, shoulders, curb and gutter, parkstrips, sidewalk, and multi-use trail. This alternative would maintain the existing features of Geneva Road, with the addition of bus pullouts, and would investigate adding TSM improvements.

Purpose and Need Screening Analysis

Primary Purpose: Improve Regional and Local Traffic Mobility

The 2030 travel demand and LOS for the alternatives, Improve Other Existing/Planned Roadways and Build a New Road on a New Location, are shown in Table 2. These alternatives would not make improvements to Geneva Road, thus the majority of Geneva Road would operate with failing LOS (E or F) by year 2030; however, some of the segments of Geneva Road which have already been improved to three and five lanes would operate with an acceptable LOS (A-D) in year 2030.

Table 2 2030 Traffic and LOS for Geneva Road for Improve Existing/Planned Roadways and Build a New Road on a New Location Alternatives

Segment		Improve Existing/Planned Roadways				Build a New Road on a New Location			
From	To	# Lanes	Travel Demand (vpd)	LOS D Capacity	LOS	# Lanes	Travel Demand (vpd)	LOS D Capacity	LOS
I-15 (Center Street in Provo)	1600 West (Center Street in Provo)	5	18,000	32,000	B	5	17,000	32,000	B
1600 West (Center Street in Provo)	Geneva Road (Center St. Provo)	2	15,000	12,100	E	2	14,000	12,100	E
Center Street (Provo)	400 North (Provo)	3	13,000	13,700	D	3	13,000	13,700	D
400 North (Provo)	550 North (Provo)	2	13,000	12,100	E	2	13,000	12,100	E
550 North (Provo)	820 North (Provo)	3	13,000	13,700	D	3	13,000	13,700	D
820 North (Provo)	1680 North (Provo)	2	11,000	12,100	D	2	12,000	12,100	D
1680 North (Provo)	2000 South (Orem)	2	11,000	12,100	D	2	12,000	12,100	D

Segment		Improve Existing/Planned Roadways				Build a New Road on a New Location			
From	To	# Lanes	Travel Demand (vpd)	LOS D Capacity	LOS	# Lanes	Travel Demand (vpd)	LOS D Capacity	LOS
2000 South (Orem)	1390 South (Orem)	2	25,000	12,100	F	2	22,000	12,100	F
1390 South (Orem)	University Parkway (Orem)	3	24,000	13,700	F	3	22,000	13,700	F
University Parkway (Orem)	1000 South (Orem)	5	35,000	32,000	E	5	32,000	32,000	D
1000 South (Orem)	800 South (Orem)	2	33,000	12,100	F	2	30,000	12,100	F
800 South (Orem)	400 South (Orem)	2	33,000	12,100	F	2	30,000	12,100	F
400 South (Orem)	200 South (Orem)	2	27,000	12,100	F	2	28,000	12,100	F
200 South (Orem)	Center Street (Orem)	3	27,000	13,700	F	3	28,000	13,700	F
Center Street (Orem)	200 North (Orem)	2	18,000	12,100	F	2	22,000	12,100	F
200 North (Orem)	400 North (Orem)	5	18,000	32,000	B	5	22,000	32,000	C
400 North (Orem)	600 North (Orem)	2	24,000	12,100	F	2	29,000	12,100	F
600 North (Orem)	800 North (Orem)	3	24,000	13,700	F	3	29,000	13,700	F
800 North (Orem)	1600 North (Orem)	3	26,000	13,700	F	3	29,000	13,700	F
1600 North (Orem)	200 South (Lindon)	5	33,000	32,000	E	5	35,000	32,000	E
200 South (Lindon)	700 North (Lindon)	5	30,000	32,000	D	5	31,000	32,000	D
700 North (Lindon)	700 South (Pleasant Grove)	5	25,000	32,000	C	5	26,000	32,000	C
700 South (Pleasant Grove)	State Street (Pleasant Grove)	5	25,000	32,000	C	5	26,000	32,000	C

*Shading indicates that Geneva Road segment is able to meet traffic screening criteria

THREE, FIVE, AND SEVEN LANE ALTERNATIVES

Three-Lane Geneva Road Alternative

The three-lane Geneva Road Alternative includes improving the existing Geneva Road two-lane cross-sections to three-lanes (one travel lane in each direction with a permissive left-turn lane, shoulders-adequate for bus pullouts and bicyclist use, curb and gutter, parkstrips, sidewalk on one side, and a multi-use trail on the other). Existing three and five-lane cross-sections on Geneva Road would be improved as needed to provide continuous shoulder, curb and gutter, sidewalk, etc.

Five-Lane Geneva Road Alternative

The five-lane Geneva Road Alternative includes improving the existing Geneva Road to five-lanes (two travel lanes in each direction with a permissive left-turn lane, shoulders-adequate for bus pullouts and bicyclist use, curb and gutter, parkstrips, sidewalk on one side, and a multi-use trail on the other).

Seven-Lane Geneva Road Alternative

The seven-lane Geneva Road Alternative includes improving the existing Geneva Road to seven-lanes (three travel lanes in each direction with a permissive left-turn lane, shoulders-adequate for bus pullouts and bicyclist use, curb and gutter, parkstrips, sidewalk on one side, and a multi-use trail on the other).

Purpose and Need Screening Analysis

Primary Purpose: Improve Regional and Local Traffic Mobility

The 2030 travel demand and LOS for the Three, Five, and Seven-Lane Geneva Road Alternatives are shown in Table 3. These alternatives would make improvements to Geneva Road and would thus increase the capacity of the roadway and improve the LOS.

Table 3 2030 Traffic and LOS for Geneva Road for Three, Five, and Seven-Lane Geneva Road Alternatives

Segment		Improve Existing/Planned Roadways				Build a New Road on a New Location			
From	To	# Lanes	Travel Demand (vpd)	LOS D Capacity	LOS	# Lanes	Travel Demand (vpd)	LOS D Capacity	LOS
<div style="border: 1px solid black; width: 100px; height: 20px; display: inline-block;"></div> Areas which may be able to achieve LOS D with TSM improvements					LOS A-B		LOS C-D		LOS E-F

Segment		3-Lane Geneva Road				5-Lane Geneva Road				7-Lane Geneva Road			
From	To	# Lanes	Travel Demand (vpd)	LOS D Capacity	LOS	# Lanes	Travel Demand (vpd)	LOS D Capacity	LOS	# Lanes	Travel Demand (vpd)	LOS D Capacity	LOS
I-15 (Center Street in Provo)	1600 West (Center Street in Provo)	5	18,000	32,000	B	5	18,000	32,000	B	7	18,000	48,300	A
1600 West (Center Street in Provo)	Geneva Road (Center St. Provo)	3	15,000	13,700	E	5	15,000	32,000	A	7	15,000	48,300	A

Segment		3-Lane Geneva Road				5-Lane Geneva Road				7-Lane Geneva Road			
From	To	# Lanes	Travel Demand (vpd)	LOS D Capacity	LOS	# Lanes	Travel Demand (vpd)	LOS D Capacity	LOS	# Lanes	Travel Demand (vpd)	LOS D Capacity	LOS
Center Street (Provo)	400 North (Provo)	3	13,000	13,700	D	5	13,000	32,000	A	7	13,000	48,300	A
400 North (Provo)	550 North (Provo)	3	13,000	13,700	D	5	13,000	32,000	A	7	13,000	48,300	A
550 North (Provo)	820 North (Provo)	3	13,000	13,700	D	5	13,000	32,000	A	7	13,000	48,300	A
820 North (Provo)	1680 North (Provo)	3	13,000	13,700	D	5	13,000	32,000	A	7	13,000	48,300	A
1680 North (Provo)	2000 South (Orem)	3	14,000	13,700	E	5	14,000	32,000	A	7	14,000	48,300	A
2000 South (Orem)	1390 South (Orem)	3	27,000	13,700	F	5	27,000	32,000	C	7	27,000	48,300	B
1390 South (Orem)	University Parkway (Orem)	3	27,000	13,700	F	5	27,000	32,000	C	7	27,000	48,300	B
University Parkway (Orem)	1000 South (Orem)	5	38,000	32,000	E	5	38,000	32,000	E	7	38,000	48,300	C
1000 South (Orem)	800 South (Orem)	3	38,000	13,700	F	5	38,000	32,000	E	7	38,000	48,300	C
800 South (Orem)	400 South (Orem)	3	34,000	13,700	F	5	34,000	32,000	E	7	34,000	48,300	C
400 South (Orem)	200 South (Orem)	3	33,000	13,700	F	5	33,000	32,000	E	7	33,000	48,300	C
200 South (Orem)	Center Street (Orem)	3	33,000	13,700	F	5	33,000	32,000	E	7	33,000	48,300	C
Center Street (Orem)	200 North (Orem)	3	23,000	13,700	F	5	23,000	32,000	C	7	23,000	48,300	B
200 North (Orem)	400 North (Orem)	5	23,000	32,000	C	5	23,000	32,000	C	7	23,000	48,300	B
400 North (Orem)	600 North (Orem)	3	30,000	13,700	F	5	30,000	32,000	D	7	30,000	48,300	B
600 North (Orem)	800 North (Orem)	3	30,000	13,700	F	5	30,000	32,000	D	7	30,000	48,300	B
800 North (Orem)	1600 North (Orem)	3	28,000	13,700	F	5	28,000	32,000	D	7	28,000	48,300	B
1600 North (Orem)	200 South (Lindon)	5	35,000	32,000	E	5	35,000	32,000	E	7	35,000	48,300	C
200 South (Lindon)	700 North (Lindon)	5	31,000	32,000	D	5	31,000	32,000	D	7	31,000	48,300	B
700 North (Lindon)	700 South (Pleasant Grove)	5	29,000	32,000	D	5	29,000	32,000	D	7	29,000	48,300	B