

North Valley Connectors Study

Final Report
January 23, 2002



American Fork
Cedar Fort

Eagle Mountain
Lehi

Lindon
Pleasant Grove

Saratoga Springs
Utah County



Table of Contents

Executive Summary	ES-1
Chapter One - Background and Purpose.....	ES-1
Chapter Two - Alternatives Development and Evaluation	ES-2
Chapter Three - Environmental Screening	ES-2
Chapter Four - North Valley Connectors Recommended Corridors	ES-3
Chapter Five - Public and Agency Involvement.....	ES-3
Chapter Six - Next Steps.....	ES-4
1.0 Background and Purpose	1-1
1.1 Project Study Area	1-1
1.2 Primary Objectives.....	1-2
1.3 Corridor Constraints.....	1-3
1.4 Jurisdictions, Advisory Committees, & Consultant Team.....	1-4
1.5 Growth and Travel Demand Projections.....	1-5
Population Growth.....	1-5
Employment Growth.....	1-6
Travel Demand.....	1-6
1.6 Previous Studies.....	1-8
2.0 Alternatives Development and Evaluation	2-1
2.1 Analysis of Existing Transportation Plans.....	2-1
2.2 Analysis of Transit Alternatives	2-3
2.3 Determination of the Number of Corridors	2-4
One Corridor Alternatives.....	2-4
Two Corridor Alternatives.....	2-4
Three Corridor Alternatives.....	2-5
2.4 Development of Preliminary Corridor Area Options.....	2-5
North Corridor Area Options	2-6
Central Corridor Area Options.....	2-6
South Corridor Area Options.....	2-7
2.5 Screening of Preliminary Corridor Area Options	2-7
North Corridor Area Options	2-7
Central Corridor Area Options.....	2-8
South Corridor Area Options.....	2-8
2.6 Development of Detailed Corridor Area Alternatives.....	2-9
North Corridor Area Alternatives	2-9
Central Corridor Area Alternatives.....	2-10

South Corridor Area Alternatives	2-10
2.7 Evaluation of Detailed Corridor Area Alternatives	2-11
Evaluation Criteria	2-11
Evaluation Matrix	2-13
2.8 Detailed Corridor Area Evaluation Results	2-16
North Corridor Area.....	2-16
Central Corridor Area	2-16
South Corridor Area.....	2-16
2.9 Recommended Corridors	2-16
North Corridor Area Recommended Corridor	2-17
Central Corridor Area Recommended Corridor	2-17
South Corridor Area Recommended Corridor	2-18
3.0 Environmental Screening.....	3-1
3.1 Land Use	3-1
Utility and Railroad Corridors	3-1
Parks and Recreation Facilities.....	3-2
Schools.....	3-2
Open Lands	3-2
Property Ownership	3-2
Proposed Developments.....	3-2
Farmlands and Agricultural Protection Areas.....	3-3
Sensitive Agricultural Production Properties.....	3-3
3.2 Cultural Resources	3-4
Historic Resources	3-4
3.3 Social Conditions	3-4
3.4 Relocations.....	3-5
Mitigation.....	3-6
Hardship Acquisitions.....	3-6
3.5 Pedestrians, Equestrians, and Bicyclists	3-6
School Access	3-6
Trails Issues	3-7
3.6 Air and Water Quality.....	3-7
3.7 Noise	3-7
3.8 Wetlands and Jordan River Crossings	3-8
3.9 Flood Plains	3-10
3.10 Wildlife	3-10
3.11 Threatened and Endangered Species	3-10
4.0 North Valley Connectors Recommended Corridors	4-1
4.1 Alignments.....	4-1
North Corridor Area	4-1
Central Corridor Area	4-1
South Corridor Area	4-2
4.2 Geometric Standards.....	4-2
4.3 Grade Separations (Bridges).....	4-3

4.4	Typical Sections	4-3
4.5	Access Management	4-4
4.6	Planning Level Cost Estimates	4-4
4.7	Implementation Priority	4-5
5.0	Public and Agency Involvement.....	5-1
5.1	Public Meetings	5-1
5.2	Stakeholder Meetings.....	5-1
5.3	Advisory Committee Meetings.....	5-2
5.4	Coordination with City Councils, Planning Commissions and Staff.....	5-2
5.5	Local Newspapers and Newsletters	5-2
5.6	E-mail.....	5-2
5.7	Phone Calls	5-2
5.8	Web Page	5-3
6.0	Next Steps	6-1
6.1	Corridor Preservation.....	6-1
	Corridor Preservation Techniques	6-2
	Coordination with Other Agencies	6-2
	Recent Legislation	6-3
6.2	Action Items for Participating Agencies.....	6-3
	American Fork	6-3
	Lehi	6-4
	Saratoga Springs	6-5
	Eagle Mountain.....	6-5
	Pleasant Grove	6-6
	Lindon.....	6-6
	Utah County.....	6-6
	Mountainland Association of Governments	6-6
	Utah Department of Transportation	6-7
6.3	Preparation of a NEPA Document.....	6-7
	Possible NEPA Analysis Options	6-8
6.4	Conclusions.....	6-8

Appendix A - TAC and PAC Members

Appendix B - Recommended Corridor Geometric Design Standards

Appendix C - Recommended Corridor Planning Level Cost Estimates

Appendix D - Public and Agency Involvement

Appendix E - Corridor Preservation Tools

Appendix F - Corridor Preservation Legislation

List of Tables

Chapter 1	
1-1	2030 Population Projections 1-5
1-2	1998-2000 Population Growth 1-5
1-3	2030 Study Area Employment Projections 1-6
Chapter 2	
2-1	Study Area Composite Master Plan..... 2-2
2-2	NVCS Evaluation Criteria 2-12
2-3	NVCS Detailed Corridor Impact Summary..... 2-14
2-4	NVCS Detailed Corridor Evaluation Results 2-15
Chapter 3	
3-1	Possible Relocations 3-5
3-2	Noise Abatement Criteria 3-8

List of Figures

Chapter 1	
1-1	Project Study Area
Chapter 2	
2-1	Composite North Valley Major Street Plan
2-2	2030 Level of Service - Composite North Valley Major Street Plan
2-3	2030 Level of Service - North (7 Lanes) Alternative
2-4	2030 Level of Service - Central (7 Lanes) Alternative
2-5	2030 Level of Service - South (7 Lanes) Alternative
2-6	2030 Level of Service - North (7 Lanes) and Central (7 Lanes) Alternative
2-7	2030 Level of Service - North (7 Lanes) and South (7 Lanes) Alternative
2-8	2030 Level of Service - Central (7 Lanes) and South (7 Lanes) Alternative
2-9	2030 Level of Service - North (3 Lanes), Central (5 Lanes) and South (7 Lanes) Alternative
2-10	2030 Level of Service - North (3 Lanes), Central (7 Lanes) and South (5 Lanes) Alternative
2-11	2030 Level of Service - North (5 Lanes), Central (3 Lanes) and South (3 Lanes) Alternative
2-12	2030 Level of Service - North (5 Lanes), Central (3 Lanes) and South (5 Lanes) Alternative
2-13	2030 Level of Service - North (5 Lanes), Central (5 Lanes) and South (3 Lanes) Alternative
2-14	2030 Level of Service - North (5 Lanes), Central (5 Lanes) and South (5 Lanes) Alternative
2-15	2030 Level of Service - North (5 Lanes), Central (7 Lanes) and South (3 Lanes) Alternative

- 2-16 Preliminary Corridor Area Options
- 2-17 Preliminary Corridor Area Options - Screening Results
- 2-18 Detailed Corridor Development Areas
- 2-19 Detailed Corridor Area Alternatives
- 2-20 Detailed Corridor Area Screening Results
- 2-21 Recommended Corridors

Chapter 3

- 3-1 Land Uses
- 3-2 Regionally Significant Trails
- 3-3 Wetlands

Chapter 4

- 4-1 North Corridor Recommended Alternative
- 4-2 Central Corridor Recommended Alternative
- 4-3 South Corridor Recommended Alternative
- 4-4 Recommended Typical Sections

List of Acronyms

The following acronyms are used in the report:

AASHTO	American Association of State Highway and Transportation Officials
COE	United States Army Corps of Engineers
D&RGW	Denver & Rio Grande Western Railroad Line
DOE/FOE	Determination of Eligibility and Finding of Effect
DOI	United States Department of Interior
DWQ	Utah Department of Environmental Quality, Division of Water Quality
DWR	Utah Department of Natural Resources, Division of Wildlife Resources
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	United States Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
GIS	Geographic Information System
IRCAA	Inter-Regional Corridor Alternatives Analysis
LDS	Church of Jesus Christ of Latter Day Saints
LOS	Level of Service
LRP	Long Range Plan
MAG	Mountainland Association of Governments
MOA	Memorandum of Agreement
NWI	National Wetland Inventory
NRHP	National Register of Historic Places
NEPA	National Environmental Policy Act
NVCS	North Valley Connectors Study
PAC	Public Advisory Committee
SIP	State Implementation Plan
SHPO	State Historic Preservation Office
STIP	Statewide Transportation Improvement Program
TAC	Technical Advisory Committee
TIP	Transportation Improvement Program
UDOT	Utah Department of Transportation
UPRR	Union Pacific Railroad
UP	Utah Power
UTA	Utah Transit Authority
USFWS	United States Fish and Wildlife Service

Executive Summary

The purpose of the North Valley Connectors Study (NVCS) is to evaluate the east-west transportation needs in the northwest Utah County area west of I-15 and north of Utah Lake. At the onset of the NVCS project, Mountainland Association of Governments (MAG), the project sponsor, identified two primary objectives for the study:

- Develop short-range (0-10 year) alternatives to alleviate congestion on SR-73 (Main Street) through downtown Lehi
- Evaluate the long-range (10-30 year) east-west transportation needs within the study area

Specifically, MAG, as the regional planning organization, wanted to document the anticipated growth of the northwest Utah County area, project the future east-west transportation needs resulting from this growth, develop and study alternatives, identify east-west transportation corridors through the area, and build consensus for the protection of these corridors. The NVCS project was a collaborative effort between MAG, the Utah Department of Transportation (UDOT), the local entities of American Fork, Cedar Fort, Eagle Mountain, Lehi, Lindon, Pleasant Grove, Saratoga Springs, and Utah County and several state and federal resource and regulatory agencies.

This NVCS report summarizes the data, analysis methodology, and conclusions that were reached in performing the work to address these two primary study objectives. The remainder of this Executive Summary highlights the important elements contained in each of the chapters in the report and summarizes the key data, results, and/or conclusions within each chapter.

Chapter One - Background and Purpose

Growth and development in Utah County has accelerated in the past ten years. This is especially true in the northwest area of the county north of Utah Lake and west of I-15 where two new cities, Eagle Mountain and Saratoga Springs, have been formed within the past few years. This area of Utah County contains large quantities of undeveloped land and regional forecasts indicate that substantial population and employment growth will occur in this area well into the future. Study area population could increase 250% to over 175,000 people by the planning year 2030.

To date, only local master plans have attempted to address transportation needs associated with the projected growth. However, these plans only concentrate on local transportation issues. No significant studies have been done to document the regional transportation related effects of the growth in this area of the County. The NVCS was undertaken to address these transportation related effects and needs of growth in northwest Utah County.

Chapter One describes the background and purpose of the project and includes a definition of the study area, the primary objectives of the study, corridor constraints, jurisdictions and advisory committees involved in the study, growth and travel demand projections, and previous studies that have been done that are related to this study.

Chapter Two - Alternatives Development and Evaluation

Chapter Two focuses on the transportation analyses performed to determine the transportation related need for east-west corridors through the study area and the development and evaluation of corridors. Critical issues included determining the number and size of needed corridors, developing possible corridor alignments, avoiding and/or minimizing the environmental impacts of each alignment, and selecting recommended corridors.

The results of the transportation and growth analyses indicated the need to preserve three major east-west transportation corridors in order to meet the long term east-west transportation demand projected to occur in the study area. Several potential corridor alignments were developed. They were then evaluated and refined based on their impacts and benefits relating to the study area transportation system, environmental constraints, socio-economic impacts, and cost. The three preferred alternatives have been termed the North Recommended Corridor, the Central Recommended Corridor, and the South Recommended Corridor. These Recommended Corridors are shown in Figure ES-1 at the end of this Executive Summary.

Chapter Three - Environmental Screening

As any of the Recommended Corridors will likely have to undergo a detailed environmental analysis and study as part of the National Environmental Policy Act (NEPA) requirements before they can be constructed, one of the important objectives of the NVCS was to select corridors that avoided or minimized environmental impacts. The environmental screening was based on an overview of critical environmental categories contained in the NEPA guidelines and other related federal statutes. Environmental resources considered included land uses, cultural/historic resources, social conditions, relocations, pedestrians, bicycles, air and water quality, noise, wetlands, Jordan River crossings, flood plains, wildlife, and threatened and endangered species. Potential relocations, property impacts, Jordan River crossings, and the impacts to wetlands associated with Utah Lake and the Jordan River were the most critical environmental issues.

Chapter Four - North Valley Connectors Recommended Corridors

The purpose of Chapter Four is to discuss each of the Recommended Corridors in more detail and provide information to assist in the preservation and implementation of the corridors. For each of the Recommended Corridors, a planning drawing is provided which more accurately shows the location of the Recommended Corridor in relation to the surrounding streets, properties, and physical features in the study area. Guidelines for the development of each Recommended Corridor are also discussed and include items such as geometric design standards, grade separations (bridges), typical sections (corridor size), access management principles, and planning level cost estimates.

The implementation priority of the Recommended Corridors is also set forth in Chapter Four. Since it is unlikely that sufficient funds will be available to construct all three of the Recommended Corridors simultaneously, it was necessary to prioritize the corridors in terms of the order in which they should be constructed. This was a very difficult task as many of the decision factors such as the rate and location of development within the study area, the amount of available funding and funding schedule, the level and amount of federal and state assistance, the amount of each corridor that could possibly be constructed as part of the local land development process, the support of key entities, etc. are not so easily quantified, yet play a very significant role in attempting to prioritize the implementation schedule for the corridors.

After much discussion with the advisory committees, local jurisdictions, and MAG, it was determined that either the North or Central Recommended Corridor (whichever one can be most easily and quickly funded and implemented) should be constructed first (2002-2007) with the other one following as soon as possible (2007-2015). The South Recommended Corridor would most likely be constructed last (2020-2025) as it is the most expensive, has more environmental issues, and serves fewer vehicles. The ultimate timing of the corridors will be dependent upon the continued growth of the project study area and the resulting travel demand.

Chapter Five - Public and Agency Involvement

A primary objective of the NVCS was to engage the public and seek their input on alternatives. A second objective was to keep federal and state resource and regulatory agencies informed and to seek their guidance and assistance in identifying the environmental consequences for various alternatives under consideration. This outreach to the public and resource agencies was continuous throughout the project and consisted of public information meetings, planning commission and city council meetings, and numerous one-on-one meetings with resource agencies, private property owners, city staff, and citizens. Chapter Five summarizes the public and agency involvement efforts.

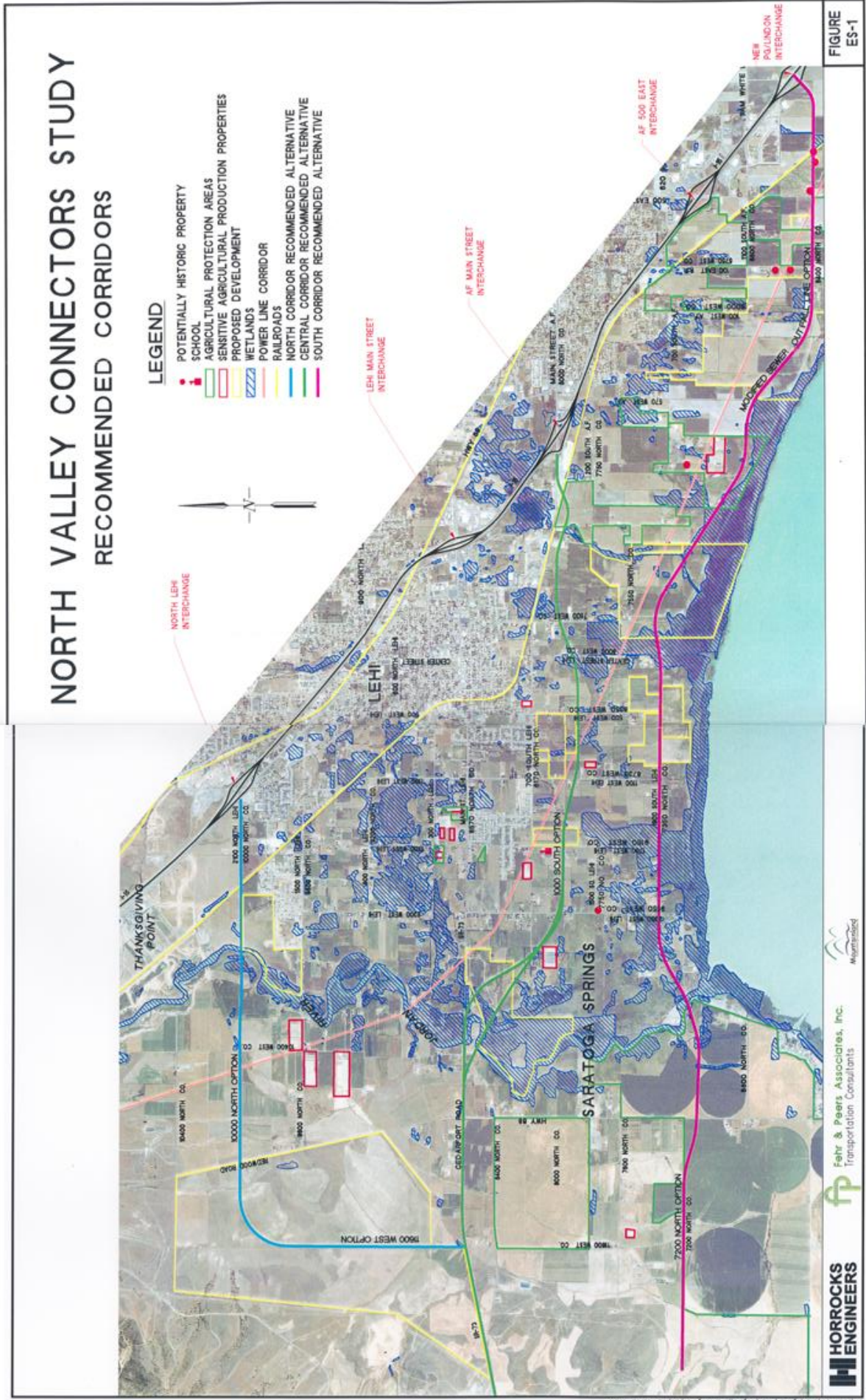
Chapter Six - Next Steps

The purpose of the NVCS project was to identify the need for future east-west transportation corridors in northwest Utah County and develop alternatives that could be incorporated into the local jurisdictions for corridor preservation purposes. Chapter Six describes the next steps that must be taken by the local jurisdictions to ensure that the Recommended Corridors are appropriately preserved. It also identifies other action items that must occur for the NVCS project to move into the NEPA and construction phases.

The single most important action item following this study is for each jurisdiction to preserve the Recommended Corridors and prevent development, which might be incompatible with future transportation facilities. This responsibility is shared by local and

state governments and MAG as the regional planning organization. To assist in this end, Chapter Six presents general corridor preservation techniques that can be used to preserve the Recommended Corridors. It also lists action items for each participating agency such as amending master plans to include the Recommended Corridors, working with land developers and property owners, and maintaining communication with MAG and other local, state, and federal agencies that may have an interest or be affected by the Recommended Corridors.

Recommended Corridors Map – Figure ES-1



1.0 Background and Purpose

The purpose of the North Valley Connector Study (NVCS) is to evaluate the east-west transportation needs in the northwest Utah County area west of I-15. Growth and development in Utah County has accelerated in the past ten years. This is especially true in the northwest area of the county where two new cities, Eagle Mountain and Saratoga Springs, have just been formed within the past few years. This area of Utah County contains large quantities of undeveloped land and regional forecasts indicate that substantial population and employment growth will occur in this area well into the future. To date, only the local community master plans have attempted to address transportation needs associated with the projected growth. However, these plans only concentrate on local transportation issues. No significant studies have been done to document the regional transportation related effects of the growth in this area of the County.

The primary travel demand in northwest Utah County is an east-west directional flow to the I-15 corridor for commuting purposes and to the Lehi/American Fork area for non-work related trips. At the present time, there is only one continuous east-west corridor within the study area to serve the existing and future east-west travel demands from within the study area to the I-15 corridor - SR-73 (Lehi Main Street). The need to identify and document the growth and related east-west transportation needs of northwest Utah County led to the appropriation of funding through Mountainland Association of Governments (MAG), the Utah Department of Transportation (UDOT), and the local communities in the area to conduct the North Valley Connectors Study (NVCS). Specifically, MAG, as the regional planning organization, wanted to document the anticipated growth, project the future east-west transportation needs resulting from this growth, develop and study alternatives, identify east-west transportation corridors through the area, and build consensus for the protection of these corridors. It should be mentioned that the north-south travel demands are being examined as part of the Inter-Regional Corridor Alternative Analysis (IRCAA) and will be studied in more detail as part of a future study evaluating the extension of the Western Transportation Corridor (Legacy Parkway) into Utah County (see Section 1.6).

1.1 Project Study Area

The NVCS study area encompassed the area bounded by the Utah-Salt Lake County line on the north, Utah Lake on the south, I-15 on the east, and the Cedar Valley on the west as shown in Figure 1-1. As the study evolved, it became evident that the study area needed to be divided into smaller areas to better analyze the east-west corridor options. Therefore, the study area was divided into three general areas which were referred to as the North Corridor Area, Central Corridor Area, and South Corridor Area. Each of these areas are bounded on the east by I-15 and on the west by the Cedar Valley area. These smaller corridor areas are shown on Figure 1-1 and are defined as follows:

- North Corridor Area - This area goes from the Utah-Salt Lake County line on the north to approximately 100 North Lehi on the south. Early on in the study it became evident that the Thanksgiving Point/Camp Williams area eliminated east-west corridors from being developed north of about 2100 North Lehi. Therefore, the North Corridor Area was modified to examine the area from 2100 North to 100 North Lehi.

- Central Corridor Area - This area goes from approximately 100 North Lehi on the north to about 1300 South Lehi on the south.
- South Corridor Area - This area goes from approximately 1300 South Lehi on the north to Utah Lake on the south.

Initially, the study area included all of the Cedar Valley area and encompassed the entire city limits of Eagle Mountain and Cedar Fort on the extreme west end of the study area.

Topographical limitations imposed by Lake Mountain just west of Redwood Road severely limited the number of feasible locations for corridors that would extend west into the Cedar Valley area. It readily became apparent that the only viable corridors to the west were the existing SR-73 corridor in the Central Corridor Area and the already planned Pony Express Parkway corridor into Eagle Mountain in the South Corridor Area. Therefore, the study area was modified on the west side to end at Lake Mountain with the understanding that any new corridors that were identified would have to connect into SR-73 and/or Pony Express Parkway prior to Lake Mountain. As such, all of the figures and aerial mapping shown in the report reflect the modified study area as described above.

1.2 Primary Objectives

At the onset of the NVCS project, MAG identified two primary objectives for the study:

- Developing short-range (0-10 year) alternatives to alleviate congestion on SR-73 (Main Street) through downtown Lehi (widening Main Street was not seen as a viable option due to the number of historic structures and business that would be adversely impacted as it is a very narrow, two lane road with limited right-of-way through the downtown area)
- Evaluating the long-range (10-30 year) east-west transportation needs within the study area

In addition to these two primary objectives, several secondary objectives were also identified which included:

- Documenting the projected population and employment growth in the study area for the 2030 planning year horizon
- Evaluating the ability of alternative transportation modes to satisfy the two primary objectives
- Identifying a specific east-west corridor or corridors that communities can incorporate into their local transportation master plans so they can begin corridor preservation activities
- Completing sufficient environmental analysis to minimize social and environmental impacts and develop corridors that best fit with the surrounding natural and built environment

The rapid growth within the study area is quickly using up open land and limiting the number and locations of available east-west corridors that can be developed with minimal disruptions and costs. Local governments participating in the study agreed that it would be much less costly

and disruptive to communities and the environment if a transportation corridor is protected from development as soon as possible. They also agreed that decisions on transportation amenity details such as streetscape features and medians can be made as their communities develop and can be based on available technology, community desires, and future needs as long as sufficient corridor right-of-way has been preserved.

1.3 Corridor Constraints

It should be emphasized that construction of major transportation facilities may require the preparation and federal approval of a National Environmental Protection Act (NEPA) compliant document such as an Environmental Impact Statement (EIS) or Environmental Assessment (EA). Corridor identification and preservation are simply intermediate steps which provide maximum flexibility when future decisions on purpose, need, and facility types are made. Typically, a higher speed roadway is the most land-consuming transportation option due to the more stringent horizontal and vertical design requirements. To ensure that these facility types remained viable options for inclusion in the corridor, this study focused on preserving adequate width for a principal arterial type of facility. The identified corridor also suggests potential intersection locations so that development can proceed while preserving adequate setbacks and access control.

In addition to the above corridor design constraints, there were several topographical, utility, environmental, and land use constraints in the study area which affected the corridor alternatives development and evaluation. These included the Jordan River, the Utah Power (UP) corridor, the Union Pacific Railroad (UPRR) corridor west of I-15 (also known as the old Denver & Rio Grande Western line), wetlands, existing and approved developments, agricultural preservation zones, historical properties, sensitive agricultural production areas (typically mink farms), compatibility with master plans, and the availability of connection locations to other transportation facilities such as I-15. The effects of these constraints are explained in more detail in Chapters 2 and 3 of the report.

1.4 Jurisdictions, Advisory Committees, & Consultant Team

The Consulting Team of Horrocks Engineers and Fehr & Peers Associates was selected to assist MAG, UDOT, and the local communities in identifying corridor alternatives that achieved the primary objectives and satisfied corridor design constraints. The primary product of the study is a corridor preservation planning drawing displayed on aerial photographs which cities can incorporate into their master plans and use to coordinate future development.

To assist and provide direction in the study, two separate advisory committees were established. The Technical Advisory Committee (TAC) was composed of staff members from the local communities and other concerned state and federal agencies and met monthly to discuss progress, provide technical expertise for decision making, and to coordinate with their respective bodies. The TAC also assisted in public involvement activities and attended open house meetings.

The TAC included representatives from the following cities and agencies:

- American Fork
- Cedar Fort
- Eagle Mountain
- Federal Highway Administration
- Lehi
- Lindon
- MAG
- Pleasant Grove
- Saratoga Springs
- Utah County
- UDOT
- Utah Division of Air Quality
- Utah Division of Wildlife Resources
- Utah Transit Authority
- U.S. Army Corps of Engineers
- U.S. Fish & Wildlife Service

Members of the TAC are identified in Appendix A. Minutes from all the TAC meetings are contained in the Administrative Record which is in the possession of MAG.

The Public Advisory Committee (PAC) was composed of elected officials, property owners, and citizens who were all selected by the mayors of each affected community. This group met about every six weeks to discuss the study's progress, respond to issues and decisions of the TAC, and provide input from a more regional wide, broad based point of view of a prospective corridor user. The PAC also assisted in public involvement activities and attended open house meetings. Members of the PAC are identified in Appendix A. Minutes from all the PAC meetings are contained in the Administrative Record which is in the possession of MAG. Other public involvement activities related to the NVCS are discussed in Chapter 5.

1.5 Growth and Travel Demand Projections

The need for regional east-west transportation corridors in northwest Utah County is based on projected population and employment growth in this area and the resulting travel demand.

Population Growth

Population growth in northwest Utah County is expected to increase dramatically through the year 2030. Projections from the Governor's Office of Planning and Budget show a substantial increase in population, increasing by nearly 250 percent between 2000 and 2030 as shown in Table 1-1. However, the cities feel that these projections are low given recent population increases in the area as documented by the number of building permits that the cities are issuing.

Table 1-1 2030 Population Projections*

City	Population		
	2000	2030	% Change
American Fork	22,486	43,110	191.7
Cedar Fort	309	2,132	690.0
Eagle Mountain	2,144	20,467	954.6
Lehi	17,936	46,840	261.2
Lindon	7,451	15,931	213.8
Pleasant Grove	21,788	42,417	194.7
Saratoga Springs	1,221	8,580	702.7
Total	73,335	179,477	244.7

* As obtained from Utah Governor's Office of Planning & Budget, July 2000

More recent population estimates indicate even greater growth. Estimates from 1998 and 2000 are compared in Table 1-2 for selected cities in the study area. From these numbers, it is clear that the area has been experiencing dramatic population increases in recent years. Though these high rates are not likely to occur on a consistent basis through 2030, it is expected that these trends will continue for at least the next several years although maybe to a lesser degree. Regardless, with development occurring as quickly as it has been in the recent past the existing transportation network will quickly become overwhelmed and won't be able to accommodate existing nor future traffic volumes.

Table 1-2 1998-2000 Population Growth*

Area	1998	2000	% Change
American Fork	19,215	22,486	117.0
Eagle Mountain	490	2,144	437.6
Lehi	15,297	17,936	117.3
Saratoga Springs	217	1,221	562.7

* As obtained from Utah Governor's Office of Planning & Budget, July 2000

Employment Growth

Like population, employment growth is expected to increase dramatically in the study area over the next 30 years. Although absolute employment numbers are not as great as population numbers, the total employment base in the study area is expected to increase by over 400 percent in the same time period as shown in Table 1-3.

Table 1-3 2030 Study Area Employment Projections*

City	Employment		
	1996	2030	% Change
American Fork	4,472	7,107	158.9%
Cedar Fort	31	1,961	6,325.8%
Eagle Mountain	16	6,163	38,518.8%
Lehi	2,321	7,642	329.3%
Lindon	1,160	4,474	385.7%
Pleasant Grove	595	1,464	246.1%
Saratoga Springs	37	3,767	10,181.1%
Unincorporated	1,021	7,694	753.6%
Total	9,653	40,272	417.2%

* As obtained from the MAG Regional Travel Demand Model, 2000

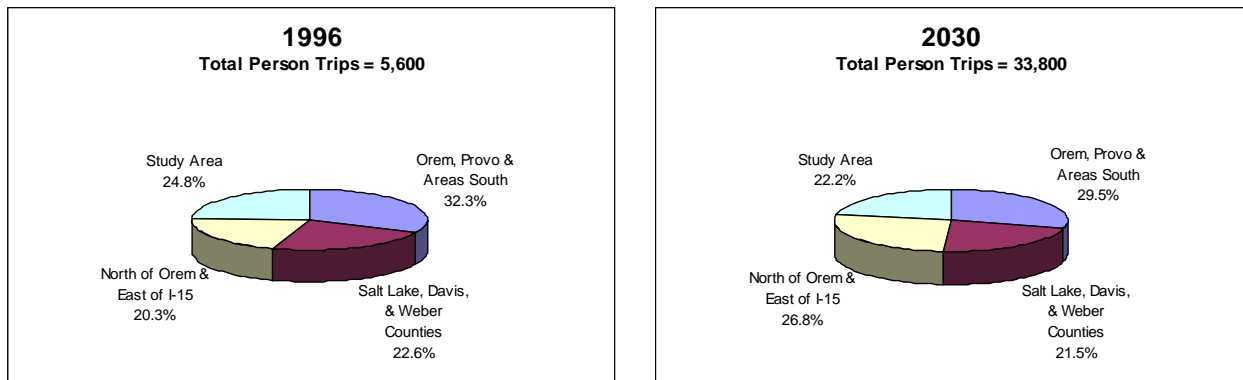
Travel Demand

While population and employment changes are significant factors in travel demand forecasting, it is the type of development, how that development affects vehicle trips, and the characteristics of those trips that are the essence of transportation planning. In order to assess the potential for future travel demand to, from, and through the study area, detailed travel demand modeling was performed using the MAG regional travel demand model adjusted for local land use and travel characteristics within each community.

Exhibit 1-1 shows the number of work trips for 1996 and 2030 generated within the study area and the regional destinations of those trips. The charts show that while the destinations do not change significantly over the time period, the number of trips increases dramatically. As Exhibit 1-1 indicates, in 1996 work trips originating in the study area totaled about 5,600 and were distributed somewhat evenly to destinations throughout the region. In 2030, the distribution of trips only slightly changed while the number of trips increased sharply. With the population increases outlined previously, this increase in the number of work trips is expected.

While the destinations of work trips do remain fairly consistent, the numbers indicate that the study area will become less of a “bedroom community” to Salt Lake City and Provo/Orem over time. Between 1996 and 2030, work trips to both of these areas decline, while work trips that are destined for the Utah County area north of Orem and east of I-15 increase. This shift reflects the increased employment expected in the area between 1996 and 2030 and further points to the need for additional transportation facilities within and across the study area.

Exhibit 1-1 Work Trips From Study Area*



* As obtained from the MAG Regional Travel Demand Model, 2000

While this data does point to shifting employment and travel patterns in the area, it also highlights interesting differences in this area over most other suburban residential neighborhoods. Typical work trip patterns for suburban residential areas generally show traffic moving in the same direction towards large employment centers such as Central Business Districts in the morning and away from these centers in the afternoon. Due to this area's geographic location between two "down towns" (Salt Lake City and Orem/Provo) and growing employment opportunities in nearby suburban areas, the travel patterns are more complex for northwest Utah County than other similar areas. This "non-standard" pattern of work trips from the study area indicates that there is not one predominant traffic pattern through the area that could be satisfied with one corridor. Rather, it was evident that several alternatives of varying capacity and location would need to be examined.

The 33,800 work trips from the study area as shown in Exhibit 1 correspond to approximately 200,000 total person trips from the study area. Based on the origin/destination information discussed above, approximately 73,800 of the 200,00 total trips would be crossing the Jordan River in the study area. This volume of trips exceeds the capacity of the existing river crossings in the study area and further indicates the need for additional east-west mobility options through the study area.

1.6 Previous Studies

Historically, the northwest Utah County area has been a very rural, agricultural oriented area with very little growth. The need for other east-west corridors in addition to SR-73 was primarily seen as a long-term need. As such, east-west travel demand through northwest Utah County has only been addressed as part of local community master plans. However, the tremendous growth and incorporation of two new cities, Eagle Mountain and Saratoga Springs, has changed all that within the past few years. Now, the need for more east-west capacity is immediate as SR-73 through Lehi has experienced dramatic traffic volume increases in the past few years and generally operates with much congestion for many hours throughout the day.

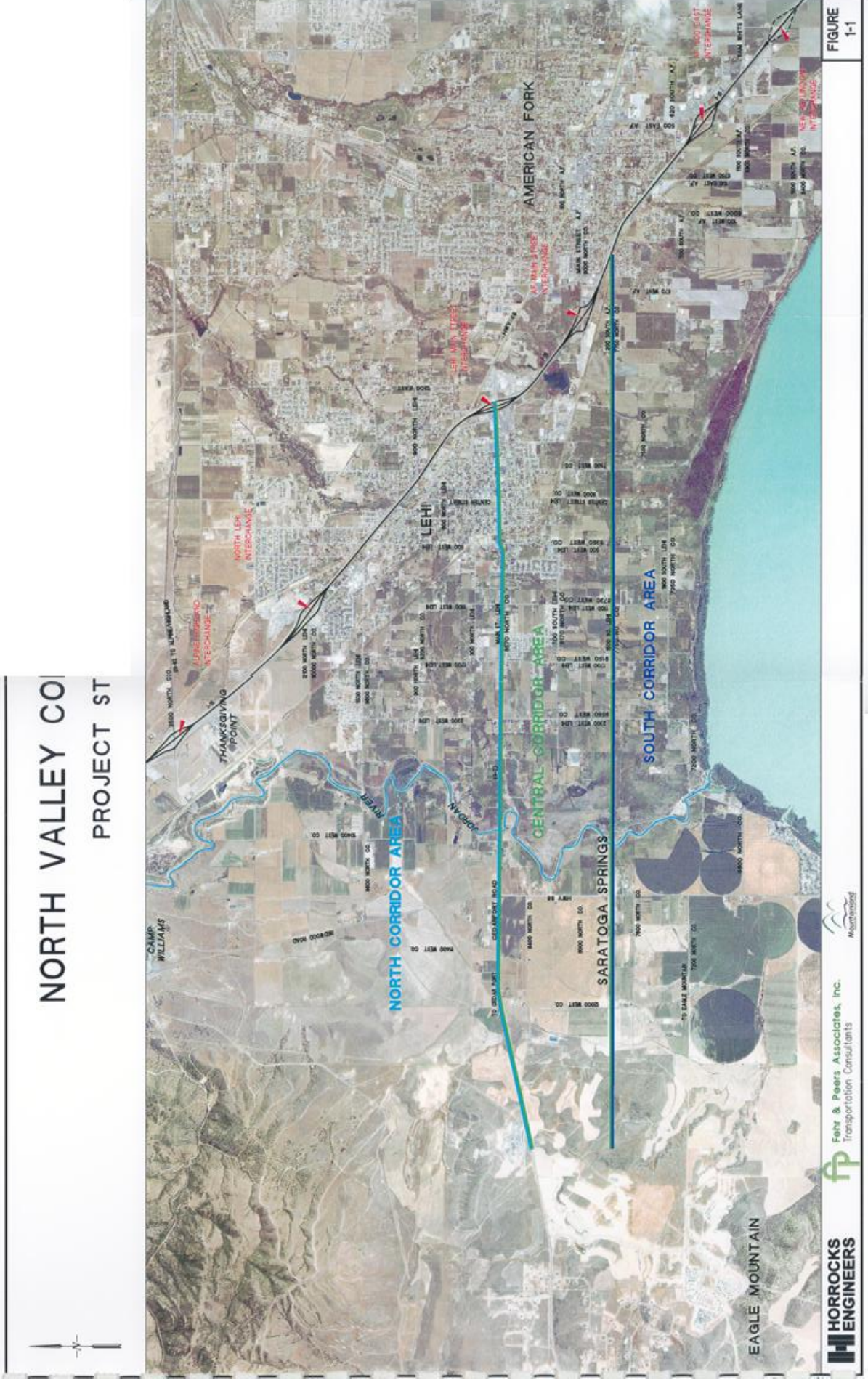
One other concern of MAG related to the growth explosion of northwest Utah County was the consistency of master transportation plans in the area. There had been no previous work done to make sure that the various local community master plans were consistent and provided for sufficient east-west regional traffic flow across the study area. These items were the driving force behind the North Valley Connectors Study.

There are two other recently completed studies that are indirectly related to the NVCS study. These are the Inter-Regional Corridor Alternatives Analysis (IRCAA) and the Western Transportation (5600 West) Corridor (WTC) Study or Legacy Parkway. The IRCAA study analyzed north-south travel demands between Brigham City in Box Elder County and Nephi in Utah County. This study primarily focused on the transportation needs related to I-15, light rail, commuter rail, and the need for an extension of the WTC into Utah County. The IRCAA study results indicated that the WTC needed to extend into Utah County and connect to I-15 in northwest Utah County.

The WTC study looked at preserving right-of-way for a future transportation corridor extending from I-80 in Salt Lake County to the Utah-Salt Lake County line. The WTC study ended at the county line and did not address issues relating to the extension of the corridor into Utah County.

The above studies only identified the need to extend the WTC into Utah County. They did not look at any of the transportation, environmental, or social issues associated with this extension. The results of the NVCS study could be impacted by the extension of the WTC into Utah County. However, the nature or extent of these impacts is unknown as they are heavily dependent upon the type and location of the WTC facility in Utah County and these have not yet been studied. As such, it was impossible in the NVCS study to address how the WTC may or may not affect any of the NVCS recommendations. This is an unresolved issue that should be immediately addressed by MAG and UDOT.

Project Study Area Map – Figure 1-1



2.0 Alternatives Development and Evaluation

The purpose of this chapter is to describe the process used to develop and evaluate corridor alternatives in this study. Initially, several preliminary east-west corridors in the study area were identified. Advantages and disadvantages of each preliminary corridor were discussed and a preliminary screening was performed to determine which corridors were viable and warranted further analysis. Reasons for their elimination or advancement are presented. After the preliminary screening, viable corridors were evaluated in greater detail. These remaining alternatives were formally screened by the project Technical Advisory Committee. This led to the selection of three general corridor alignments which were termed the “Recommended Corridors.” Throughout the remainder of the study, these Recommended Corridors were scrutinized in further detail and various sub-alternatives and adjustments were made. The final alignments resulted from various modifications and refinements to the Recommended Corridors.

2.1 Analysis of Existing Transportation Plans

The first step in the development of alternatives was to examine the existing transportation master plans in the study area. As mentioned earlier, there was some concern at the on-set of the study that because some of the communities in the study area are relatively new and are quickly developing, the transportation master plans in the area may not be consistent both from a regional perspective and across jurisdictional boundaries. Information from the master plans of American Fork, Eagle Mountain, Lehi, and Saratoga Springs was consolidated and compared for consistency in terms of roadway locations, configurations, and sizes. This composite master plan analysis is presented in Table 2-1 and shown graphically in Figure 2-1.

As can be seen in Table 2-1 and Figure 2-1, there is quite an array of street types, classifications, and sizes. Figure 2-1 readily illustrates locations where the transportation plans are not consistent at jurisdictional boundaries. For example, 1900 South Lehi is identified as a collector road in Lehi's plan, but the plans of American Fork and Saratoga Springs identify the continuation of this roadway through their communities as an arterial road. Discrepancies such as this have a dramatic effect on regional mobility through the study area. Though it is not necessary for the terminology or right-of-way widths to be exactly the same for all communities, as a minimum the number of intended travel lanes should be consistent across jurisdictional boundaries. This will help to eliminate bottlenecks and driver confusion associated with varying roadway designs along a corridor.

The MAG regional travel demand model was refined to include the different roadway characteristics from each community. Assuming that each plan was implemented, the composite master plan was then modeled to determine its adequacy in accommodating the travel demands associated with the 2030 population and employment projections discussed in Chapter 1.

Table 2-1 Study Area Composite Master Plan

Pvmt. Width	NVCS Plan		American Fork			Lehi			Saratoga Springs			Eagle Mountain			
			Lanes	R/W	Street Class	Lanes	R/W	Street Class	Lanes	R/W	Street Class	Lanes	R/W	Street Class	
	Class	Lanes													
40'	Collector (Blue)	2-3				2-3	62'	Minor							
41'									2	74	Minor				
42'			2	66'	Minor							2	60'	Minor	
44'						3	66'	Minor							
48'						3	70'	Major							
52'													3	72'	Major
58'			3	82'	Major	3	80-84'	Retail							
62'										3	95'	Major			
52'	Arterial (Green)	4-5				4-5	76'	Minor							
58'						4-5	102'	Major							
72'			5	96'	Arterial										
76'												5	96'	Major Coll.	
86'										5	120'	Arterial			
84'	Principal Arterial (Red)	7				7	128'	Prin. Arterial							

The results of the travel demand modeling are expressed in terms of roadway Level of Service (LOS). Level of Service is a qualitative measurement of the amount of congestion on a roadway that factors in a variety of travel parameters such as speed, delay, number and length of stops, queues, signal operations, volumes, and capacity. Roadways are graded from “A” to “F” with LOS “A” being the best. LOS “A” indicates a roadway with very little congestion that operates at the intended speed with few stops and little delay. Desirable roadway LOS is “C” or better. LOS “D” and “E” represent congested conditions such as those commonly found during rush hours. LOS “F” indicates a roadway with extreme congestion, low speeds, many stops, and large amounts of delay. In essence, the roadway is “failing” - there is more traffic on the road than the physical capacity of the road can accommodate.

The results of the LOS analyses for the planned roadways as shown in the composite study area master plan (see Figure 2-1) are illustrated in Figure 2-2. As can be seen, the LOS analyses show “very congested” conditions (red streets) in many parts of the study area and “congested” conditions (yellow streets) in several others on most of the east-west roadways. East-west roads approaching I-15 interchanges are especially likely to experience heavy congestion in 2030. These results indicate that without any improvements, the planned roadway network for the study area will not be able to satisfactorily accommodate the future east-west traffic demand.

Though the NVCS focused on east-west travel, Figure 2-2 also provides some useful information related to north-south travel. Most all of the planned north-south roadways are projected to operate at LOS “C” or higher. This indicates that there are plenty of north-south roadways already planned that will accommodate the north-south travel demands and provide adequate connections to the east-west corridors. It is the east-west travel demands across the study area that are not accommodated by the currently planned transportation system improvements.

The modeling results also indicate that the existing master plans in place for many of the communities in the study area do not account for the tremendous growth that is being experienced in northwest Utah County. Though the existing transportation master plans appear to adequately meet the local needs, there is a lack of transportation facilities intended to serve the east-west regional demands across the study area. As such, many of the smaller facilities that are currently planned to accommodate local traffic are being forced to carry regional trips due to the lack of regional routes.

2.2 Analysis of Transit Alternatives

The next step in the process was to determine if improved transit facilities such as buses and/or light rail could be implemented to accommodate the extra east-west travel demand not serviced by the roadway plans.

Information obtained from MAG and the Utah Transit Authority (UTA) indicate that transit presently carries fewer than one percent of the total trips in Utah County and approximately two percent of the work trips in the County. The NVCS travel demand modeling estimated specific transit facilities and service variables as opposed to a blanket transit ridership percentage. Commuter rail and additional bus service was modeled, but there are no UTA plans for a major expansion of either high frequency or fixed guideway transit service serving east-west travel demands in northwest Utah County. Therefore, transit service will become an integral component to any roadway facilities that are constructed, but improvements in transit alone do not eliminate or significantly lessen the need for additional roadways. Additional transit improvements, especially bus service, should be further studied and implemented in conjunction with the planned roadway improvements as part of a complete transportation system for northwest Utah County.

2.3 Determination of the Number of Corridors

Once it was determined that the existing master plans, even with enhanced transit facilities, could not accommodate the future east-west travel demand, the next step was to determine the number

and sizes of additional corridors that were needed. Several different options were analyzed that included one, two, and three additional corridors. For modeling purposes it was not required to define specific alignments for the corridors, just general locations. Thus, the corridor locations used in the model are only approximate and may not exactly match any of the Recommended Corridors that were ultimately developed.

One Corridor Alternatives

The first set of alternatives examined involved modeling one, large 7-lane, arterial class facility in each of the three corridor areas. The purpose of this modeling was to determine if one, large arterial would be sufficient to accommodate the regional east-west travel demand in the study area. An arterial was modeled in each of the three corridor areas. The results are shown in Figures 2-3 to 2-5. As can be seen in these figures, the arterial did address all the east-west capacity needs for the particular corridor area in which it was located, but did not address the east-west capacity needs in the two remaining corridor areas. High levels of service were seen in the corridor area where the arterial was located, but no level of service improvements were seen in the other two corridor areas. The conclusion of this task was that one large arterial would not solve all of the regional east-west capacity needs, regardless of in which corridor area it was located.

Two Corridor Alternatives

The next set of alternatives examined involved modeling two, large 7-lane, arterial class facilities in two of the three corridor areas. The purpose of this modeling was to determine if two, large arterials would be sufficient to accommodate the regional east-west travel demand in the study area. The results are shown in Figures 2-6 to 2-8. Similar to the one corridor alternatives, the two arterials did address all the east-west capacity needs for the two corridor areas in which they were located, but did not address the east-west capacity needs in the remaining corridor area. High levels of service were seen in the corridor areas where the arterials were located, but significant congestion still remained in the other corridor area. The conclusion of this task was that two large arterials would not solve all of the regional east-west capacity needs, regardless of in which corridor areas they were located.

It could be argued that the north and south corridor option (Figure 2-7) showed what might be considered acceptable levels of service in the central and south corridor areas with some congestion in the north corridor area. However, one of the main objectives of the NVCS was to identify alternatives to alleviate congestion on Main Street in downtown Lehi. While this option did provide adequate levels of service on SR-73 west of the downtown area, it did not alleviate any of the congestion on Main Street in the downtown area. Therefore, this option did not fulfill one of the primary study objectives and was eliminated as a viable alternative.

Three Corridor Alternatives

From the modeling done in the previous scenarios, it became apparent that a large, 7-lane arterial in each of the three corridors would be overkill. If a new east-west facility was required in each corridor area, then they would not all need to be 7-lane arterials. Therefore, the next set of alternatives examined involved modeling different class facilities in each of the three corridor areas. The purpose of this modeling was two-fold: 1) to determine what size of facility in each

corridor area would be needed to accommodate the regional east-west travel demand within that particular corridor area; and 2) to determine what size of facility in each corridor area would be needed to accommodate the regional east-west travel demand within the entire study area. Various facilities were modeled within each corridor area from smaller, 3-lane collectors to a large, 7-lane arterial. The results are shown in Figures 2-9 to 2-15.

The results indicated that a new facility in each of the three corridor areas improved the level of service and lessened the congestion both within each corridor area and throughout the study area as a whole. However, two main conclusions readily became apparent after this task: 1) where ever a large, 7-lane facility was implemented it appeared to be overkill and did not provide a corresponding increase in level of service relative to the increased size of the facility; and 2) where ever a 3-lane facility was implemented it did not provide enough capacity to accommodate the travel demand. The final conclusion of this task was that the alternative with a 5-lane facility in each of the three corridor areas (Figure 2-14) was the best combination to address both the corridor specific and regional study area east-west travel demands. Though some alternatives seemed to provide better levels of service through downtown Lehi than this Recommended Alternative, the Recommended Alternative seemed to best meet the two primary study objectives of providing short-range congestion relief on downtown Lehi Main Street and accommodating long-range east-west travel demands across the entire study area.

An alternative that was suggested late in the study was the option of having two 3-lane facilities in the central corridor area instead of one 5-lane facility with 5-lane facilities in the north and south corridor areas. It was hoped that this option would minimize the impact on adjacent land uses in the central corridor as compared to one larger facility. However, modeling of this alternative indicated that adequate capacity would not be provided on either one of the 3-lane facilities and there would still be significant congestion on Main Street in downtown Lehi. Therefore, this alternative was eliminated.

2.4 Development of Preliminary Corridor Area Options

Once it was determined from the modeling tasks that three corridors would be needed to satisfy the objectives of the study, the next step was to begin developing and evaluating potential alignments. A wide array of potential alignments was developed within each of the three corridor areas. The development of these preliminary alignment alternatives was based on the following criteria:

- Must connect to I-15 on the east end at an existing interchange or at a location where a new interchange could be constructed
- Must connect to at least Redwood Road on the west in the North Corridor Area, but preferably to SR-73
- Must connect to SR-73 on the west end in the Central Corridor Area
- Must connect to Pony Express Parkway on the west end in the South Corridor Area
- Must minimize the environmental impacts to wetlands, the Jordan River, and historical resources
- Must minimize the social impacts to residences, business, important farm lands, and

- planned and approved developments
- Must provide reasonable arterial roadway spacing (preferably one mile spacing)

Based on these criteria, several potential corridor locations were identified. These preliminary options are shown in Figure 2-16 and are discussed in the following paragraphs.

North Corridor Area Options

Five preliminary corridor options were developed in the North Corridor Area. These are labeled N1 through N5 in Figure 2-16. Existing developments north of 2100 North such as Thanksgiving Point and Camp Williams precluded the development of any alternatives that could tie to I-15 at the Alpine/Highland interchange at SR-92. Therefore, all north corridor options connect to I-15 at or near the North Lehi Interchange on 2100 North. Option N1 follows along the Jordan River and connects to SR-73 just west of the Jordan River in Lehi. Options N2 and N3 follow 1500 North and 2100 North respectively and connect to SR-73 west of Redwood Road at 11800 West in Saratoga Springs. Option N4 follows 2100 North and 2600 North and ends at Redwood Road. Option N5 follows an old abandoned railroad spur and connects to SR-73 at 11800 West in Saratoga Springs. Options N1, N3, and N4 would require a new crossing of the Jordan River.

Central Corridor Area Options

Three main preliminary options were developed in the Central Corridor Area. These are labeled C1 through C3 in Figure 2-16. Options C1 and C2 connect to I-15 on the east at the American Fork Main Street interchange while Option C3 connects to the Lehi Main Street Interchange. Option C1 basically follows 1100 South in Lehi. Option C2 follows 700 South in Lehi. Option C3 follows Main Street in Lehi and includes a one-way couplet through downtown Lehi from about 500 West to 700 East (one-way eastbound on 100 South and one-way westbound on Main Street). Various connection options on the west end are labeled C1-W1, C1-W2, C2-W1, and C2-W2 and connect to SR-73 just east of the Jordan River in Lehi or west of Redwood Road at 11800 West in Saratoga Springs. Options C1-W2 and C2-W2 follow the Utah Power line corridor. Options C1-W3 and C2-W1 are new alignments. Option C1-W1 requires a new crossing of the Jordan River. These various west connection options could be mixed and matched amongst Options C1 and C2 to provide a variety of western termini.

South Corridor Area Options

Five main preliminary options were developed in the South Corridor Area. These are labeled S1 through S5 in Figure 2-16. All the options connect at the east end to I-15 at either the American Fork 500 East interchange or the new Pleasant Grove/Lindon interchange. Option S4 could also connect to I-15 at the American Fork Main Street interchange. All options connect to Pony Express Parkway on the west end which goes out to Eagle Mountain. Through Saratoga Springs and Lehi, Option S1 follows 7200 North (County); Option S2 follows 1900 South (7350 North County); Option S3 follows 1700 South (7600 North County); Option S4 follows 1500 South (7750 North County); and S5 involves the construction of a causeway across the north end of Utah Lake. All five options have various connection options to I-15 on the east end through American Fork. These are labeled S1-E1, S1-E2, S1-E3, S2-E1, S2-E2, S3-E1, S4-E1 and S4-E2. These eastern connection options follow either the Utah Power line corridor or what is

commonly referred to as the sewer outfall line. These various east connection options could be mixed and matched among Options S1, S2, S3, and S4 to provide a variety of eastern termini alternatives. Options S1-S4 also have various connection options to Pony Express Parkway on the west end through Saratoga Springs. These are labeled S1-W1, S2-W1, and S3-W1 and would all require new crossings of the Jordan River. As with the east connection options, the various west connection options could be mixed and matched among Options S1, S2, S3, and S4 to provide a variety of western termini alternatives.

2.5 Screening of Preliminary Corridor Area Options

The preliminary corridor area options were presented to the TAC and PAC and a preliminary screening exercise was undertaken to evaluate the feasibility of implementing each of the potential options and to discuss the pros and cons of each option. The goal of this exercise was to quickly eliminate options that would not survive a more technical analysis due to obvious environmental, social, political, economic, or technical flaws. The end result of this task was the elimination of several options and the identification of corridors that should move forward in the alternatives development and evaluation process. At this stage, a public information meeting was held to present to the general public the work that had been done to date and obtain public input on the study (see Chapter 5 - Public and Agency Involvement). The majority of the public that attended this meeting supported the work that had been done and the conclusions that had been developed so far in the study.

North Corridor Area Options

Within the North Corridor Area, Options N1, N4, and N5 were eliminated through the preliminary screening process. Option N1 was eliminated due to substantial wetland and Jordan River impacts. Option N4 was eliminated because it resulted in more out-of-direction travel from the study area, placed more traffic on Redwood Road since it didn't directly connect to SR-73, and did not seem to provide any advantages over Options N2 and N3. Option N5 was eliminated because it adversely impacted a planned mixed-use community that is already under construction and impacted a greater number of important farm lands. The result of this preliminary screening led to the establishment of a wide corridor area between N2 and N3 in which detailed alignments would be developed and analyzed. This area is shown in Figure 2-18.

Central Corridor Area Options

Within the Central Corridor Area, only Option C3 was eliminated through the preliminary screening process. None of the western connection options were eliminated. The reason Option C3 was eliminated was because of the political and social opposition to the one-way couplet. Local residents felt that the social impacts associated with converting residential streets to more traffic intensive streets and the resulting pressure to modify adjacent residential land uses to commercial land uses were too great. There would also be more cross traffic on local streets between the one-way streets. The downtown Lehi business community strongly opposed this option as well. Local politicians received a lot of comments from residents and business owners against this option and felt that the community would not support this option.

During the preliminary screening, it was also decided that any options along 700 South between

the Utah Power line corridor and the UPRR tracks should be eliminated due to the large social impacts widening 700 South would have on the existing residences and neighborhoods already developed in this area. The result of this preliminary screening led to the establishment of a wide corridor area between C1 and C2 in which detailed alignments would be developed and analyzed. This area is shown in Figure 2-18.

South Corridor Area Options

Within the South Corridor Area, Options S1, S4, S5, S1-E1, S1-E2, S1-E3 and S2-W1 were eliminated through the preliminary screening process. Options S1 and most of S1-E1 were eliminated due to the substantial amount of wetland and wildlife habitat impacts along the north shore area of Utah Lake. Options S1-E2 and portions of S1-E3 were eliminated because of the dramatic effects they would have on American Fork's south side general plan, the inadequacy of the American Fork 500 East interchange to accommodate the amount of traffic that would be on this corridor, and as a result of S1 being eliminated. Option S2-W1 was eliminated because of the greater amount of important farm land impacts it had as compared to Options S1-W1 or S3-W1. Option S4 was eliminated because it was too close to the central corridor area, resulted in too much out of direction travel, and the capacity of the American Fork Main Street interchange would not accommodate the traffic volumes that would exist if both the central and south corridors connected to I-15 at this location. Option S5 was eliminated due to environmental, economic, and technical concerns associated with constructing a causeway across the lake. It should be noted that Option S1-W1 was modified to reduce the amount of important farm land impacts. The result of this preliminary screening led to the establishment of a wide corridor area between S2 and S3 in which detailed alignments would be developed and analyzed. This area is shown in Figure 2-18.

2.6 Development of Detailed Corridor Area Alternatives

The results of the preliminary corridor area screening identified specific areas within the North, Central, and South Corridor Areas in which detailed corridor alternatives should be developed for further analysis and evaluation (see Figure 2-18). It is within these areas that the final recommended corridors would be located. Prior to developing these detailed corridor alternatives, a variety of environmental and social data was collected. This data was incorporated into the alternatives development process so as to assist in coming up with options that could survive the more detailed NEPA analysis that may be required for these corridors before any of them are constructed. Data collected included information related to wetlands, flood plains, historic properties, wildlife habitat, existing and planned residential areas, existing and planned commercial areas, existing and planned trail systems, school and pedestrian locations, important farm lands, and agricultural protection zones (see Chapter 3 - Environmental Screening).

With the environmental data input into the study area, the next step was to develop more detailed alternatives for each corridor area. The development of these detailed alternatives was guided by the following criteria:

- Must avoid or minimize environmental impacts to wetlands, wildlife habitat, historic/cultural resources, and the Jordan River
- Must avoid or minimize social impacts to existing and planned residential areas, school

- and pedestrian locations, and existing and planned commercial areas
- Must avoid or minimize impacts to important farm lands and agricultural protection zones
 - Must be as consistent as possible with existing local and regional land use and transportation plans
 - Must be able to support a 5-lane, 50 mph design that meets all UDOT and American Association of State Highway and Transportation Officials (AASHTO) roadway design guidelines and standards

Based on these criteria, several detailed corridor alternatives were identified within the corridor areas described above and shown in Figure 2-18. These detailed options are shown in Figure 2-19 and are discussed in the following paragraphs.

North Corridor Area Alternatives

Two corridor alternatives were developed in the North Corridor Area. These are labeled the 11800 West - East Option and 11800 West - West Option in Figure 2-19. Planned developments including park and school property between 1500 North and 2100 North in Lehi east of the Jordan River prevented any alignments along 1500 North that would use the existing Jordan River crossing and connect to the North Lehi Interchange. As such, both North Corridor Area alternatives follow 2100 North from I-15 to the foothills of the mountains west of Redwood Road. At this point, both alternatives bend to the south and follow the power line corridor at approximately 11800 West (County). The 11800 West - East Option follows along 11800 West until it terminates at SR-73 in Saratoga Springs. The 11800 West - West Option bends farther to the west and terminates at SR-73 at approximately 12000 West (County) in Saratoga Springs. Both of the alternatives require a grade separated overpass crossing of the UPRR tracks and a new bridge crossing of the Jordan River.

Central Corridor Area Alternatives

Six corridor alternatives were developed in the Central Corridor Area. These are labeled North Power Line Option, South Power Line Option, North Power Line/700 South Option, South Power Line/700 South Option, 1000 South Option, and 1000 South - River Option in Figure 2-19. All of the Central Corridor Area options begin at the I-15 at the American Fork Main Street interchange and would require a grade separated overpass crossing of the UPRR tracks. The options proceed west along approximately 1000 South until reaching the Utah Power line corridor. At this point, they separate into six distinct alternatives.

The North Power Line Option follows along the north side of the Utah Power line corridor until reaching SR-73 while the South Power Line Option follows along the south side of the Utah Power line corridor. The North Power Line/700 South Option follows along the north side of the Utah Power line corridor until reaching 700 South at which point it turns to the west and follows 700 South until crossing 2300 West where it turns to the north until connecting with SR-73. The South Power Line/700 South Option follows this same alignment except along the Utah Power line corridor where it runs along the south side of the power lines.

The 1000 South Option proceeds west from the Utah Power line corridor generally along 1000 South until crossing 2300 West at which point it turns to the north and connects to SR-73. The 1000 South - River Option follows the same alignment as the 1000 South Option until crossing 2300 West at which point this option continues west across the Jordan River to Redwood Road where it turns to the northwest until connecting to SR-73 at approximately 11400 West in Saratoga Springs. Only the 1000 South - River Option would require a new crossing of the Jordan River. The other five options require widening the existing Jordan River bridge on SR-73.

South Corridor Area Alternatives

Five corridor alternatives were developed in the South Corridor Area. These are labeled North Power Line Option, South Power Line Option, Modified Sewer Outfall Line Option, 7600 North Option, and 7200 North Option in Figure 2-19. All the options begin at I-15 at the new Pleasant Grove/Lindon interchange and proceed west along 6400 North (County). They all require a new grade separated overpass crossing of the UPRR tracks. After crossing the tracks, the North Power Line Option follows along the north side of the Utah Power line corridor until approximately 7200 North (County) at which point it turns to the west and heads northwest until it connects to 1900 South. The South Power Line Options follows this same alignment except it is on the south side of the power line corridor. The Modified Sewer Outfall Line Option proceeds further west along 6400 North until crossing 6000 West (County) at which point it turns to the west and heads northwest skirting the wetland areas along Utah Lake until connecting to 1900 West in Lehi.

All the options then proceed along 1900 South until crossing 2300 West. At this point, the 7600 North Option turns to the northwest until reaching 7600 North where it turns to the west until approximately 11600 West (County) at which point it turns to the southwest until connecting into the Pony Express Parkway extension from Eagle Mountain. This option requires a new crossing of the Jordan River. The 7200 North Option turns to the southwest just west of 2300 West and crosses the Jordan River at the existing Saratoga Springs Parkway bridge. At this point, it turns to the west generally following 7200 North (County) until connecting to the Pony Express Parkway extension from Eagle Mountain. The existing Saratoga Springs Parkway bridge would be reconstructed.

2.7 Evaluation of Detailed Corridor Area Alternatives

Once the detailed corridor alternatives were developed, a formal screening process was conducted by the TAC to objectively analyze, evaluate, and rank each alternative in order to select final recommended alternatives. The formal screening process included identifying relevant social, environmental, and technical issues associated with each alternative. The following paragraphs describe the evaluation process used to select the final recommended alternatives.

Evaluation Criteria

Early on in the NVCS study process, before any of the preliminary or detailed corridor options were developed, the TAC developed a list of criteria to analyze and evaluate any alternatives that would be developed. The purpose for the criteria was to identify and define all important social, environmental, transportation, and technical factors that the TAC envisioned would affect the development, evaluation, and selection of recommended alternatives. With these criteria

identified before any options were developed, each option could be independently and objectively evaluated without any one option being unfairly biased by criteria that was established after the fact.

The criteria were divided into four major categories: Transportation System; Environmental Constraints; Socio-Economic Constraints; and Cost. Within each of these major categories, several individual evaluation criteria were identified. The four major categories with their individual evaluation criterion are summarized in Table 2-2.

The TAC then provided weighting factors for each of the major categories based on how important each category was in relation to the goals and objectives of the study. They provided weighting factors for each individual criterion based on how important that criterion was within the category. The purpose of the weighting factors was to attempt to balance environmental, social, and technical issues in a manner that fairly addressed each of these areas while at the same time ensuring that no one category could sway the rankings inordinately because it had more criteria than another category. The TAC decided that the categories should be weighted as follows:

Transportation System - 32%
Socio-Economic Constraints - 26%

Environmental Constraints - 32%
Cost - 10%

Table 2-2 NVCS Evaluation Criteria

Criteria	Definition
Transportation System	Criteria in this category relate to the design, function, and operation of the local and regional transportation system and street network.
Effects on local & regional street system	How is the local and regional street system affected by new east-west routes in terms of capacity, functionality, level of service, and congestion?
Route operations & geometry	How will the proposed east-west facility operate? Are there any geometric constraints that make this route easier or more difficult to implement?
Corridor spacing	Is the proposed corridor too close or too far away from parallel facilities? Does it connect to other important local and regional transportation facilities?
Multi-modal & non-motorized opportunities	Will the alignment allow for multiple transportation modes such as transit and trails? Does the corridor connect to other existing or proposed alternative transportation facilities?
Ability to accommodate future Legacy Highway	Will the alignment allow for the incorporation of a future Legacy Parkway or be able to provide connections to a future Legacy Parkway?
Environmental Constraints	Criteria in this category relate to the effects the corridor may have on the natural environment and environmental resources in the study area.
Jordan River	Will the alignment require new crossings of the Jordan River? Will the alignment cross the Jordan River at sensitive river locations?
Wetlands & flood plains	How will wetlands and flood plains be impacted? Does the alignment fall within the 100 or 500 year flood plain limits?
Historic resources	Will the corridor impact any potentially eligible historic resources?
Critical wildlife habitat	How will the corridor affect critical wildlife habitat?
Socio-Economic Constraints	Criteria in this category relate to the effects the corridor may have on the social and economic environment within the study area.
Relocations	Will the corridor require any residential or commercial relocations or right-of-way acquisitions?
Noise	Will changes in noise levels have adverse or unacceptable impacts to adjacent land uses?
Social environment	Will the corridor divide any neighborhoods? Affect school boundaries? Unfairly or disproportionately impact any social group?
Compatibility w/existing community plans	Does the corridor location conflict with present community growth and development plans?
Land use	Is the corridor incompatible with surrounding land use plans? Will the location of the corridor impact planned developments, agricultural protection zones, or sensitive agricultural protection zones such as milk farms?
Ability to preserve the corridor	Are there circumstances that would make the preservation of the corridor too difficult or costly? Can community and political support be obtained for the preservation of the corridor?
Cost	Criteria in this category relate to the relative construction costs of the corridor.
Construction cost	What is the estimated construction cost of the corridor alternative?

In order to conduct the alternatives evaluation, as much information as possible was collected in relation to the evaluation categories and individual criteria for each of the detailed corridor alternatives. This information was then provided to the TAC to assist them in conducting the evaluation and is shown in Table 2-3.

Evaluation Matrix

The evaluation matrix was used to evaluate and rank each detailed corridor alternative. As a reminder, it was determined earlier in the study that a new corridor in each of the three corridor areas was required. Therefore, the evaluation matrix was used to compare the detailed alternatives within each corridor and not to compare alternatives between corridors. Using the information provided in Table 2-3 along with the category and criteria weighting factors, each individual TAC member analyzed each alternative and filled out the evaluation matrix. The results of these individual evaluations were combined and presented to the entire TAC for discussion. After much discussion, a consensus was reached on the matrix scoring. The result of this process was the ranking of alternatives and the identification of one alternative within each corridor that best met the overall goals and objectives of the study as agreed to by the TAC. The alternatives that had the highest ranking were identified as the Recommended Corridors which were taken to the public and the local communities for further input and refinement (see Chapter 5 - Public and Agency Involvement).

The evaluation matrix as completed by the TAC is shown in Table 2-4.

The scores in the evaluation matrix were computed as follows: each weighting factor was multiplied by the corresponding score for each alternative. A score of 1 meant poor performance and a score of 5 meant excellent performance in relation to the other alternatives. Using the 11800 West - East Option in the North Corridor Area as an example, note that the TAC weighted the effects on the local and regional street system higher than whether the alternative is appropriately spaced from other corridors (5 to 3). Similarly, evaluation determined that the 11800 West - East Option's ability to accommodate a future extension of the Western Transportation Corridor (Legacy Parkway) was relatively poor (receiving a 2), but it's multi-modal opportunities and route operations and geometry were better (receiving a 4 and a 3, respectively). So to determine the score for the 11800 West - East Option under the Transportation System category, the following calculation was made:

$$\text{Total Score} = \sum (\text{Weighting Factor} * \text{Score}) = (4.08*5) + (3.98*5) + (4.00*3) + (2.70*4) + (2.45*2) = 67.95$$

However, the Transportation System points represent only 32% of the total points, so this number was normalized by using the following equation:

$$\text{Total Score with Percentage Applied} = \text{Total Score} / \text{Max Points} * \text{Percentage} = 67.95 / 86.0 * 32 = 25.28$$

The calculations for the other categories followed the same methodology. The scores from all the categories were summed to provide the Grand Total score for each alternative.

Detailed Impact Summary Table – Table 2-3

Table 2-3 NVCS Detailed Corridor Impact Summary

Alternative	North Options			Central Options				South Corridor - East Options			South Corridor - West Options		
	11800 West - East N-1	11800 West - West N-2	North Power Line C-1	North Power Line C-2	North Power Line/700 South C-3	South Power Line/700 South C-4	1000 South C-5	1000 South - River C-6	North Power line SE-1	South Power line SE-2	Sever Outfall line SE-3	7200 North SW-1	7600 North SW-2
Transportation System													
Effects on Local & Regional Street System	Reduces traffic on SR-73 & Redwood Road between connector points	Reduces traffic on SR-73 & Redwood Road between connector points	Better chance to pull traffic off of SR-73	Better chance to pull traffic off of SR-73	Better chance to pull traffic off of SR-73	Better chance to pull traffic off of SR-73	Better chance to pull traffic off of SR-73	Reduces 600-1000 vehicles on Main Street compared to other options	N/A	N/A	N/A	N/A	N/A
Route Operations & Geometry	Alternate connection to I-15 & Redwood Road	Alternate connection to I-15 & Redwood Road	Most direct route, several skewed intersections	Most direct route, several skewed intersections	Fewer skewed intersections	Fewer skewed intersections	No skewed intersections	Longest route	More skewed intersections	More skewed intersections	No skewed intersections, most closely matches local & regional street patterns	Most direct route, most closely matches local & regional street patterns	Less direct route
Corridor Spacing	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Close to South Corridor 7600 North (SR-2) Option	Acceptable	Acceptable	Acceptable	Best spacing with all Central Corridor Options	Close to Central Corridor 1000 South - River (C-9) Option
Multi-modal & Non-motorized Opportunities	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ability to Accommodate Future Legacy	Possible	Possible	Difficult	Difficult	Difficult	Difficult	Possible	Possible	Possible	Possible	Possible	Possible	Possible
Environmental Constraints													
Jordan River Crossings	N/A	N/A	Reconstructed/Widened Crossing on SR-73	Reconstructed/Widened Crossing on SR-73	Reconstructed/Widened Crossing on SR-73	Reconstructed/Widened Crossing on SR-73	Reconstructed/Widened Crossing on SR-73	New Crossing	N/A	N/A	N/A	Reconstructed/Widened Crossing	New Crossing
Wetlands (Acres Impacted)	0	0	2.3	2	2.2	1.8	2.8	10.4	1.6	3.5	5.4	4.6	7
Flood Plains (Acres Impacted)	0	0	6.7	7.9	10.3	10.3	10.7	11.6	0	1.1	16.6	22.9	19.9
500 Year	0	0	7.7	9	11.2	11.2	11.9	12.7	5.8	7.6	20.3	23.3	20.4
Potentially Eligible Historic Property Impacts													
Direct Impacts (<20)	0	0	0	0	0	0	0	0	3	1	0	0	0
Proximity Impacts (<100)	0	0	0	0	0	0	1	1	0	2	0	0	0
Critical Wildlife Habitat	N/A	N/A	N/A	N/A	N/A	N/A	N/A	New Jordan River Crossing	N/A	N/A	N/A	N/A	New Jordan River Crossing
Socio-Economic													
Residential Impacts													
Direct Impacts (<20)	0	0	28(1)	2	6	3	0	1	3	1	1	0	1
Proximity Impacts (<100)	0	0	5	2	3	3	5	5	2	2	3	2	5
Commercial Impacts (2)													
Direct Impacts (<20)	0	0	0	0	0	0	0	0	1	0	0	0	0
Proximity Impacts (<100)	0	0	0	0	0	0	0	0	0	1	0	0	0
Noise Impacts (Number of receptors <200')	0	0	16	17(9)	15	11	9	10	4	2	5	3	9
Social Environment													
Proximity to Schools (feet)	N/A	N/A	700 north of Show Springs Elementary	300 north of Show Springs Elementary	300 north of Show Springs Elementary	300 north of Show Springs Elementary	425 south of Show Springs Elementary	425 south of Show Springs Elementary	N/A	N/A	N/A	N/A	N/A
Compatibility With Existing Community Plans													
Impacts to Planned Developments	Beats the southwest corner of the planned Windsor Development	Beats the southwest corner of the planned Windsor Development	Beats northeast corner of Evans Development @ 2900 West/SR-73	Beats northeast corner of Evans Development @ 2900 West/SR-73	Beats northern half of Evans Development @ 2900 West/SR-73	Beats northern half of Evans Development @ 2900 West/SR-73	Beats northern half of Evans Development @ 2900 West/SR-73	Beats southern end of Evans Development @ 2900 West/SR-73	Beats Harbour Links development south of the approved 40 ac parcel	Beats Harbour Links development south of the approved 40 ac parcel	Beats Harbour Links development south of the approved 40 ac parcel	None	None
Impacts to Agricultural Protection Zones	None	None	None	None	None	None	None	Beats the northeast corner of LDS Church farm	Beats southern end of Williams farm; Beats Farm farm; Beats southern end of Allied farm	Beats southern end of Williams farm; Beats Farm farm; Beats southern end of Allied farm	Beats southern end of Farm farm	Beats LDS Church farm	Beats northern end of LDS Church farm
Impacts to Sensitive Agricultural Production Areas													
Direct Impacts (<20) to Milk Ranches	0	0	0	1	1	1	0	0	0	2	0	0	1
Proximity Impacts (<1000) to Milk Ranches	0	0	2	1	2	2	2	2	2	0	2	0	0
Ability to Preserve the Corridor	Good	Good	Difficult	Difficult	Good	Good	Good	Good	Difficult	Difficult	Good	Good	Good
Cost													
Planning Level Construction Cost Estimate (\$ Millions) (4)	5.1	6.2	31.3	27.1	27.9	26.7	26.8	27.6	21.4	22.2	20.3	28.4	29.7

(1) Includes 20 lots currently under construction @ 650 South/1900 West. Lots that would be directly impacted.
 (2) Commercial impacts do not include impacts to milk ranches. Impacts to milk ranches are addressed under the impacts to Sensitive Agricultural Production Areas.
 (3) Includes 10 lots currently under construction @ 650 South/1900 West. Lots that would be affected.
 (4) Costs do not include environmental, design, engineering, nor construction engineering costs.

Detailed Corridor Evaluation Results Table – Table 2-4

Table 2-4 NVCS Detailed Corridor Evaluation Results

Alternative	Weighting Factor 1-5	Maximum Points 5	North Options		Central Options			South Corridor - East Options			South Corridor - West Options							
			11800 West - East	N-2	North Power Line	South Power Line	North Power Lining/No South	South Power Lining/No South	1000 South	1000 South - River	North Power line	South Power line	Sewer Outfall line	7200 North	7600 North			
			N-1		C-1	C-2	C-3	C-4	C-5	C-6	SE-1	SE-2	SE-3	SW-1	SW-2			
Transportation System																		
Effects on Local & Regional Street System	4.06	5	5	3	2	2	2	2	2	2	2	3	5	5	5	5	5	
Route Operations & Geometry	3.98	5	3	2	2	2	2	2	2	1	1	3	5	4	4	4	4.5	
Corridor Spacing	4.00	5	3	2	2	2	2	2	3	3	3	3.5	4	5	5	5	4	
Multi-modal & Non-motorized Opportunities	2.70	5	4	3	3	3	3	3	3	3	3	3	3	4	4	5	5	
Ability to Accommodate Future Legacy	2.45	5	2	2	3	3	3	3	3	3	3	3	3	4	4	4	4	
Total Score		86	67.95	49.15	39.55	39.55	39.55	39.58	39.58	39.58	39.58	53.60	71.70	76.88	76.88	79.58	83.55	77.56
Total Score with Percentage Applied		32	25.28	18.29	14.72	14.72	14.73	14.73	14.73	14.73	14.73	19.94	26.68	28.60	28.60	29.61	31.09	28.86
Environmental Constraints																		
Jordan River Crossings	5	5	5	5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	4	5	5	5	5	4
Wetlands	5	5	5	4	4	4	4	4	4	4	4	4	2.5	5	4	3	5	3
Flood Plains	2.5	5	5	2	2	2	2	2	2	2	2	2	1	5	4	3	4	5
Potentially Eligible Historic Property Impacts	3	5	5	5	5	5	5	5	5	5	5	4.5	4.5	3	4	5	5	5
Critical Wildlife Habitat	4	5	4	4	5	5	5	5	5	5	5	5	3	4	4	2	5	3
Total Score		97.5	93.50	83.50	72.50	72.50	72.50	72.50	72.50	72.50	72.50	71.00	60.50	87.50	83.00	70.50	85.00	74.50
Total Score with Percentage Applied		32	30.69	30.69	23.79	23.79	23.79	23.79	23.79	23.79	23.79	23.30	19.86	28.72	27.24	23.14	31.18	24.45
Socio-Economic																		
Residential Impacts	4	5	5	5	1	2	2	3	3	3	3	3	3	2	4	3	5	3
Commercial Impacts	2.75	5	5	5	5	5	5	5	5	5	5	5	5	1	4	5	5	5
Noise Impacts	2.5	5	5	3	3	3	3	3	3	3	3	3	3	4	5	3	5	3
Social Environment	2.75	5	5	3	3	1	1	1	1	1	1	4	4	3	3	5	5	5
Compatibility With Existing Community Plans	3.25	5	5	4	1	1	1	1	1	1	1	1	1	4	4	5	4	5
Impacts to Agricultural Protection Zones	3.75	5	5	5	3	3	3	3	3	3	3	3	1	3	3	5	3	5
Impacts to Sensitive Agricultural Production Areas	2.5	5	5	2	1	1	2	2	2	2	2	2	2	3	2	5	5	3
Ability to Preserve the Corridor	4.5	5	4	5	1	1	1	1	1	1	1	3	4	3	4	5	3	5
Total Score		130	125.50	126.75	57.50	53.50	60.00	60.00	60.00	60.00	60.00	77.25	74.25	74.25	95.00	117.00	110.25	112.00
Total Score with Percentage Applied		26	25.10	25.35	11.50	10.70	12.00	12.00	12.00	12.00	12.00	15.45	14.85	14.85	19.00	23.40	22.05	22.40
Cost																		
Planning Level Construction Cost Estimate (\$ Millions)	5	5	3	2.5	5	5	4	5	5	4	5	5	4.5	4	3	5	5	4
Total Score		25	25.00	15.00	12.50	25.00	25.00	20.00	25.00	25.00	25.00	25.00	22.50	20.00	15.00	25.00	25.00	20.00
Total Score with Percentage Applied		10	10.00	6.00	5.00	10.00	10.00	8.00	10.00	10.00	10.00	10.00	9.00	8.00	6.00	10.00	10.00	8.00
Grand Total		100	91.07	80.33	55.01	59.21	56.52	60.52	60.52	60.52	66.70	70.39	80.17	80.17	80.85	86.15	94.32	83.71
Final Ranking		1	2	6	4	5	3	3	3	3	2	2	1	3	2	1	1	2

2.8 Detailed Corridor Area Evaluation Results

Once all of the alternatives were evaluated and scored, the Grand Total scores as shown in Table 2-4 were compared to rank each alternative. The final row in Table 2-4 shows the Final Ranking for each of the alternatives. The final rankings and selection of Recommended Options are discussed in the paragraphs that follow and are shown in Figure 2-20 along with the alternatives that were eliminated through the evaluation process.

North Corridor Area

In the North Corridor Area, the 11800 West - East Option was selected as the Recommended Corridor. Though the Environmental and Socio-Economic Constraints scores were nearly identical for the two options, this option better met the Transportation System criteria, was less costly to construct, and fit in better with the master plans of Saratoga Springs.

Central Corridor Area

In the Central Corridor Area, the 1000 South - River Option was selected as the Recommended Corridor closely followed by the 1000 South Option. Though the Environmental and Socio-Economic Constraints scores were lower for this option, the Transportation System and Cost scores were enough higher that it emerged as the highest scoring alternative. The biggest concerns associated with this option are the new bridge across the Jordan River which would be required and the impacts to the adjacent wetlands. Because these concerns affect sensitive environmental issues that may be difficult to resolve, it was agreed by the TAC that if these issues could not be resolved through the Army Corps of Engineers (COE) Section 404 permitting process, then the 1000 South Option would be pursued as the Recommended Corridor. Additional discussion on this issue is provided in Section 2.9 - Recommended Corridors.

South Corridor Area

On the east end of the South Corridor Area, the Modified Sewer Outfall Line Option was selected as the Recommended Option. Though this option had more environmental impacts and was more costly, it had substantially fewer socio-economic impacts and better fit with the master plans of American Fork, Pleasant Grove, and Lindon. On the west end of the corridor area, the 7200 North Option was selected as the Recommended Option as it scored higher in three of the four evaluation categories and had more support from Saratoga Springs, the only community which was affected by the west end options.

2.9 Recommended Corridors

Once the Recommended Corridors emerging from the evaluation process were selected by the TAC, the next step was to present them to the PAC, the general public, and the local community planning commissions and city councils for further comments, suggestions, and input. Discussion on the public involvement process is provided in Chapter 5. Comments from these groups were evaluated and incorporated into the alternatives to further refine the alternatives. Important modifications to the alternatives resulting from the public and local community involvement are discussed in the following paragraphs. The end result of this process was the identification of the Recommended Corridors for the North Valley Connectors Study which each community will adopt into their master transportation plans. These final Recommended Corridors are shown in Figure 2-21.

North Corridor Area Recommended Corridor

After discussions with Saratoga Springs, the City Council determined that the 11800 West - East Option would be better if it was located at 11600 West instead of 11800 West. They felt that this location would work better with the City's General Plans. This change was presented to the TAC and was agreed to by the TAC. Therefore, the North Corridor Area Recommended Corridor was modified to follow an alignment generally along 11600 West. This is shown in Figure 2-21.

Central Corridor Area Recommended Corridor

The Recommended Corridor in the Central Corridor Area underwent intense scrutiny by Lehi City and the general public. This resulted in more options which were further evaluated and discussed with Lehi City and the TAC. The two main unresolved issues associated with the corridor were the connection to SR-73 on the west side of the corridor and the potential for locating the corridor along the existing 700 South alignment instead of along a new alignment on 1000 South as recommended by the TAC.

As mentioned in Section 2.8 - Evaluation Results, the 1000 South - River Option was selected as the Recommended Option. However, this option has greater wetland impacts than the 1000 South Option and requires a new crossing of the Jordan River while the 1000 South Option utilizes the existing crossing on SR-73. The TAC expressed concern that because of these issues, this option may not be able to obtain a Section 404 permit from the COE and, thus, would not be able to be constructed. Conversely, it was also felt that the existing SR-73 crossing of the Jordan River was at a bad location on the river due to the large oxbow immediately south of SR-73 and a better crossing could be developed south of the oxbow. The new crossing would have fewer long term impacts to the river even if more wetlands may be impacted to implement it.

This dilemma was presented to the COE for their input. Per their regulations, the COE could not officially comment on the two alternatives until a formal wetland delineation of both alternatives was conducted and submitted to them. However, this level of work was outside the scope of the NVCS project. Therefore, it was determined that two corridors on the west end should be identified for preservation until the wetland issue can be resolved and one of the alternatives is selected. Saratoga Springs is supportive of both alternatives as long they tie into SR-73 prior to the city limits just west of the river. As a temporary solution to this dilemma, the Recommended Corridor in the Central Corridor Area shown in Figure 2-21 has two alignments on the west end - the original 1000 South Option terminus and a modified 1000 South - River Option terminus. The modified 1000 South - River Option is preferred alternative.

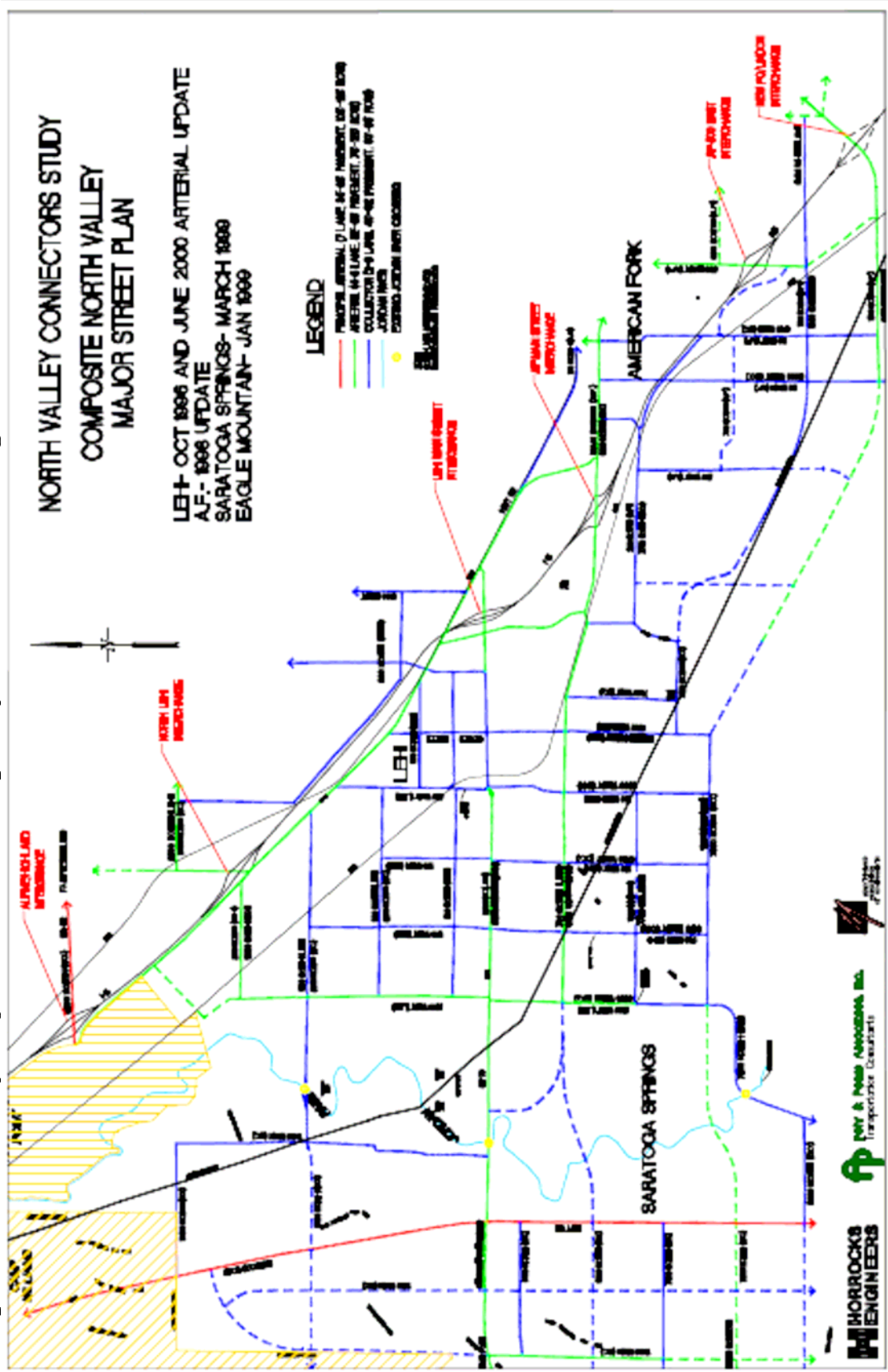
After the selection of the Central Recommended Corridor by the TAC, but before the corridor was presented to the general public, Lehi City requested that an option along 700 South between the UPRR tracks and the Utah Power line corridor be included for public comment and further evaluation. This option had been previously eliminated as part of the preliminary corridor screening process, but Lehi City wanted to re-address this option because 700 South was already on the city master plan as an arterial street. After several rounds of discussion with the public, planning commission and city council and after additional travel demand modeling was

performed to specifically look at this alternative, the planning commission and city council again eliminated the 700 South option. The primary reasons for its elimination included its inability to accommodate the future travel demand as well as the 1000 South Option, the large impacts to existing residential properties fronting on 700 South, and the strong opposition to this alternative from the general public. Therefore, the Recommended Corridor as shown in Figure 2-21 follows the 1000 South alignment as originally recommended by the TAC.

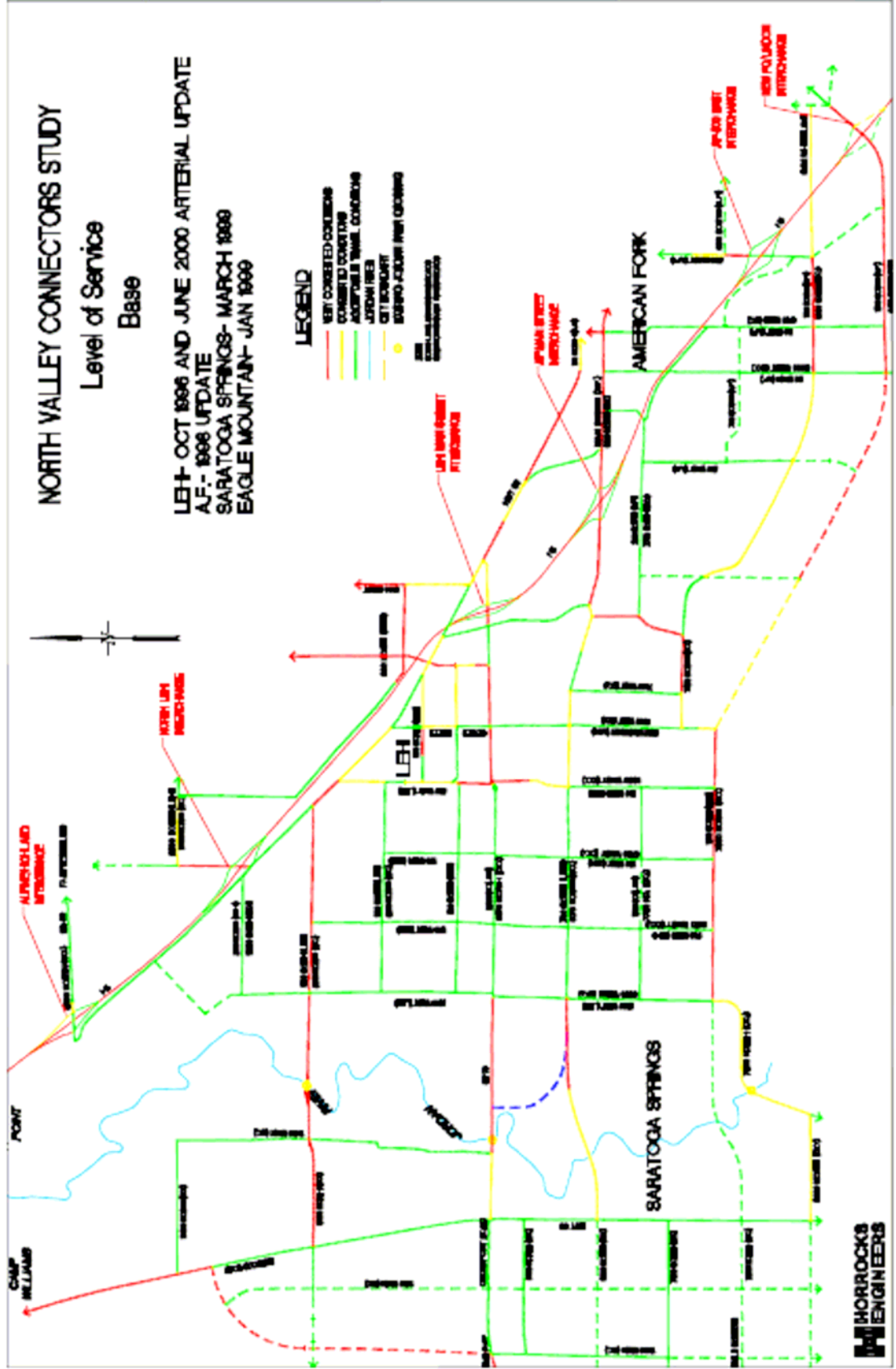
South Corridor Area Recommended Corridor

The Recommended Option in the South Corridor Area was supported by all entities and the general public. As such, no changes were made to the Recommended Corridor as selected by the TAC and shown in Figure 2-21.

Composite North Valley Major Street Plan Map (City Master Plans) – Figure 2-1



2030 Level of Service – Composite North Valley Major Street Plan Map – Figure 2-2



2030 Level of Service – North Corridor 7 Lanes Alternative Map - Figure 2-3

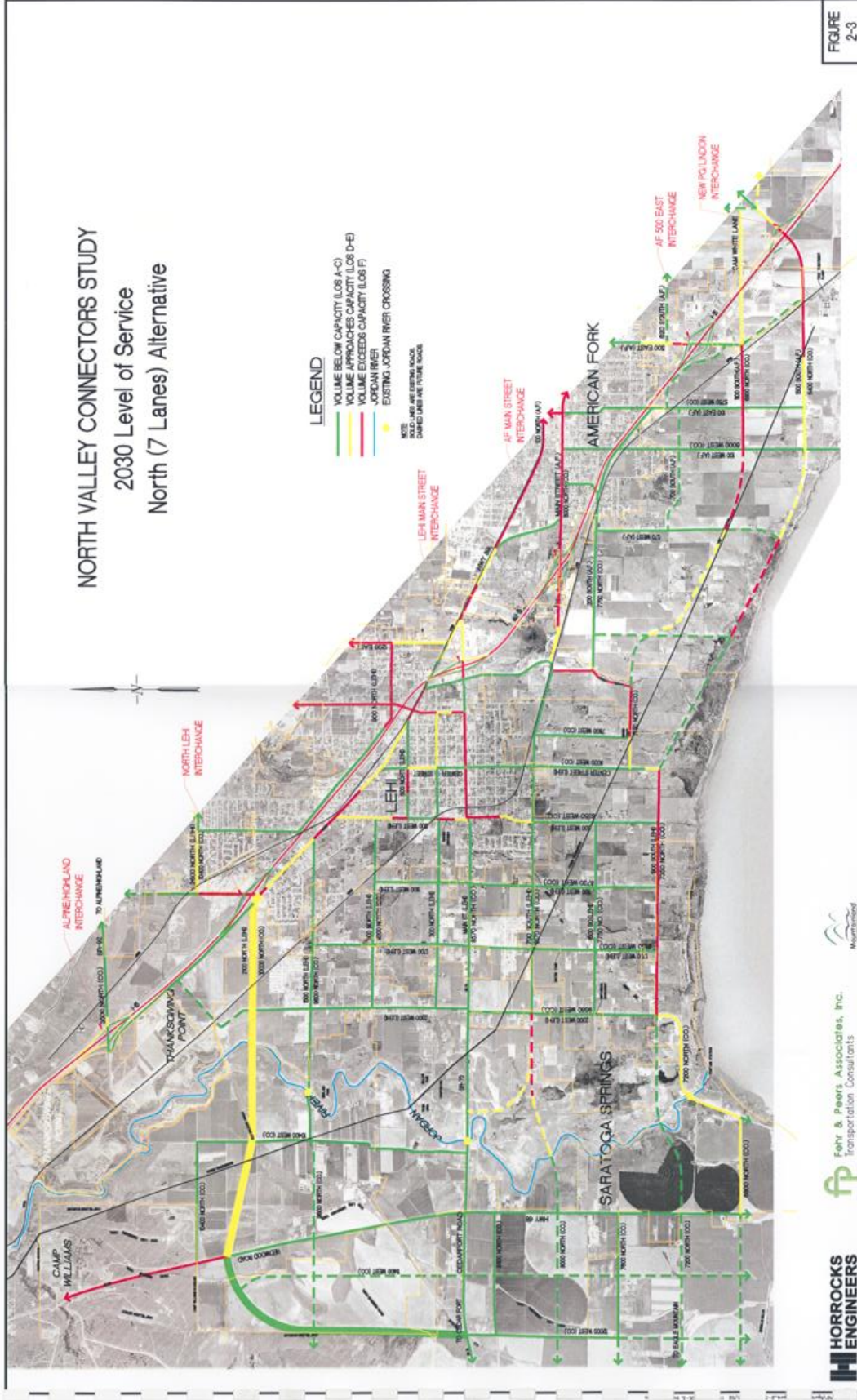


FIGURE 2-3

2030 Level of Service – Central Corridor 7 Lanes Alternative Map - Figure 2-4

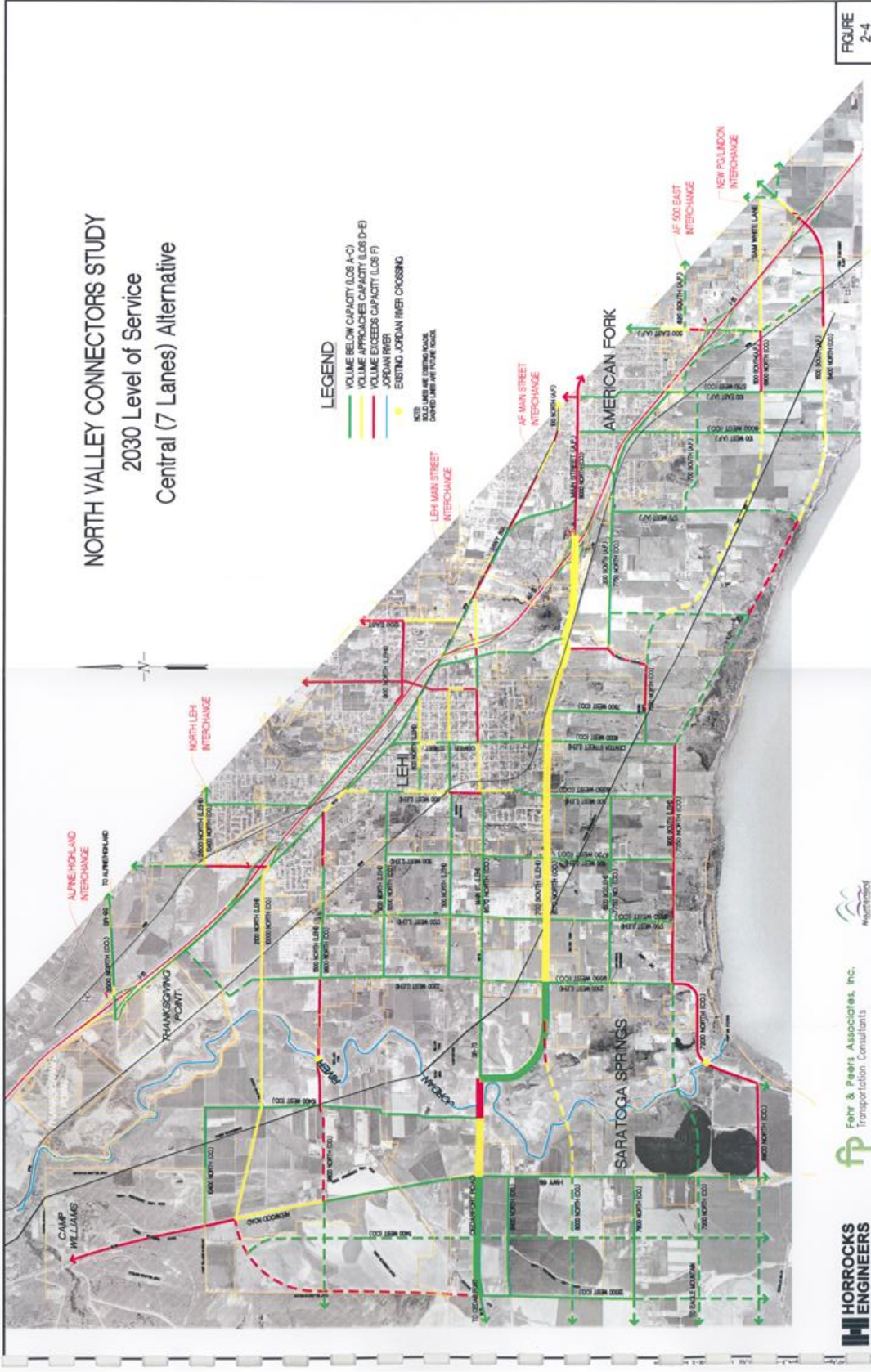
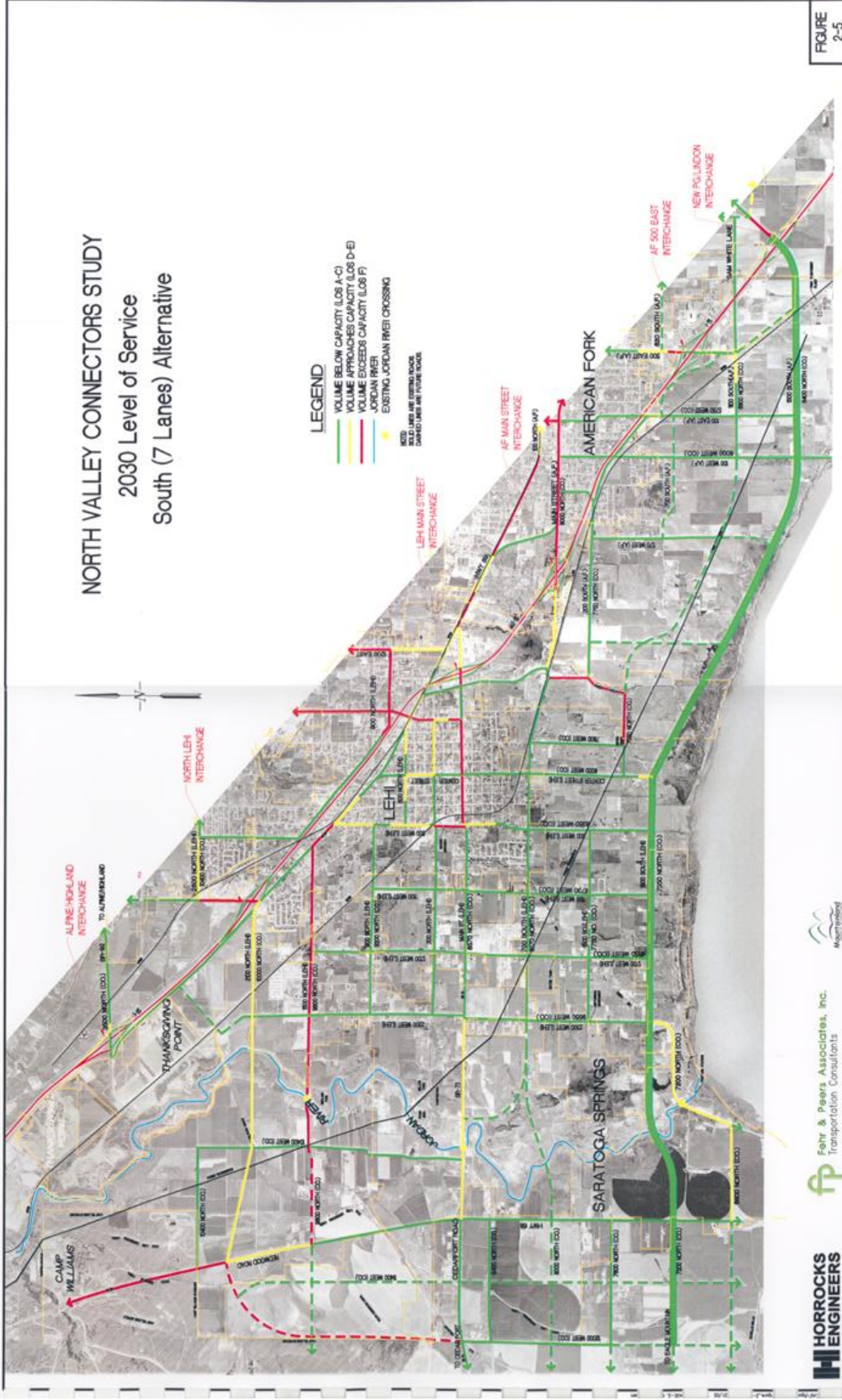
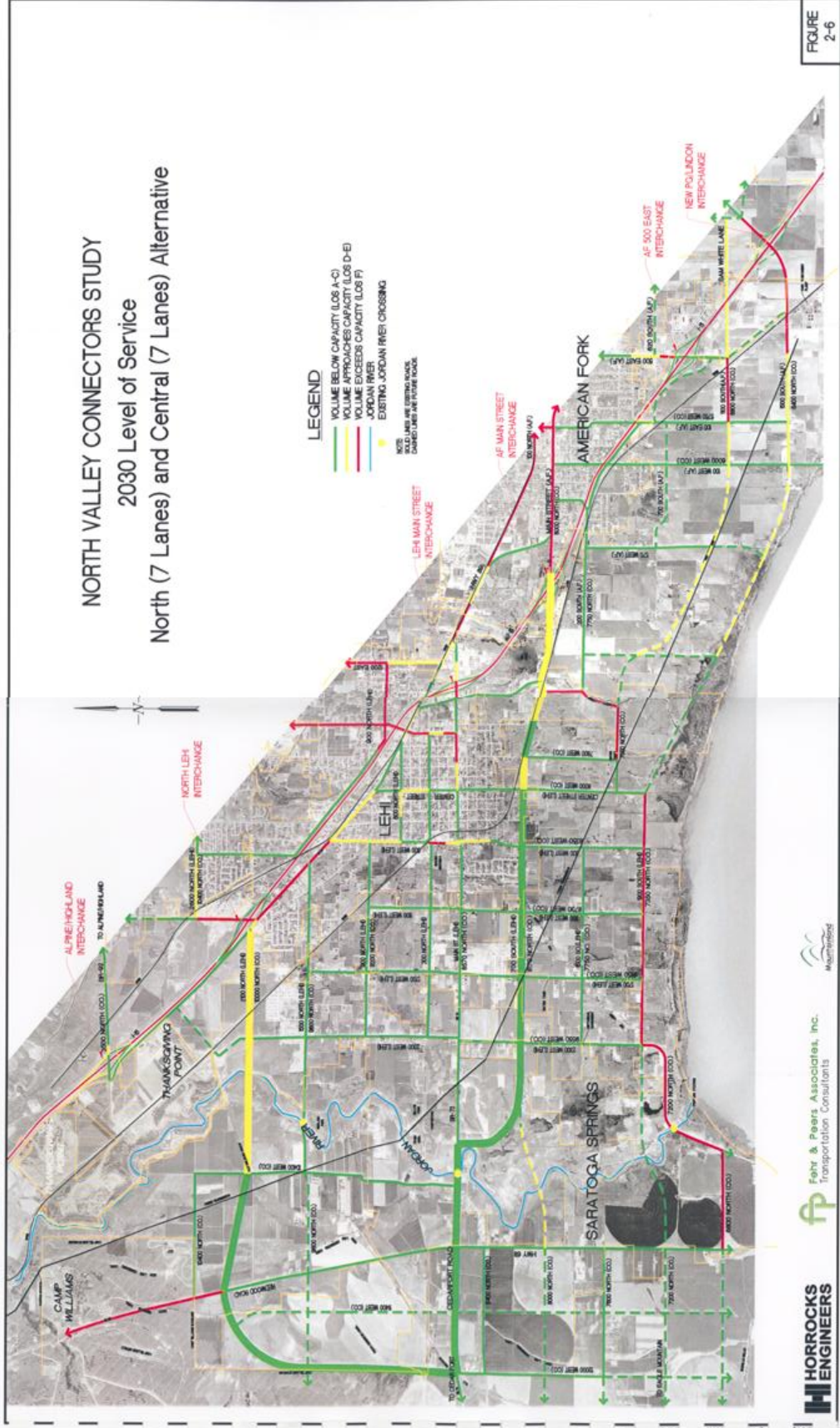


FIGURE 2-4

2030 Level of Service – South Corridor 7 Lanes Alternative Map - Figure 2-5



2030 Level of Service – North and Central Corridors 7 Lanes Alternative Map - Figure 2-6



2030 Level of Service – North and South Corridors 7 Lanes Alternative Map - Figure 2-7

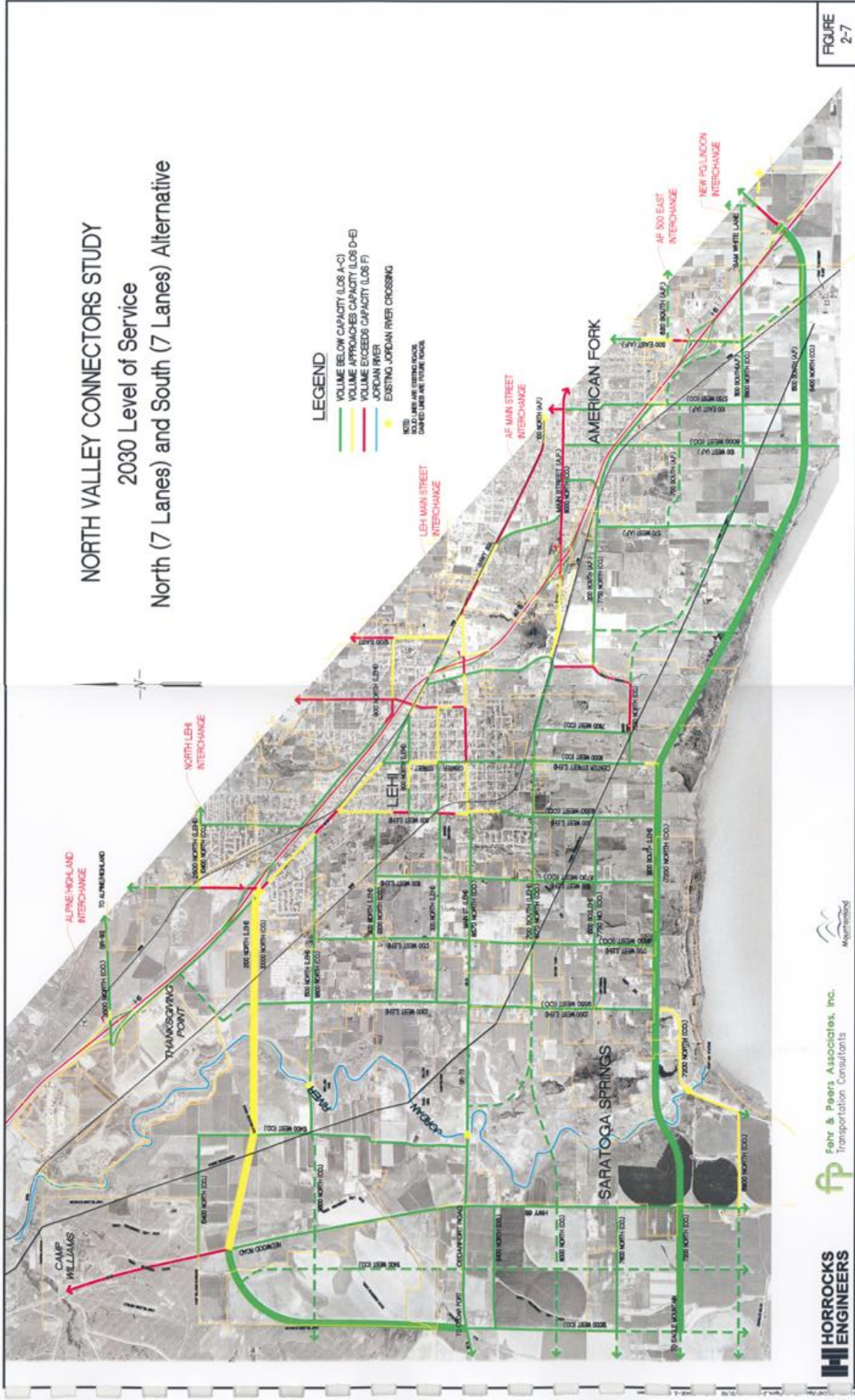
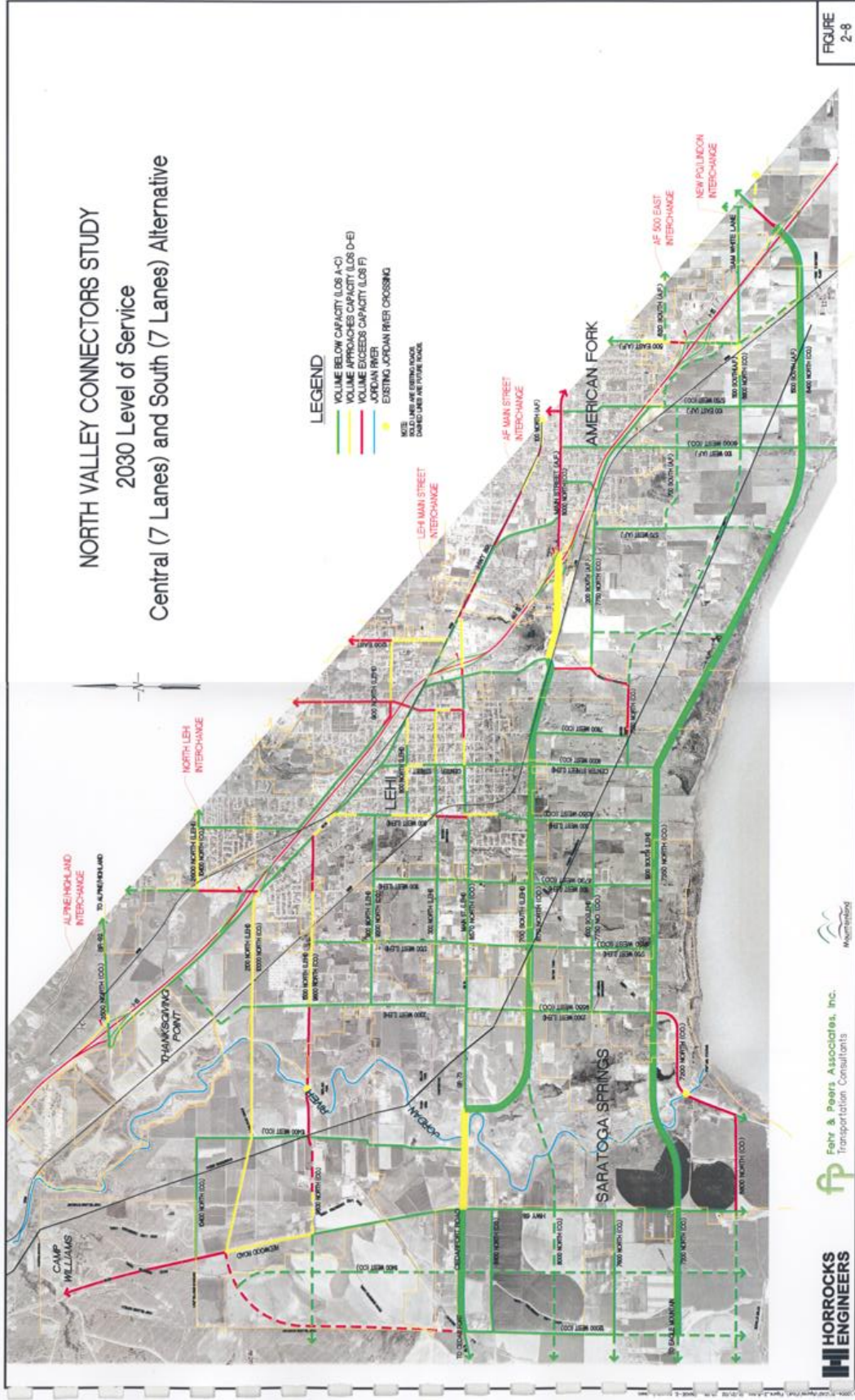
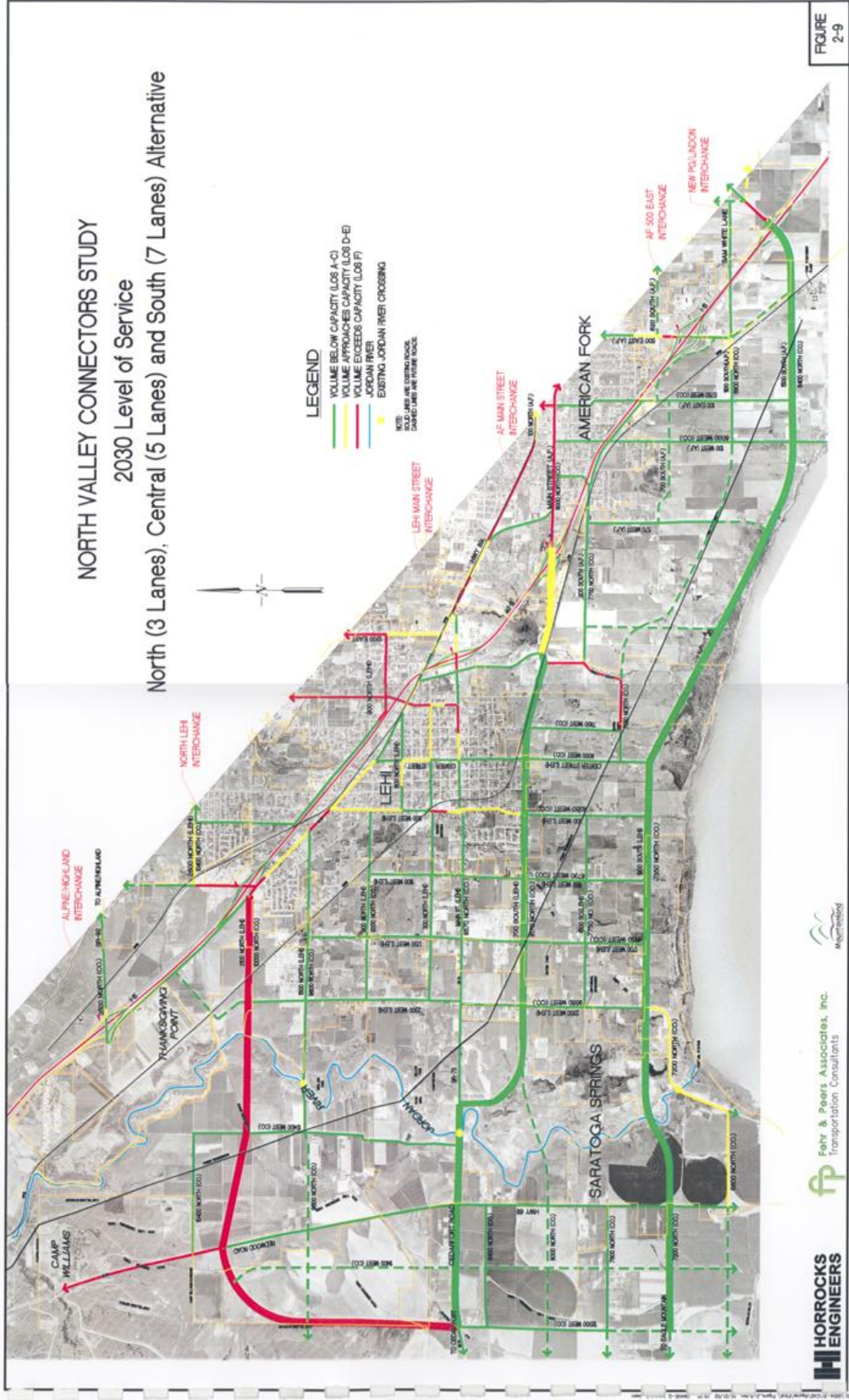


FIGURE 2-7

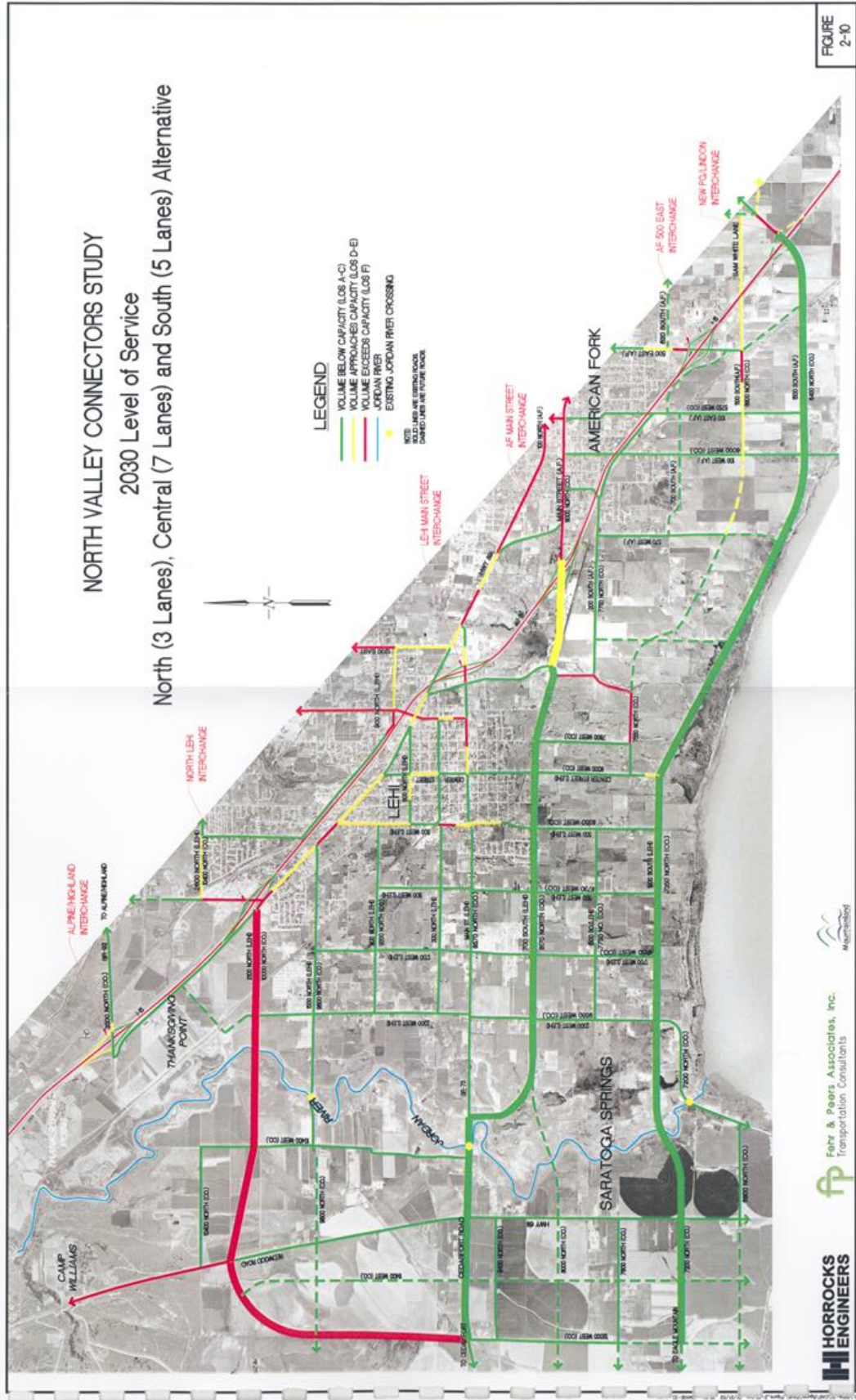
2030 Level of Service – Central and South Corridors 7 Lanes Alternative Map - Figure 2-8



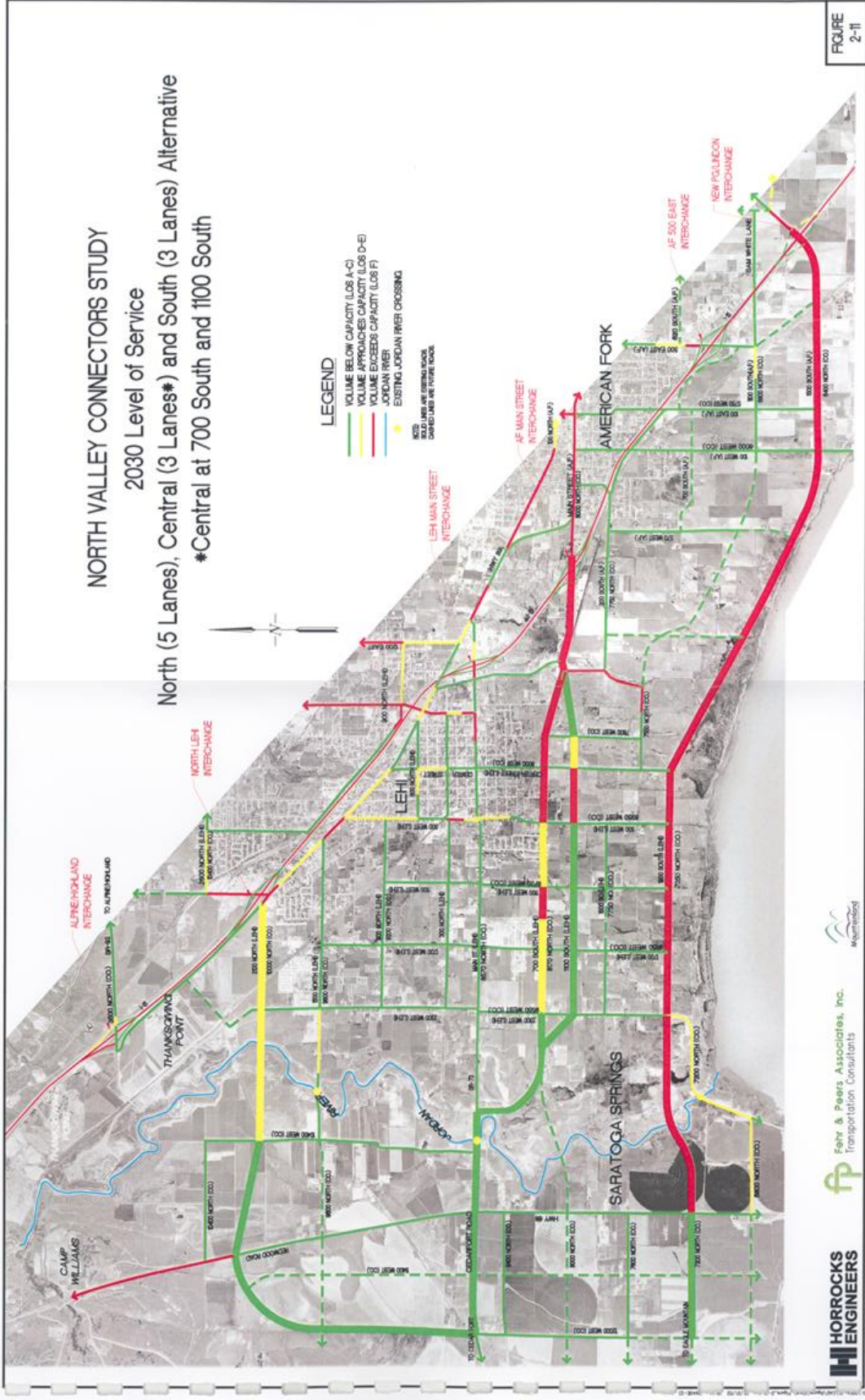
2030 Level of Service – North 3 Lanes, Central 5 Lanes, South 7 Lanes Alternative Map - Figure 2-9



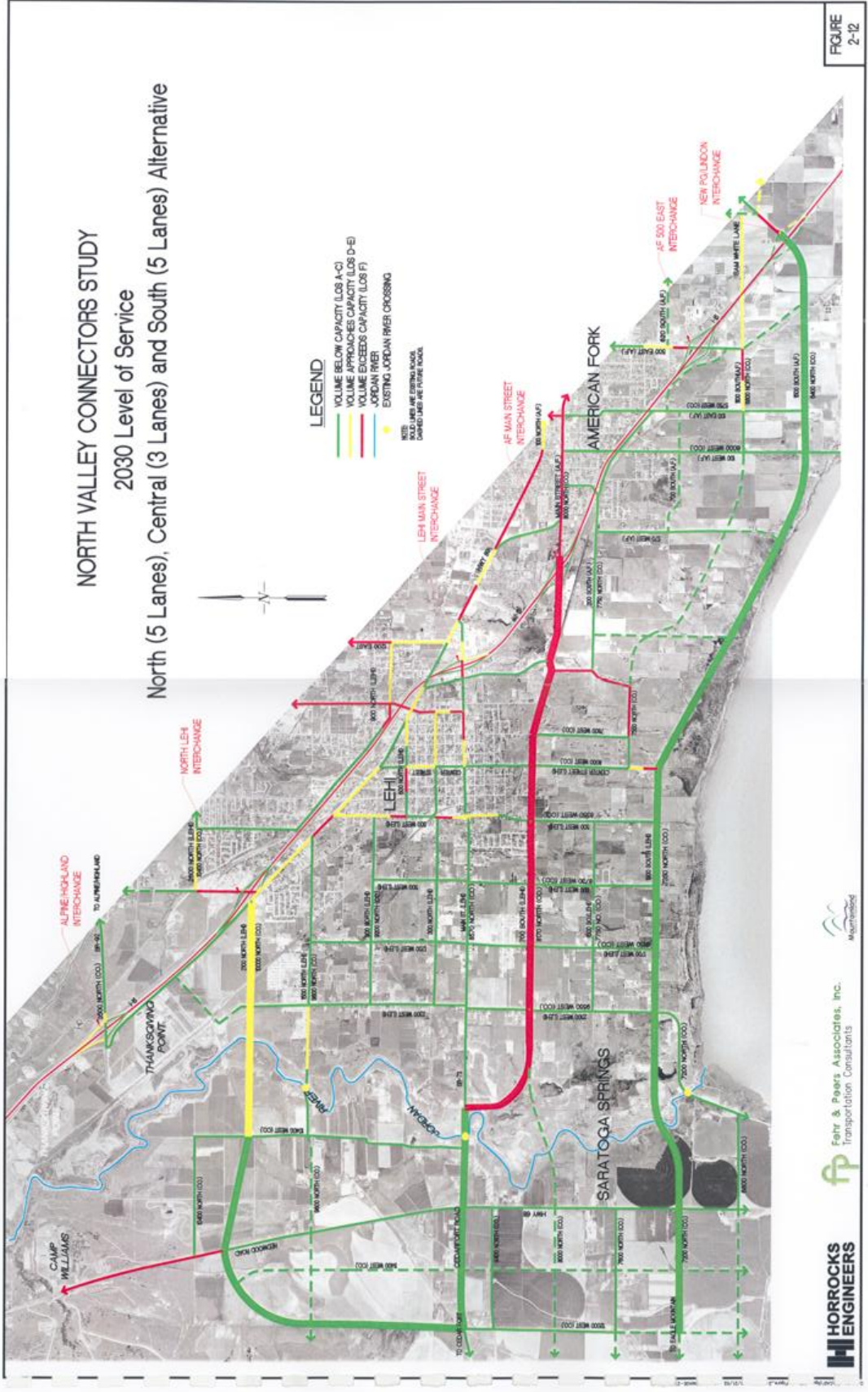
2030 Level of Service – North 3 Lanes, Central 7 Lanes, South 5 Lanes Alternative Map - Figure 2-10



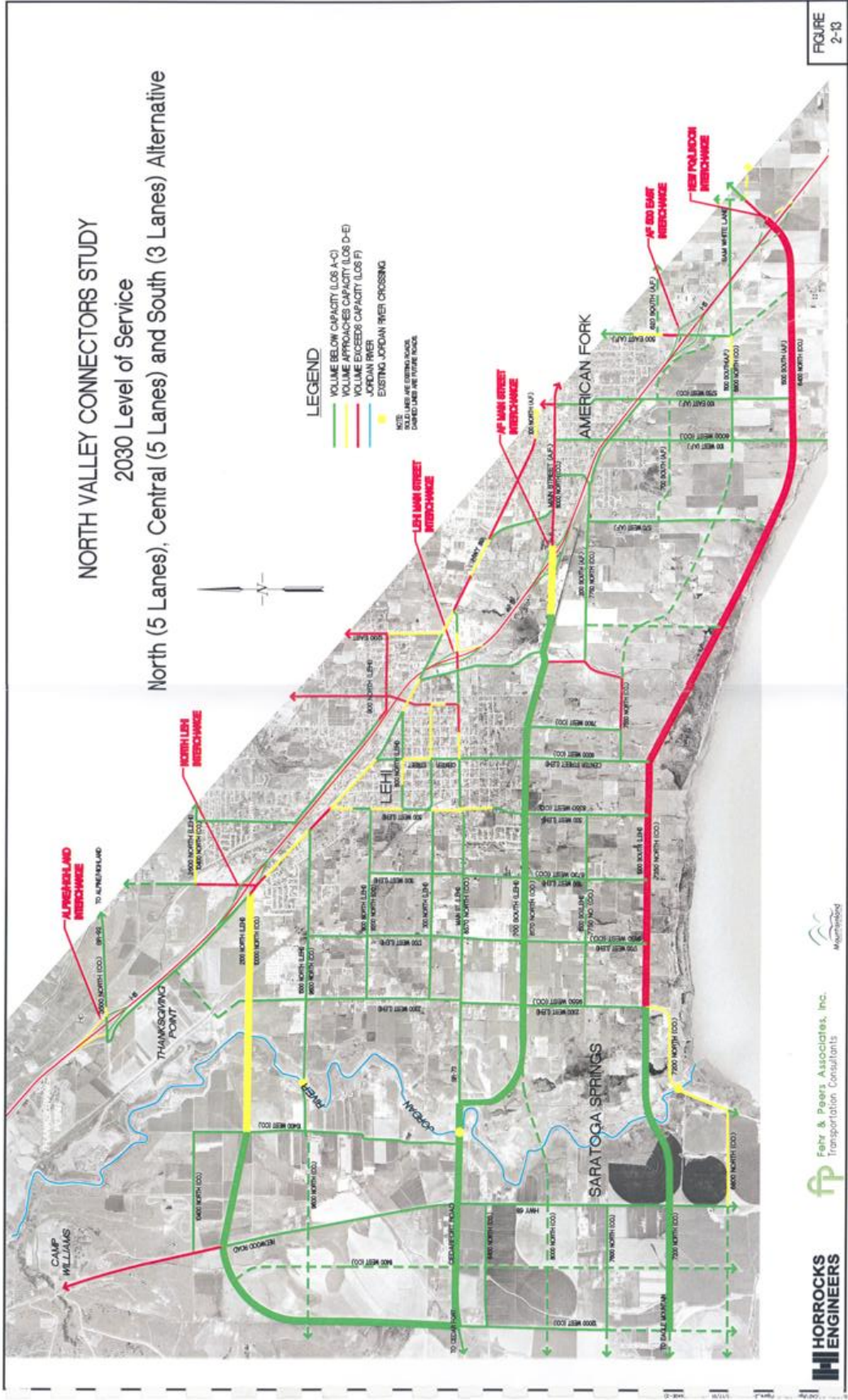
2030 Level of Service – North 5 Lanes, Central 3 Lanes, South 3 Lanes Alternative Map - Figure 2-11



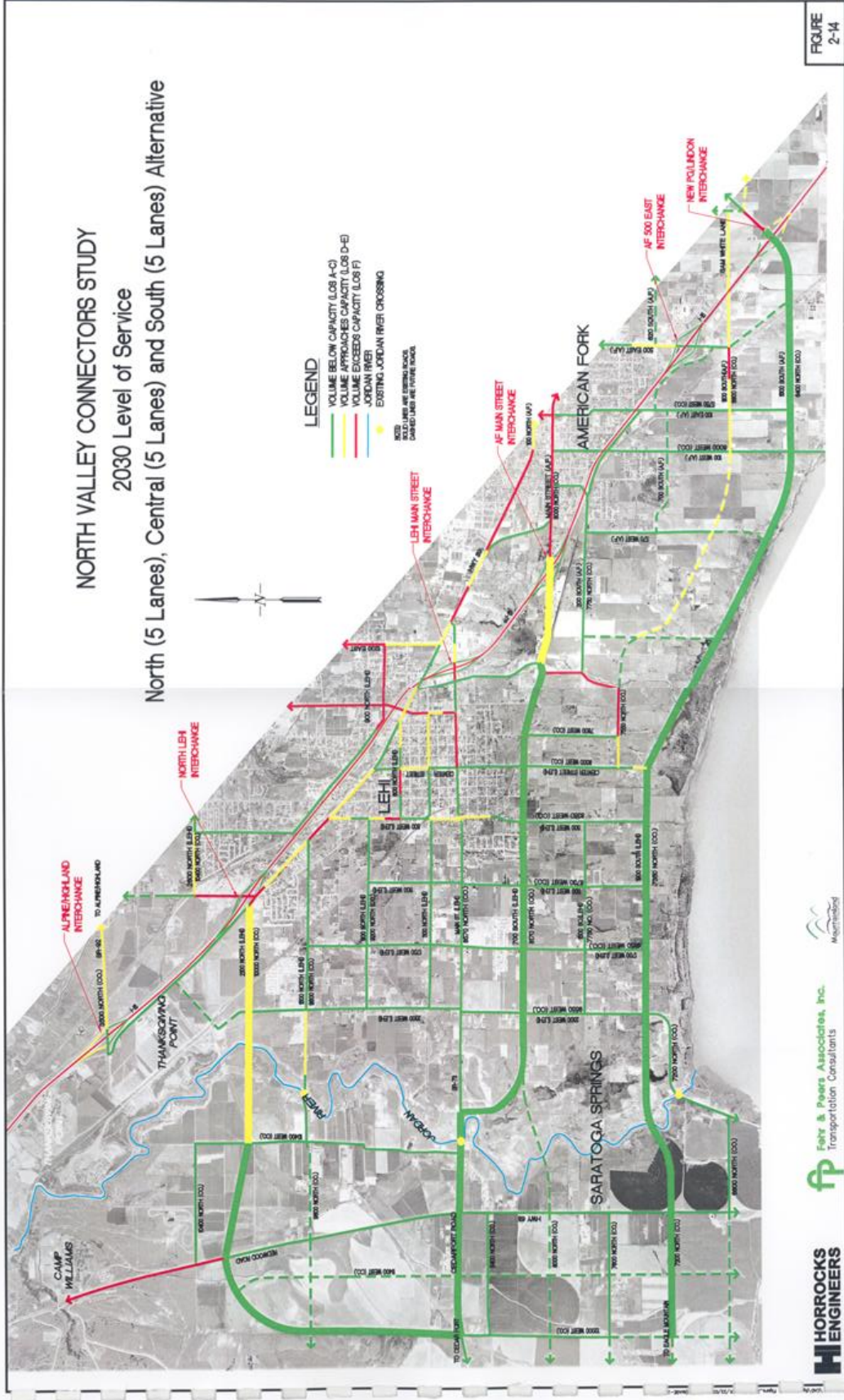
2030 Level of Service – North 5 Lanes, Central 3 Lanes, South 5 Lanes Alternative Map - Figure 2-12



2030 Level of Service – North 5 Lanes, Central 5 Lanes, South 3 Lanes Alternative Map - Figure 2-13



2030 Level of Service – North 5 Lanes, Central 5 Lanes, South 5 Lanes Alternative Map - Figure 2-14



2030 Level of Service - North 5 Lanes, Central 7 Lanes, South 3 Lanes Alternative Map - Figure 2-15

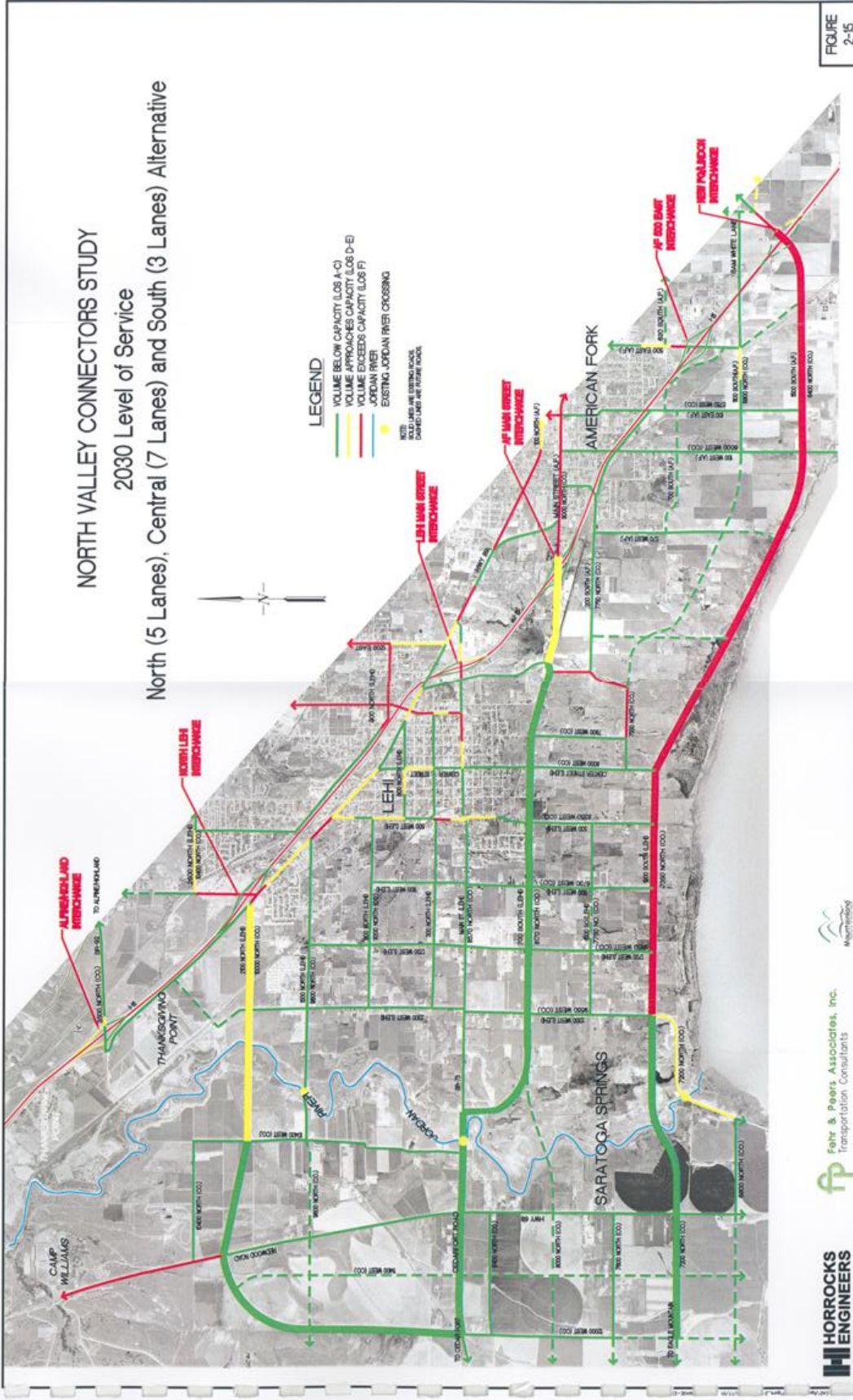
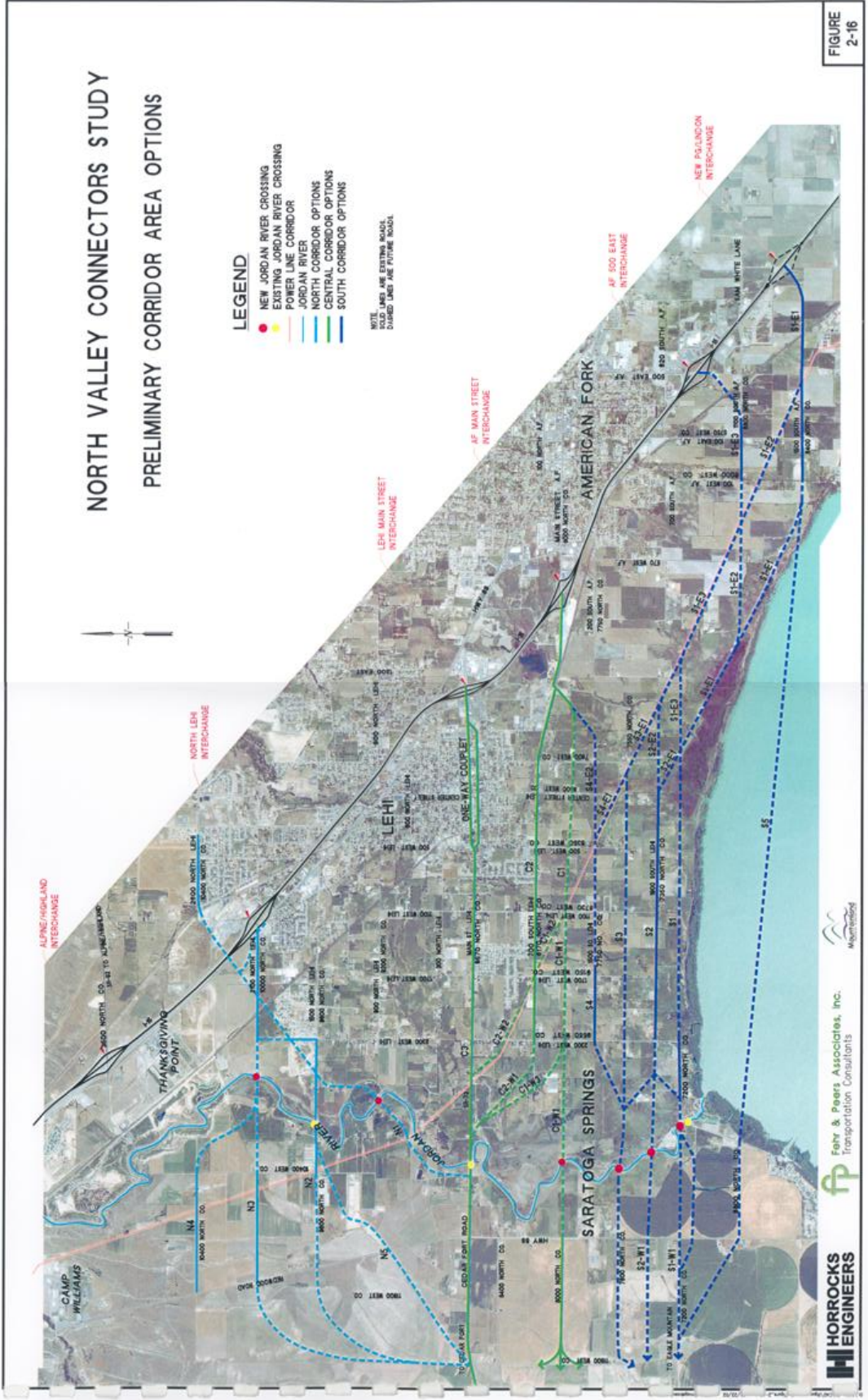
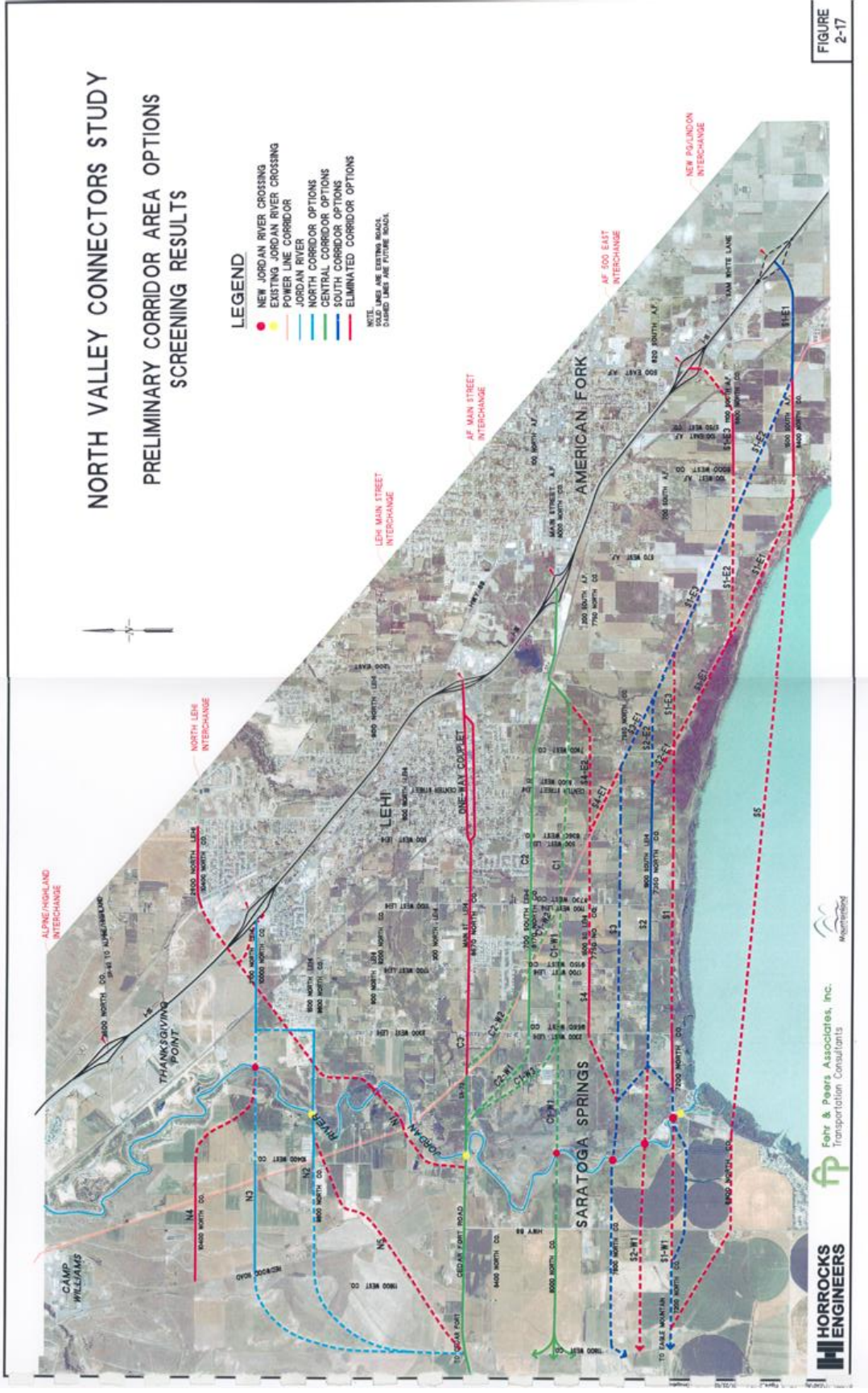


FIGURE 2-15

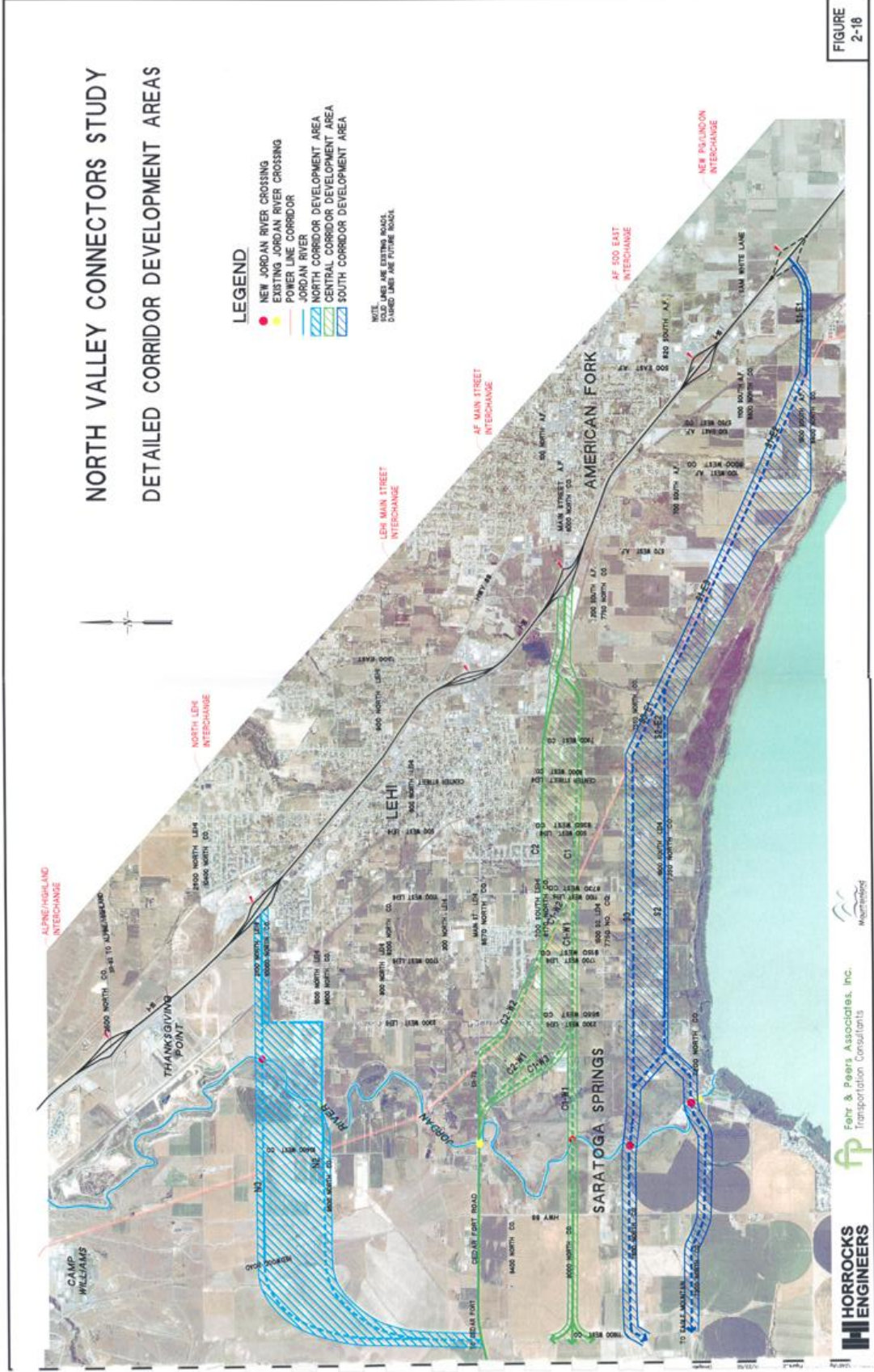
Preliminary Corridor Area Options - Figure 2-16 Map



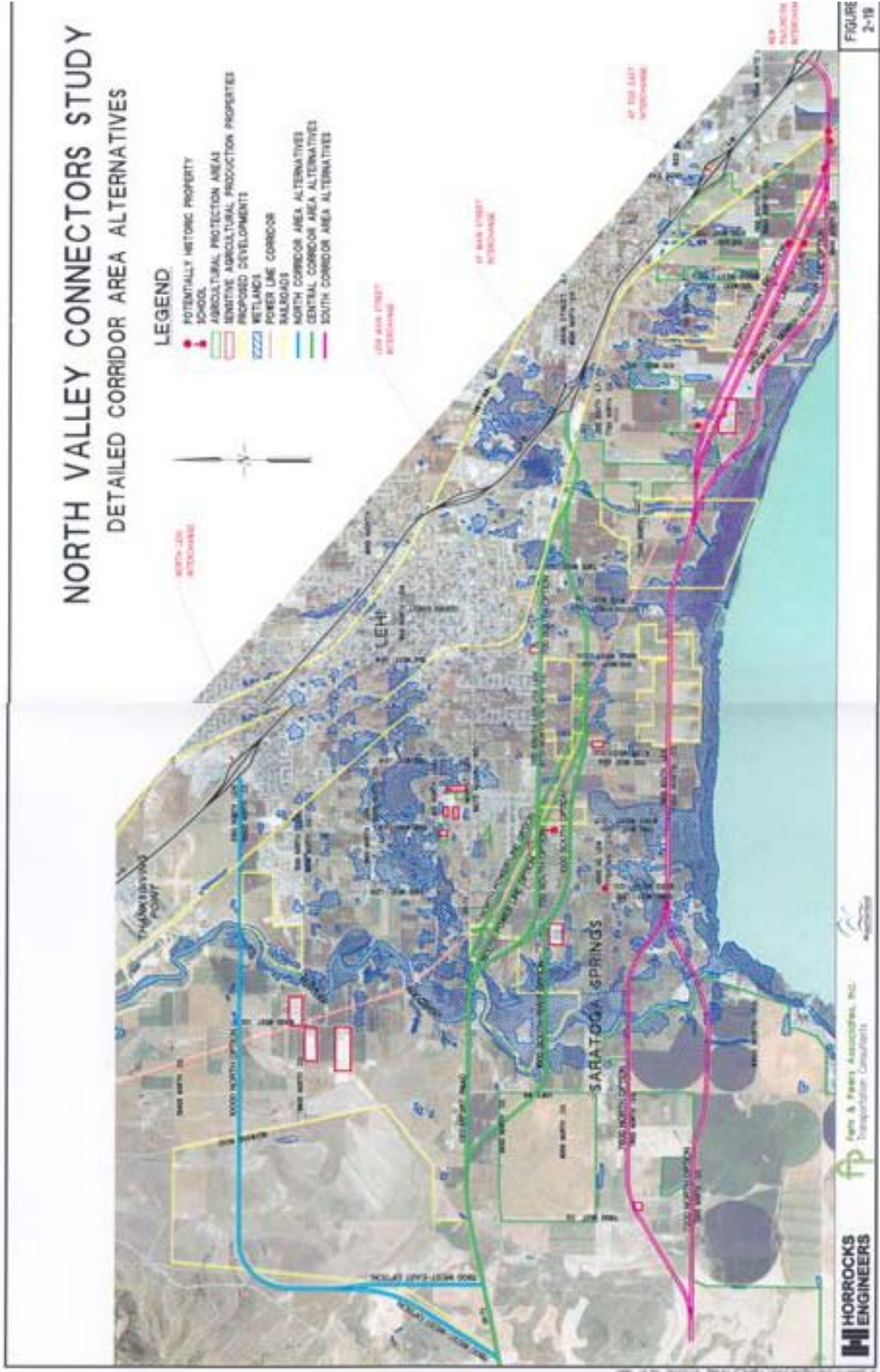
Preliminary Corridor Area Options Screening Results - Figure 2-17 Map



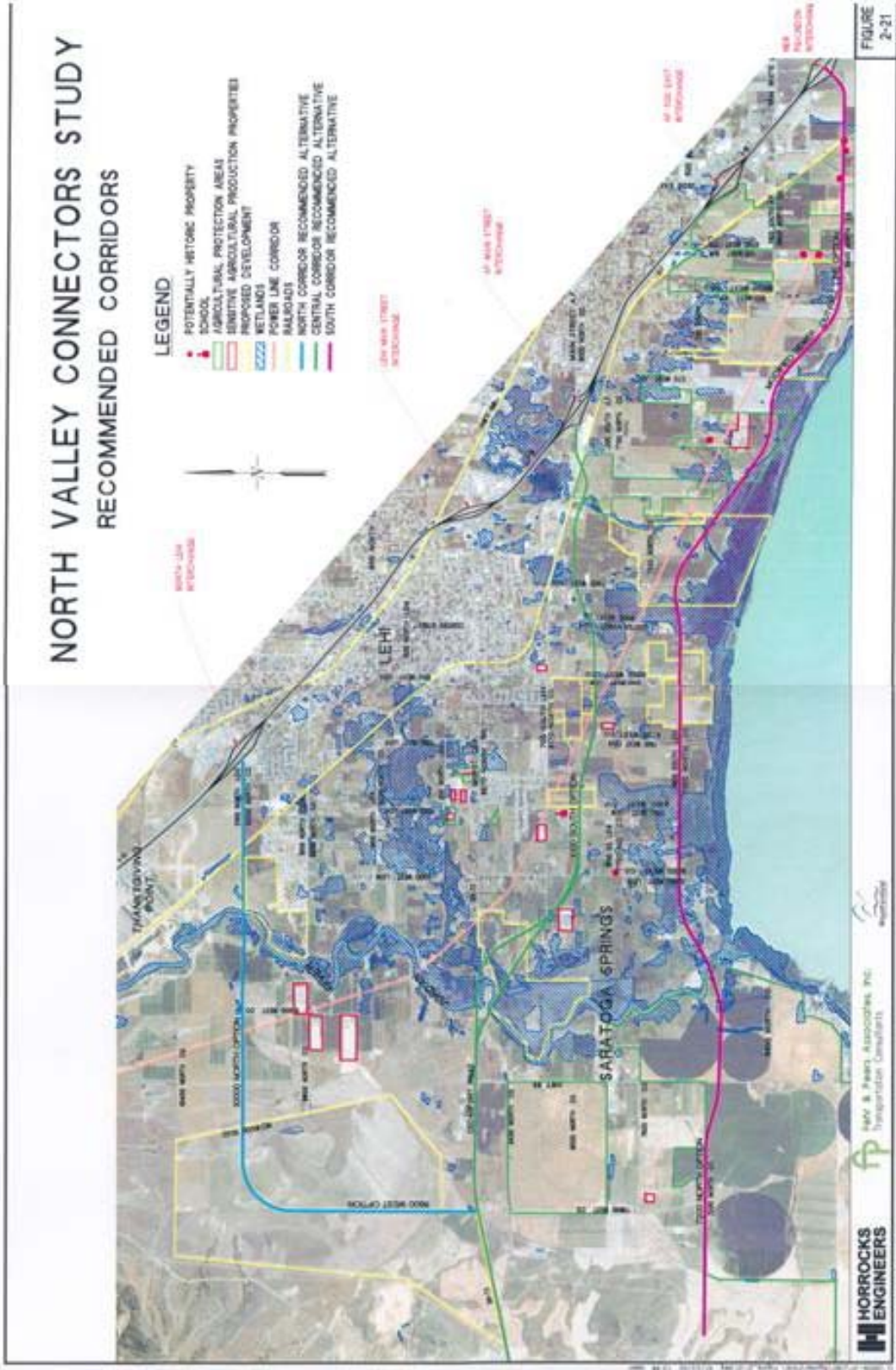
Detailed Corridor Development Areas - Figure 2-18 Map



Detailed Corridor Area Alternatives - Figure 2-19



Recommended Corridors - Figure 2-21 Map



3.0 Environmental Screening

The purpose of this chapter is to identify and summarize potential environmental impacts that might occur with the development of the Recommended Corridors. As any of the Recommended Corridors will likely have to undergo a detailed environmental analysis and study as part of the NEPA requirements before they can be constructed, one of the important objectives of the North Valley Connectors Study was to select corridors that avoided or minimized environmental impacts. As discussed in Chapter 2, during the preliminary screening process some alternatives were quickly eliminated from consideration because of significant environmental consequences which could prevent their advancement through a NEPA analysis. During the screening of the detailed corridor alternatives both natural and socio-economic environmental impacts were heavily weighted as part of the corridor evaluation process. The environmental screening was based on an overview of critical environmental categories contained in the NEPA guidelines and other related federal statutes.

Throughout this study, coordination with federal and state environmental resource agencies was maintained. Information in this chapter is based, principally, on subjective analyses as the NVCS project only conducted a very cursory environmental screening. Detailed evaluation, classification or delineation, and mitigation of environmental impacts were beyond the scope of this study. As such, further environmental analysis will most likely be required before any of the Recommended Corridors can be implemented. Future analysis would include a much more detailed and formal evaluation of environmental categories as prescribed by the NEPA and other federal statutes.

The following environmental information is organized by environmental category. Environmental conditions and impacts that may occur from development of the Recommended Corridors are listed underneath each category. Only the more critical environmental issues that would typically present a fatal flaw in the development of the Recommended Corridors are discussed.

3.1 Land Use

One of the reasons for identifying and preserving corridors now is to locate them on undeveloped land wherever possible. Most of the Recommended Corridors are located in areas that are still primarily rural although there are pockets of already developed land as well as many other areas that are rapidly developing. Land uses within the three corridor areas consist primarily of undeveloped land, existing and planned residential developments, existing and planned commercial developments, farming and agricultural, utility and railroad corridors, open space, and some limited industrial areas.

Utility and Railroad Corridors

All of the Recommended Corridors cross the Utah Power line corridor and the UPRR corridor (old D&RGW line). Grade separated crossings will be required for the UPRR corridor. These would probably be overpass crossings where the new corridor would go over the railroad tracks. Where each corridor crosses under the Utah Power line corridor, it may be necessary to relocate some of the towers and poles. The Utah Power line and UPRR corridors are shown in Figure 3-1.

Parks and Recreation Facilities

There are no parks in the study area that are affected by any of the Recommended Corridors. The Jordan River Parkway Trail is planned to eventually parallel the Jordan River the entire length of the study area. All of the Recommended Corridors will involve new or reconstructed bridges over the Jordan River. These bridges will need to be designed to accommodate the trail.

Schools

There is one school, Snow Springs Elementary, located in Lehi immediately adjacent to the Central Corridor on the north side of the corridor on 1700 West as shown in Figure 3-1. At the present time, very few school age children arrive to the school from the south via walking. However, this is expected to change as the area around the school develops. The corridor will need to be designed to address the school age pedestrian traffic that will need to cross the corridor.

To the south of the North Corridor between 2100 North and 1500 North and between the Jordan River and the UPRR corridor, the Alpine school district has plans for a new school facility. Depending on the final location and type of school, the North Corridor may need to be designed to address school age pedestrian traffic issues surrounding the corridor.

No schools will be impacted directly by the Recommended Corridors nor will a relocation be required. It is likely that implementation of the Recommended Corridors will impact school boundaries. However, the specific changes cannot be predicted at this time. It should be noted that the public has expressed concerns about safety, access, and school boundaries. These issues will all be addressed in greater detail in the NEPA analysis for each corridor.

Open Lands

There is no formally dedicated “Open Space” within the study area that would be affected by the implementation of any of the Recommended Corridors.

Property Ownership

Property ownership in the study was generally not collected as part of the study. However, there were several key properties such as farmlands, planned developments, and mink farms for which property ownership information was collected. These are discussed in later sections in this chapter.

Proposed Developments

There are several proposed developments throughout the study area in all three corridor areas. Many of the proposed developments, both residential and commercial, significantly affected the location of the Recommended Corridors. There were also many individuals throughout the study area that contacted the Consultant Team about plans they had for their properties. Most of these were conceptual plans and nothing formal had been presented to the local jurisdictions for any type of approval. As such, early on in the study process it was determined by the TAC that only properties which had received some type of preliminary or final approval from the local

jurisdictions would be considered in the study. Every attempt was made throughout the duration of the study to obtain the latest information from the local jurisdictions on planned developments within the study area. However, with the rapid growth that is currently being experienced in the study area, it was impossible to keep ahead of every development and avoid impacts to all of them.

Every attempt was made to avoid or minimize impact to proposed developments. However, there were some proposed developments that could not be avoided and will suffer some impacts when the Recommended Corridors are implemented. The two proposed development areas which will be impacted the greatest are the development on the southeast corner of 1700 West and 700 South in the Central Corridor Area and the developments on 1900 South between 1100 West and about 300 West in the South Corridor Area. The proposed developments which were considered in the study are outlined in yellow on Figure 3-1.

Farmlands and Agricultural Protection Areas

Farmlands that might be prime, unique, or of statewide or local importance were not formally identified in this study. The existence of prime, unique, or important farmlands will be fully evaluated in the NEPA analysis that will follow this study. However, there are several areas which have been designated as “Agricultural Protection Areas” within the study area. These are mostly farming areas which have received special zoning protection from the local jurisdictions to preserve the area as open space related to agriculture. They are mostly used to raise crops and livestock. These areas are outlined in green on Figure 3-1.

Every attempt was made to avoid and minimize impacts to Agricultural Protection Areas. However, complete avoidance was impossible. The most significant area impacted is along 7200 North west of the Jordan River in the South Corridor Area in Saratoga Springs. This farmland is owned by the Church of Jesus Christ of Latter-Day Saints (LDS Church). If these areas remain in agriculture, farm equipment access must be provided to permit movement of machinery between parcels.

Sensitive Agricultural Production Properties

Within the study area, there are several large mink ranching operations. These areas are referred to as “Sensitive Agricultural Production Properties” in the study and are outlined in red on Figure 3-1. Mink are very sensitive to light, noise, and ground vibrations. Changes to their environment can have dramatic effects on their breeding cycles. Therefore, even if a corridor does not directly impact a mink ranch, it can have significant secondary or indirect impacts if it is located too close. Every attempt was made to locate the Recommended Corridors as far away as possible from the Sensitive Agricultural Production Properties and minimize the direct and indirect impacts. However, it was not possible to avoid all the impacts.

Implementation of the Central and South Recommended Corridors will require mitigation for several Sensitive Agricultural Production Properties. Mitigation measures could include restrictions on construction activities such as controlling the type of equipment, time of day, and time of year construction is allowed; restrictions on facility lighting types and locations;

implementation of noise reduction treatments; and other similar measures to reduce the indirect effects on these properties.

3.2 Cultural Resources

Cultural resources include resources that contribute to the paleontological, archaeological, or historical culture or history of an area. Paleontological and archaeological resource inventories were not conducted as part of the study. Based on the cultural history of the area, there is the potential for some of these resources within the study area. However, based on other private and public projects that have developed in the area, it is not felt that these resources will present fatal flaws for any of the Recommended Corridors

Historic Resources

A cursory survey and reconnaissance conducted for the NVCS identified three potential historic features in the South Corridor Area which may be affected by the South Recommended Corridor. These include two structures and a railroad crossing and are shown in Figure 3-1. These will need to be further evaluated during the NEPA process. During the NEPA analysis, the following steps will occur regarding historic properties:

- A complete Cultural Resources Inventory will be completed to identify and evaluate each historic property within the area of potential effect.
- UDOT will prepare a Determination of Eligibility and Finding of Effect (DOE/FOE) which outlines each property's eligibility to the National Register of Historic Places (NRHP).
- A Section 4(f) Evaluation will be prepared and will be included as part of the NEPA document. The Section 4(f) Evaluation will be reviewed by UDOT, Federal Highway Administration (FHWA), and the United States Department of Interior (DOI).
- UDOT will prepare a Memorandum of Agreement (MOA) that will be signed by UDOT, the State Historic Preservation Office (SHPO), FHWA, and other parties that may have interest in the project. The MOA will list mitigation for adversely impacted historic properties.

3.3 Social Conditions

Because most of the Recommended Corridors are through currently undeveloped land and away from most of the established neighborhoods and community facilities, there should be little social impact resulting from the Recommended Corridors. Existing and future social conditions that may be impacted by the implementation of the Recommended Corridors include the dividing of neighborhoods, access to schools, disruption of the "rural community" feeling, effects on local streets, pedestrian safety and circulation, noise, and safety. However, the general social conditions of most of the study area are anticipated to substantially change over the next several years as a result of the rapid growth that is occurring throughout the study area. As such, conditions that exist today may be quite different by the time the Recommended Corridors are implemented. The more detailed NEPA analysis will address these potential impacts to the social conditions that exist at that time.

3.4 Relocations

One of the tasks associated with this study was identifying homes or businesses which will likely be relocated when the Recommended Corridors are developed. Relocations resulting from the Recommended Corridors include residential and other types of relocations as summarized in Table 3-1. A determination of exact relocations cannot be made until the NEPA analysis is performed.

If all three of the Recommended Corridors were developed today (2001) it could require the relocation of as many as 14 residences, 3 businesses, and several lots within platted subdivisions. The criteria used to establish if a residence or business needs to be relocated includes:

- **Direct Impacts.** Direct impacts would result from a residence or business being located directly within one of the Recommended Corridors.
- **Proximity to the proposed alignment.** The residence or business may require relocation if the proposed right-of-way is within 15-20 feet of the structure. This may include cut/fill limits and construction easements.
- **No Access.** A relocation is required if access cannot be maintained. Relocation of a residence or business would be required if the proposed improvements would not allow feasible access to the property.

The following relocations could be required if the Recommended Corridors were developed immediately. This information is based on the Recommended Corridors' alignments and platted developments as of May 2001.

Table 3-1 Possible Relocations

Corridor Area	Direct Impact	Proximity Impact	No Access Impact	Other Direct or Proximity Impacts - Description of Impacted Property	Total
North Corridor	3	0	0	0 - None	3
Central Corridor	3	3	0	1 - A platted subdivision	7*
South Corridor	6	2	0	2 - A sewer lift station and a platted subdivision	10*
All	12	5	0	3	20*

* The exact number is unknown because individual lots within platted areas have not been specifically counted.

If the Recommended Corridors are not immediately preserved, the number of relocations would be expected to increase by the time a NEPA analysis is completed and actual purchase of right-of-way occurs. However, during the NEPA analysis the detailed engineering alignments will be modified and adjusted to further avoid impacts, especially indirect impacts. This could reduce the number of possible relocations from that shown in Table 3-1.

Mitigation

The loss of residences or businesses due to the Recommended Corridors will be mitigated in accordance with federal, state, and local standard relocation policies. The acquisition and relocation program will be conducted in accordance with the Uniform Relocation Assistance and

Real Property Acquisition Policies Act of 1970, as amended. Relocation resources will be available to each relocated residence or business without discrimination.

Hardship Acquisitions

There is currently a limited amount of funding available within UDOT for the purchase of hardship acquisitions. Other agencies do not have funds set aside for hardship acquisitions. To qualify for a hardship purchase, the property owner must demonstrate the project has incurred a hardship on him/her. A letter must be prepared by the property owner and sent to the UDOT project manager. The project manager will forward the letter to the right-of-way department who will evaluate if a hardship does exist. If it is felt that a hardship exists, the request will be forwarded to the Transportation Commission to make a determination whether to approve or deny the hardship purchase. This determination is based upon availability of funds and comparison with the needs of other applicants. Hardship acquisitions are generally not approved until after the NEPA analysis has been completed.

3.5 Pedestrians, Equestrians, and Bicyclists

There are very few existing improved pedestrian, bicycle, or equestrian trails within the study area with the exception of the Jordan River Parkway Trail which parallels the Jordan River through much of the study area. The following sections discuss various issues, associated impacts to, or plans for pedestrian, equestrian, or bicycle trails that could be affected by the Recommended Corridors.

School Access

As indicated in the Land Use section of this chapter, there is one existing school and one planned school located in close proximity to the Recommended Corridors. Pedestrian and bicycle access to these schools will be an important topic during the NEPA analysis. This topic was not specifically discussed with representatives from the schools or school district because school boundaries are likely to change between now and the time the Recommended Corridors are developed. It is also likely that implementation of the Recommended Corridors will cause school boundaries to change in order to maintain neighborhood-school integrity. Pedestrian overpasses may be needed at some locations to provide school access. However, it is beyond the scope of this study to identify them at this time.

Trails Issues

There are five regionally significant trails that have the potential of being impacted by the Recommended Corridors: Jordan River Parkway Trail; Utah Lake Parkway Trail; Dry Creek Trail; Mitchell Hollow-Mill Pond Trail; and American Fork River Parkway Trail. These are shown on Figure 3-2. The following is a list of some of the trails issues that will need to be resolved as part of the NEPA analysis:

- Coordination of the Recommended Corridors with other existing and community and regional trails networks.
- How should trail/roadway interfaces be addressed?

- Are grade separated trail crossings (overpasses or underpasses) appropriate and if so, how should they be incorporated into the design of the Recommended Corridors and trails.

3.6 Air and Water Quality

No air quality analyses were required as part of this study. Mobile source emissions resulting from development of Recommended Corridors will be addressed by MAG through the existing conformity determination process. MAG must demonstrate regional conformity of the Long Range Plan (LRP) to the State's Air Quality Implementation Plan (SIP) every three years. The Recommended Corridors will be included in the LRP which is currently undergoing an updated conformity analysis. The NEPA analysis may also include a CO and PM₁₀ "hot spot" analysis at key intersections.

No water quality analyses were required as part of this study. There are various surface waters associated within the study area including natural drainages and surface irrigation systems. Potential impacts to these systems resulting from development of the Recommended Corridors and appropriate mitigation measures will be evaluated during the NEPA analysis. In general, the groundwater table is relatively high in many locations in the study area, especially in the South Corridor Area near Utah Lake. The number of springs and wells that would be impacted by the Recommended Corridors will be determined during the NEPA analysis. This would also be the case for the handling of storm water. Storm drain systems will be designed and managed according to requirements of the Utah Department of Environmental Quality, Division of Water Quality (DWQ). Storm water will likely be discharged into existing water courses and storm drain facilities. Water quality issues for this project are typical and do not suggest any unusual concern nor potential for fatal flaws.

3.7 Noise

A preliminary overview of potential noise impacts was performed and was based on the current UDOT noise abatement criteria shown in Table 3-2. The overview examined the number of receptors within 200' of the Recommended Corridors. The purpose of this overview was to obtain a preliminary indication of what type of noise issues may need to be addressed in the more formal NEPA analysis. The exact number and type of potentially affected noise receptors as well as the appropriate type of mitigation will be determined during the NEPA analysis.

Table 3-2 Noise Abatement Criteria

Activity Category	Leq(h)	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals
C	72 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above
D	--	Undeveloped lands
E Interior	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums

Results of the noise overview indicate that the Recommended Corridors will most likely have noise impacts that will need to be addressed in the NEPA analysis. Specifically, the number of receptors that may be affected by the Recommended Corridor within each corridor area are as follows:

Corridor Area	Number of potentially affected noise receptors
North Corridor Area	6
Central Corridor Area	26
South Corridor Area	13

3.8 Wetlands and Jordan River Crossings

Under the Clean Water Act, the U.S. Army Corps of Engineers (COE) regulates dredge and fill activities impacting navigable waters of the United States and their tributaries, including jurisdictional wetlands. No formal wetland delineation work was performed as part of this study. Wetland information was obtained from the Utah County Geographic Information System (GIS) database which contained wetland data as shown in National Wetland Inventory (NWI) maps for Utah County. The wetland data used in the study is shown on Figure 3-3. Based on this information, jurisdictional wetlands do exist within the NVCS study area and will be impacted by the Recommended Corridors. However, because no formal wetland delineation has been done, the exact amount and extent of impacts is unknown at this time.

In keeping with the spirit of the Clean Water Act and Section 404(b)(1) guidelines, every effort was made to avoid wetland areas. In areas where wetlands could not be avoided, every effort was made to minimize the amount of impact. When formal NEPA analysis on the Recommended Corridors is performed, it is anticipated that some of the alignments may need to

be adjusted to account for the more detailed wetland information that will be obtained as part of the NEPA analysis.

During the course of the study, several coordination meetings were held with the COE to discuss wetland issues and obtain input regarding the NVCS and the alternatives development process. Though the COE understood the purpose of the study and appreciated the efforts that were being made to avoid wetland areas, without a formal delineation they could not officially respond to the study nor provide specific corridor alternatives recommendations. The COE indicated that they would not be able to support nor prohibit any alternatives until a formal NEPA wetland analysis was performed for the Recommended Corridors.

Another concern of the COE was the number and location of Jordan River crossings through the study area. The basic position of the COE was to keep the number of crossings to a minimum. There are three existing crossings of the river, one in each Corridor Area. However, except for the crossing on SR-73, these crossings are primarily for local use and are not designed nor located to serve the regional east-west travel demands identified in the study. Every attempt was made to utilize the existing crossings where possible and limit the number of new crossings. Where new crossings are proposed, every attempt was made to locate them in a favorable location in terms of minimizing impacts to the river hydraulics and adjacent wetlands.

The North Recommended Corridor requires a new crossing on 2100 North. Utilizing the existing crossing on 1500 North was not feasible due to the lack of roadway connections to I-15 suitable for a regional arterial route (see Chapter 2, Sections 2.6 - 2.9). In both the Central and South Corridor Areas, the Recommended Corridors will replace the existing bridges with new, improved bridges. Though they may be located in slightly different locations along the river, they would replace the existing bridges and not be new additional crossings. The NVCS, therefore, only adds one new crossing of the Jordan River in the study area. More detailed evaluation of the type, size, and location of the Jordan River crossings associated with the NVCS will take place during the detailed NEPA analysis.

3.9 Flood Plains

The Recommended Corridors cross several natural drainages such as the Jordan River, Mill Creek, Dry Creek, and the American Fork River and their associated flood plains. The flood plain of Utah Lake also extends several hundred feet inland from the north shoreline of the lake. Routine coordination with the Federal Emergency Management Agency (FEMA) and the Utah Department of Public Safety will be required to identify flood plains and determine impacts and mitigation measures as part of the NEPA analysis.

3.10 Wildlife

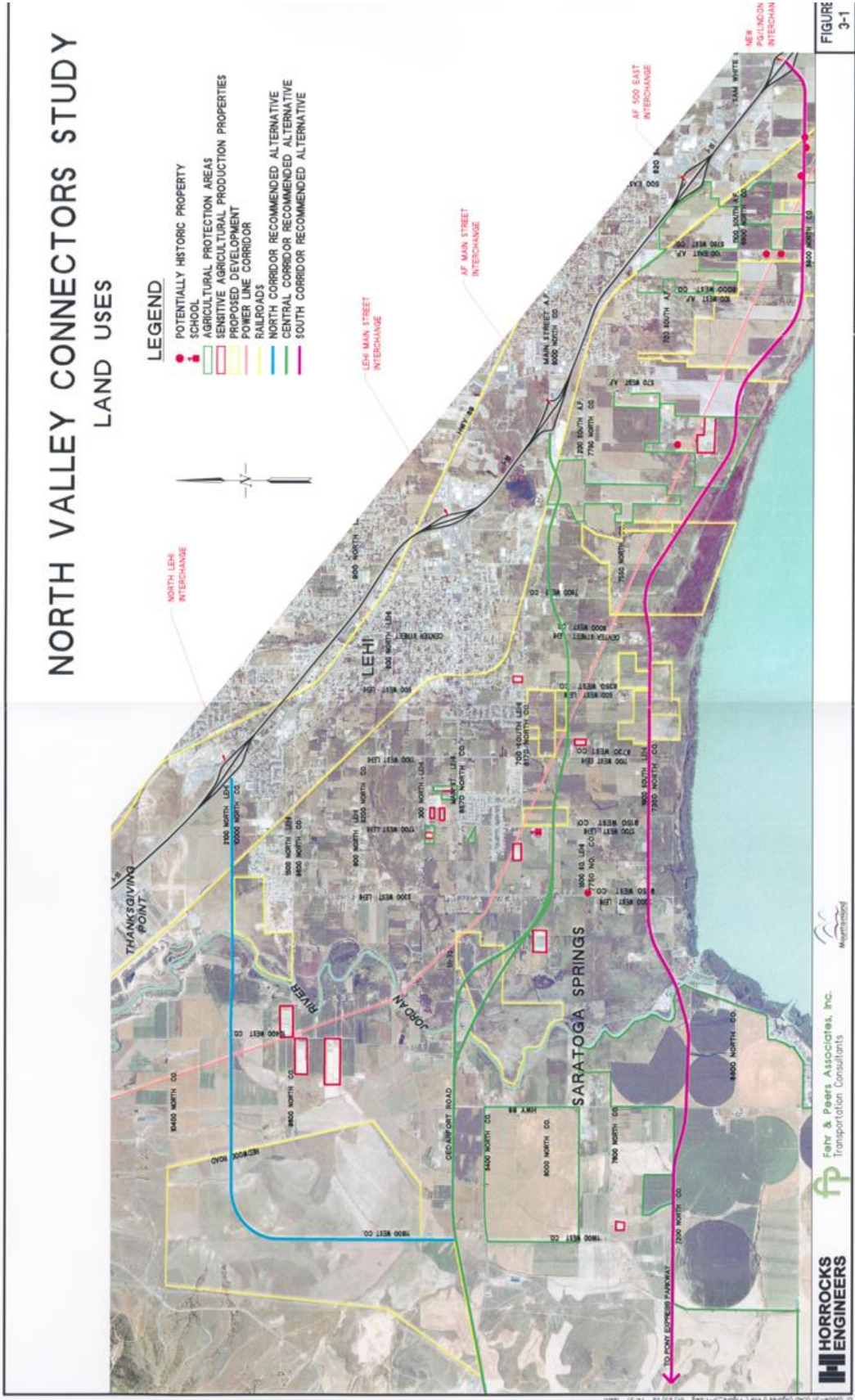
The Utah Division of Wildlife Resources (DWR) was represented on the TAC and provided valuable input relating to wildlife within the study area. The main concerns regarding wildlife are loss of habitat and the potential effects of development. However, it was also acknowledged that the impacts to wildlife are more likely to result from development rather than from implementation of transportation facilities such as the Recommended Corridors. During the

NEPA analysis, corridor design treatments will be identified and implemented to minimize the impact on wildlife.

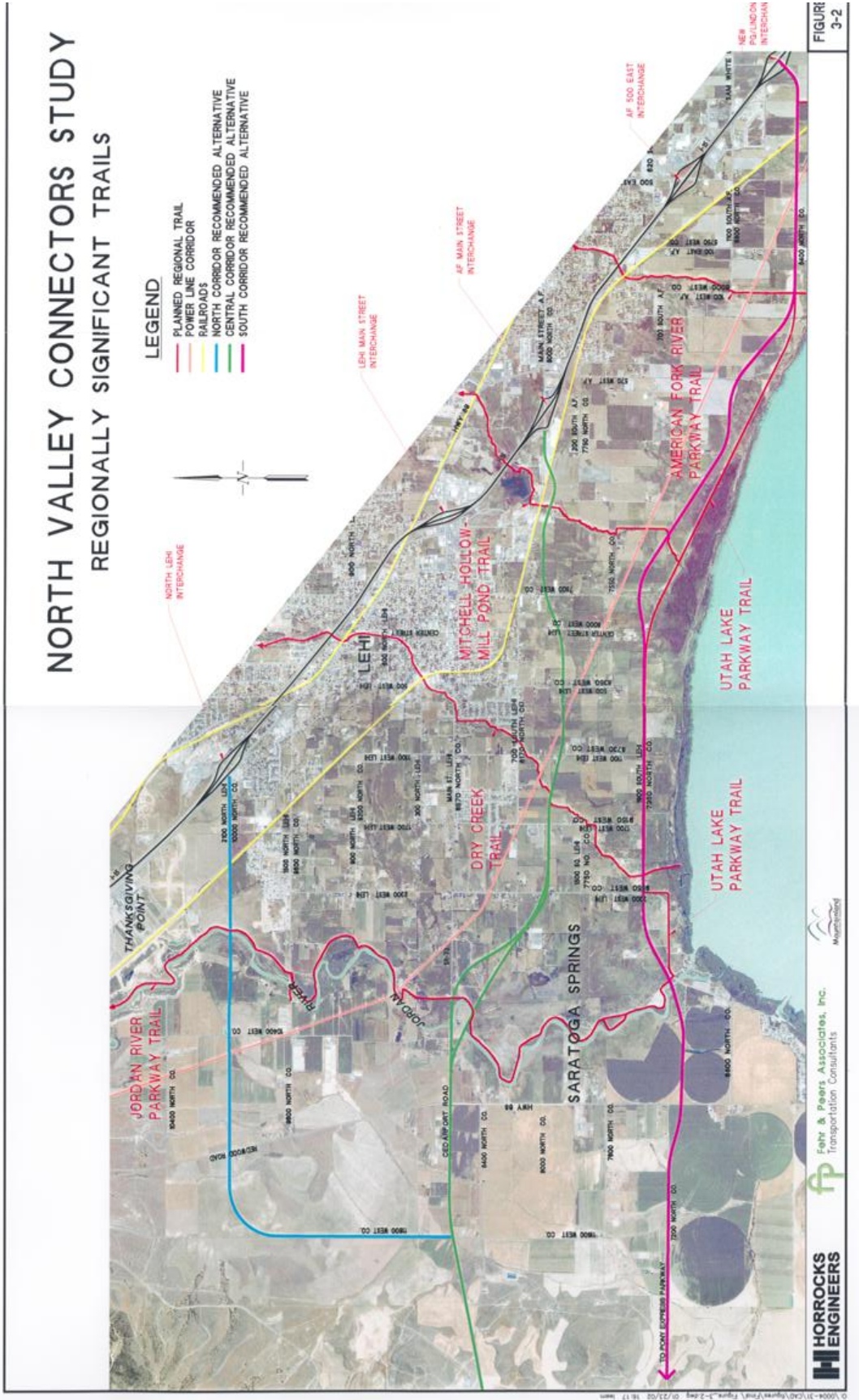
3.11 Threatened and Endangered Species

According to the United States Fish and Wildlife Service (USFWS), there are some federally listed threatened and endangered species within the study area. These species are the flora Ute Ladies Tresses and the June Sucker fish in Utah Lake. There are no anticipated impacts to the June Sucker. During the NEPA analysis, the exact location of any Ute Ladies Tresses will be identified. It is not expected that the existence of this species within the study area will result in a fatal flaw for any of the Recommended Corridors.

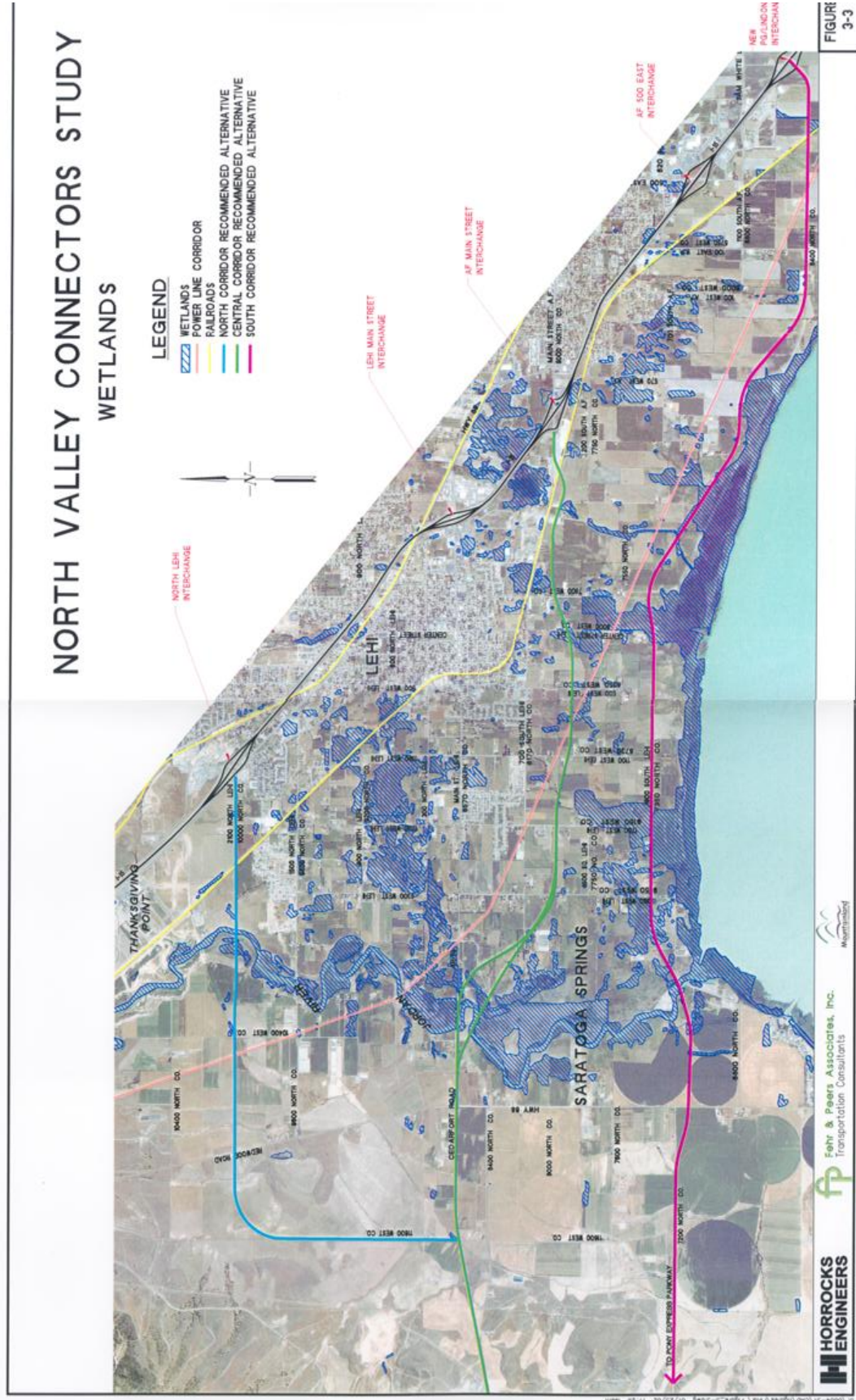
Land Uses Map - Figure 3-1



Regionally Significant Trails Map - Figure 3-2



Wetlands Map - Figure 3-3



4.0 North Valley Connectors Recommended Corridors

The purpose of this chapter is to describe the corridors that were ultimately selected for preservation as the Recommended Corridors for the North Valley Connectors Study. Corridor design standards and other technical data are presented. While this chapter is not all-inclusive, it provides more information and guidelines for the preservation and implementation of the Recommended Corridors.

4.1 Alignments

As mentioned in Chapter 2, one Recommended Corridor alternative was selected for each corridor area. The final alignments for these corridors are discussed in the following paragraphs.

North Corridor Area

The Recommended Corridor for the North Corridor Area is shown in Figures 4-1A through 4-1C. The alignment begins at I-15 at the North Lehi Interchange on 2100 North in Lehi. The alignment follows 2100 North to the west where it will cross over the UPRR tracks via an overpass structure. At the Jordan River, a new bridge and river crossing will be required. The alignment will continue along 2100 North until just west of Redwood Road where it will bend to the south and follow 11600 West (County) until it terminates at SR-73 in Saratoga Springs. The North Lehi Interchange will need to be reconstructed to accommodate the corridor. At-grade intersections are expected to be provided at 2300 West in Lehi; 10400 West and Redwood Road in the county; and SR-73 in Saratoga Springs.

Central Corridor Area

The Recommended Corridor for the Central Corridor Area is shown in Figures 4-2A through 4-2D. The alignment begins at I-15 at the American Fork Main Street Interchange. The alignment follows Main Street until approximately 1000 West where it bends to the south and crosses over the UPRR tracks via an overpass structure. The alignment then generally follows 1000 South in Lehi until 300 East at which point it bends to the south crossing Center Street at approximately 1100 South. It then follows 1100 South until 1100 West at which point it bends back to north to 1000 South. The alignment follows 1000 South until 2300 West.

From 2300 West, two sub-corridors are being preserved until the issues associated with the wetlands and the Jordan River crossing location as discussed in Section 2.9 - Recommended Corridors can be resolved. The difference between the two sub-corridors are that one connects to SR-73 east of the existing Jordan River bridge while the other crosses the river south of the oxbow with a new bridge and connects to SR-73 west of the existing Jordan River Bridge, east of the Saratoga Springs city limits. It is expected that from this point west into Cedar Valley, SR-73 will be widened and improved consistent with UDOT's Long Range Plan for the SR-73 corridor. As part of either sub-corridor, Main Street will have to be reconfigured to tie into the new corridor. The details of this and other local road connections will be addressed as part of the Lehi City Master Transportation Plan.

At-grade intersections are expected to be provided where ever the corridor crosses an existing collector class or higher road. These locations would include 1020 South in American Fork; Mill Pond Road (900 East), Center Street, 500 West, 1100 West, 1700 West, 2300 West and 700 South in Lehi; and Redwood Road in Saratoga Springs. Other intersections west of Redwood Road will be implemented in accordance with the UDOT Long Range Plan for the SR-73 corridor.

South Corridor Area

The Recommended Corridor for the South Corridor Area is shown in Figures 4-3A through 4-3F. The alignment begins at I-15 at the new Pleasant Grove/Lindon Interchange and follows 6400 North (County) until crossing over the UPRR tracks via an overpass structure. The corridor continues to follow 6400 North in American Fork until it reaches 100 West where it bends to the northwest and skirts along the north shore wetlands of Utah Lake. At approximately 300 East in Lehi, the corridor turns to the west and ties into 1900 South at Center Street. It follows 1900 South until just west of 2300 West in Saratoga Springs where it bends to the southwest and crosses the Jordan River just north of the existing Saratoga Springs Road bridge. The new bridge will replace the existing Saratoga Springs Road river crossing. The corridor then bends again to the west and follows approximately 7150 North (County) until it crosses Redwood Road at which point it bends to the northwest and ties into 7200 North (County). It then follows 7200 North where it will connect into Pony Express Parkway leading into Eagle Mountain. At-grade intersections are expected to be provided where ever the corridor crosses an existing collector class or higher road. The locations would include 100 East, 100 West and 570 West in American Fork; Center Street, 500 West, 1100 West, and 1700 West in Lehi; and 2300 West and Redwood Road in Saratoga Springs.

4.2 Geometric Standards

In order for the proper right-of-way and alignment to be preserved for each of the Recommended Corridors, it is important to document the geometric standards that will apply to the corridors. This will allow each local jurisdiction to ensure that as new developments are proposed along the corridors that the corridors are properly designed and incorporated into the development plans.

As a minimum, each of the corridors must satisfy all the design standards for a 50 mph, urban arterial as set forth in the American Association of State Highway and Transportation Officials (AASHTO) “*A Policy on Geometric Design of Highways and Streets*” (Green Book). The design must also satisfy all UDOT criteria for 50 mph, urban arterial streets. Appendix B contains the criteria which was referenced to establish corridor geometric standards and should be followed as the Recommended Corridors are developed.

4.3 Grade Separations (Bridges)

In order to provide the intended capacity and safety, each of the Recommended Corridors will require some grade separated accesses and crossings. Each of Recommended Corridors connect to I-15 at a grade separated access or interchange. Both the North Lehi interchange and the American Fork Main Street interchange will require significant reconstruction in order to accommodate the Recommended Corridors. The new Pleasant Grove/Lindon interchange has been designed with the intention of accommodating the Recommended Corridor in the South

Corridor Area and should not require any improvements. The nature and extent of the necessary interchange reconstructions is being examined as part of the on-going I-15 Corridor Study in Utah County being performed by UDOT.

Each of the Recommended Corridors cross the UPRR tracks on the east and the Jordan River on the west. All of these crossings will require new grade separations. It is expected that all the UPRR crossings will be overpasses where the corridors will go over the tracks. All the Jordan River crossings will require new bridges over the river. Even where the corridors cross at an existing bridge location, the existing bridges are inadequate to accommodate the Recommended Corridors and new structures will be required. The bridge over the Jordan River in the North Corridor Area will be a new bridge at a new crossing location while the new bridges in the Central and South Corridor Areas will replace the existing bridges on SR-73 and Saratoga Springs Road.

4.4 Typical Sections

Each of the Recommended Corridors is envisioned to be a vital east-west link to preserve the future mobility of the northwest Utah County area. As such, the right-of-way for the Recommended Corridors is sufficient to accommodate the needed number of lanes as well as other safety and aesthetic features such as shoulders, sidewalks, park strips, medians, bike lanes, and trails. The right-of-way width to be preserved for the North and South Recommended Corridors as established by the TAC is 120'. The right-of-way width to be preserved for the Central Recommended Corridor is 106'. Possible cross sections for the Recommended Corridors are shown in Figure 4-4.

As each of the Recommended Corridors pass through multiple jurisdictions, there may be a desire to change various elements of the typical section such as the width of medians, shoulders, park strips, sidewalks, etc. within a particular jurisdiction. This is acceptable as long as the corridor maintains a consistent lane count and configuration along its entire length. In order to ensure this situation, each of the corridors must provide a minimum 83' of pavement or traveled way between the curb and gutters. This will allow each corridor to provide the minimum 5-lane configuration needed to accommodate the projected 2030 traffic volumes.

It should be noted that the 106' and 120' recommended right-of-way widths are for the corridors themselves and do not include the additional right-of-way and/or easements that will most likely be required for cut/fill slopes associated with grade separations and other vertical elements of the design. As much of the terrain throughout the study area is relatively flat, it is expected that most of the extra right-of-way needed for cut/fill slopes would be in the areas surrounding the UPRR and Jordan River crossings. Additional right-of-way may also be needed at major intersections such as Redwood Road and the I-15 interchanges to accommodate exclusive right turn lanes or dual left turn lanes. The required amount of corridor design to identify these limits will be performed as part of the later NEPA analysis.

4.5 Access Management

In order to preserve the capacity and mobility of the Recommended Corridors, access to the corridors should be controlled. As the corridors pass mainly through undeveloped land, there are many opportunities to implement a pro-active access management plan for each corridor. Access control measures should include limiting the number, type, and spacing of accesses along the corridors. Minimum access management measures that should be implemented along the corridors include:

- Signalized intersection spacing = 1/2 mile minimum
- Unsignalized intersection spacing = 1/4 mile minimum for collector roads and 1/8 mile minimum for local roads
- Full access driveway spacing = 350' minimum
- Right-in-right-out only driveway spacing = 350' desirable, 200' minimum
- Residential driveways should not be permitted on the corridors, i.e. all residential lots adjacent to the corridors should be back facing and access via other local roads
- Driveways should be a minimum of 350' from all intersection corners
- Driveway curb returns = 25' minimum radius
- Driveway width = 28' minimum for two-way drives, 14' minimum for one-way drives

Access management techniques such as those identified above should adhere to UDOT's Access Management Handbook.

4.6 Planning Level Cost Estimates

The amount of engineering design done in conjunction with this study did not provide sufficient data to develop detailed cost estimates for each of the Recommended Corridors. It was also impossible to develop detailed right-of-way costs as property values are constantly changing and there was no way to determine how much of the required right-of-way would need to be purchased and how much of it may be acquired through other means such as dedications from developments. As such, only preliminary cost estimates could be developed. The cost estimates included estimates of "hard" costs such as pavement, sidewalks, curb and gutter, road base, and structures as well as an estimate of "soft" costs such as right-of-way, utility relocations, and engineering. The costs do not include any work related to I-15 interchanges. The details of these cost estimates are provided in Appendix C. Estimated planning level costs for each of the Recommended Corridors in year 2001 dollars are:

- **North Corridor = 38.5 m**
- **Central Corridor = 43 m**
- **South Corridor = 68.2 m**

4.7 Implementation Priority

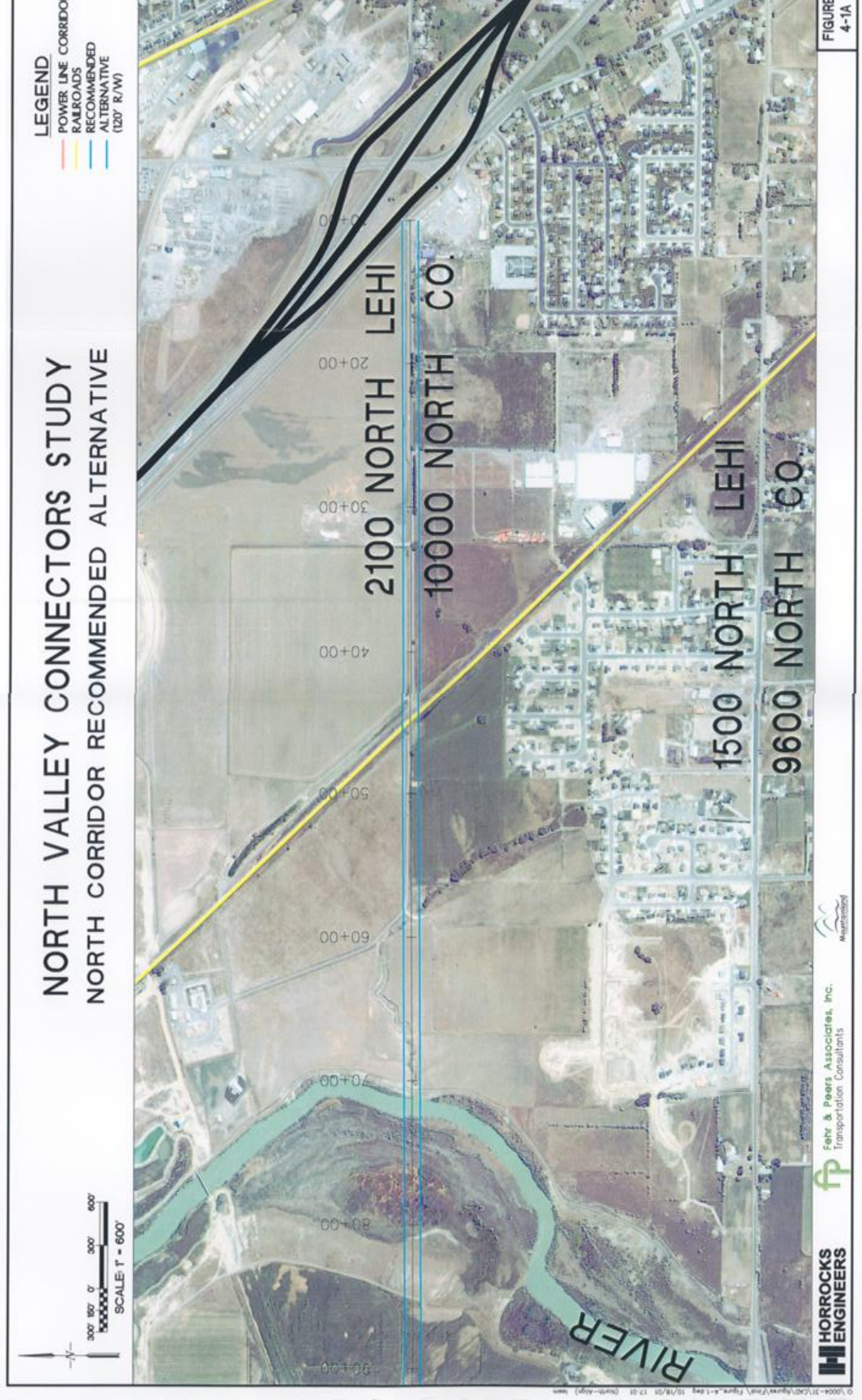
Since it is unlikely that sufficient funds will be available to construct all three of the Recommended Corridors simultaneously, it was necessary to prioritize the corridors in terms of the order in which they should be constructed. This was a very difficult task for the TAC as it involved a variety of different factors, some of which were unknown or constantly changing. Technical factors such as cost, ability of the corridor to alleviate traffic on Lehi Main Street, anticipated level of required NEPA analysis, etc. could be more accurately determined and evaluated. However, many of the decision factors are not so easily quantified, yet play a very significant role in attempting to prioritize the implementation schedule for the corridors. These factors include the rate and location of development within the study area, the amount of available funding and funding schedule, the level and amount of federal and state assistance, the amount of each corridor that could possibly be constructed as part of the local land development process, the support of key entities, etc.

In attempting to take all of the above factors into consideration, the TAC initially recommended that the Central Corridor be constructed first because it would provide the most immediate relief to congestion on Lehi Main Street, thereby satisfying one of the primary objectives of the NVCS. The Central Corridor would immediately be followed by the North Corridor and the South Corridor would be constructed last. However, it should be recognized that the majority of both the North and Central Recommended Corridors fall within the jurisdiction of Lehi City.

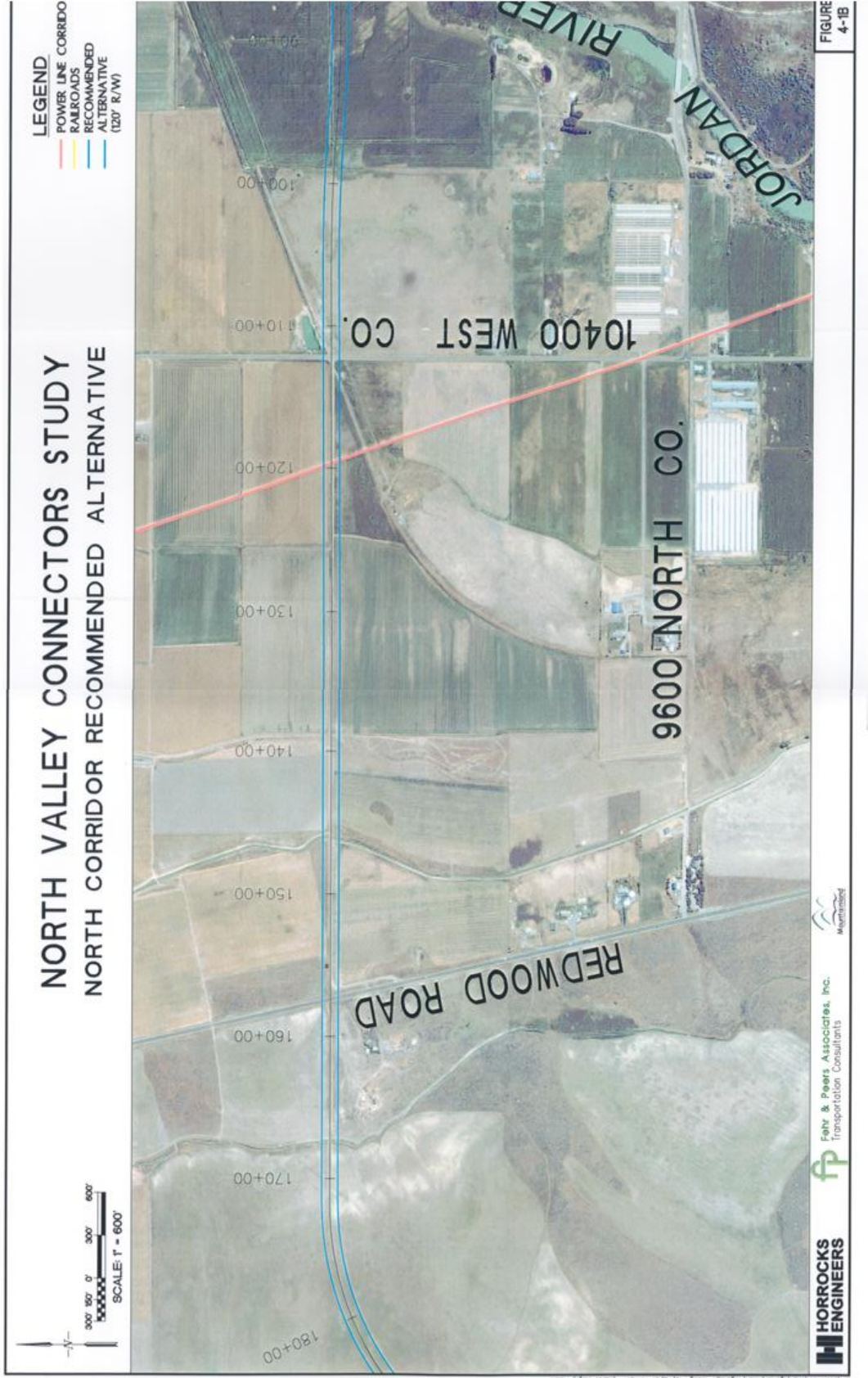
Lehi feels very strongly that the North Corridor should be constructed first. Lehi argues that the North Corridor could most likely be constructed quicker, cheaper, more easily, and with fewer environmental hurdles to overcome than the other two corridors. The North Corridor also provides relief to Lehi Main Street congestion, though not as much as the Central Corridor based on current development trends and traffic volumes. Given these factors and since the North Corridor has the support of Lehi and could move forward more rapidly than the other two corridors, it may be prudent to implement this corridor first. The study area is in desperate and immediate need of one of these east-west corridors to relieve the extreme congestion that is occurring on Lehi Main Street. Whichever corridor, the North or the Central, that can be implemented the quickest should be the first priority closely followed by the other one.

After much discussion with the TAC, local jurisdictions, and MAG, it was decided that MAG, Lehi, and UDOT should continue working together to immediately determine which corridor, the North or the Central, can be most easily and quickly funded and implemented. This corridor should be constructed first (2002-2007) with the other one following as soon as possible (2007-2015). The South corridor would most likely be constructed last (2020-2025) as it is the most expensive, has more environmental issues, and serves fewer vehicles. The ultimate timing of the corridors will be dependent upon the continued growth of the project study area and the resulting travel demand.

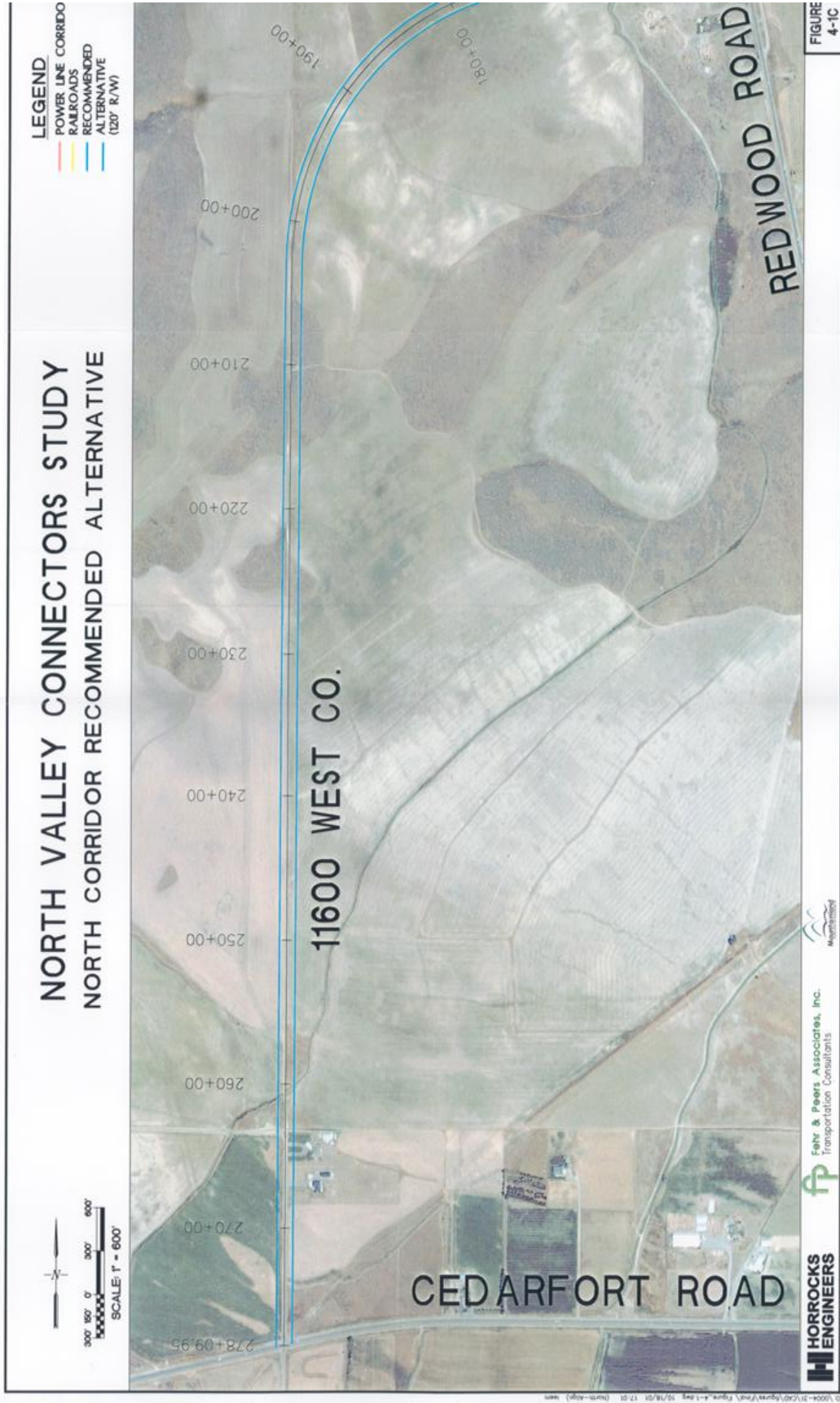
North Corridor Recommended Alternative Maps - Figure 4-1A



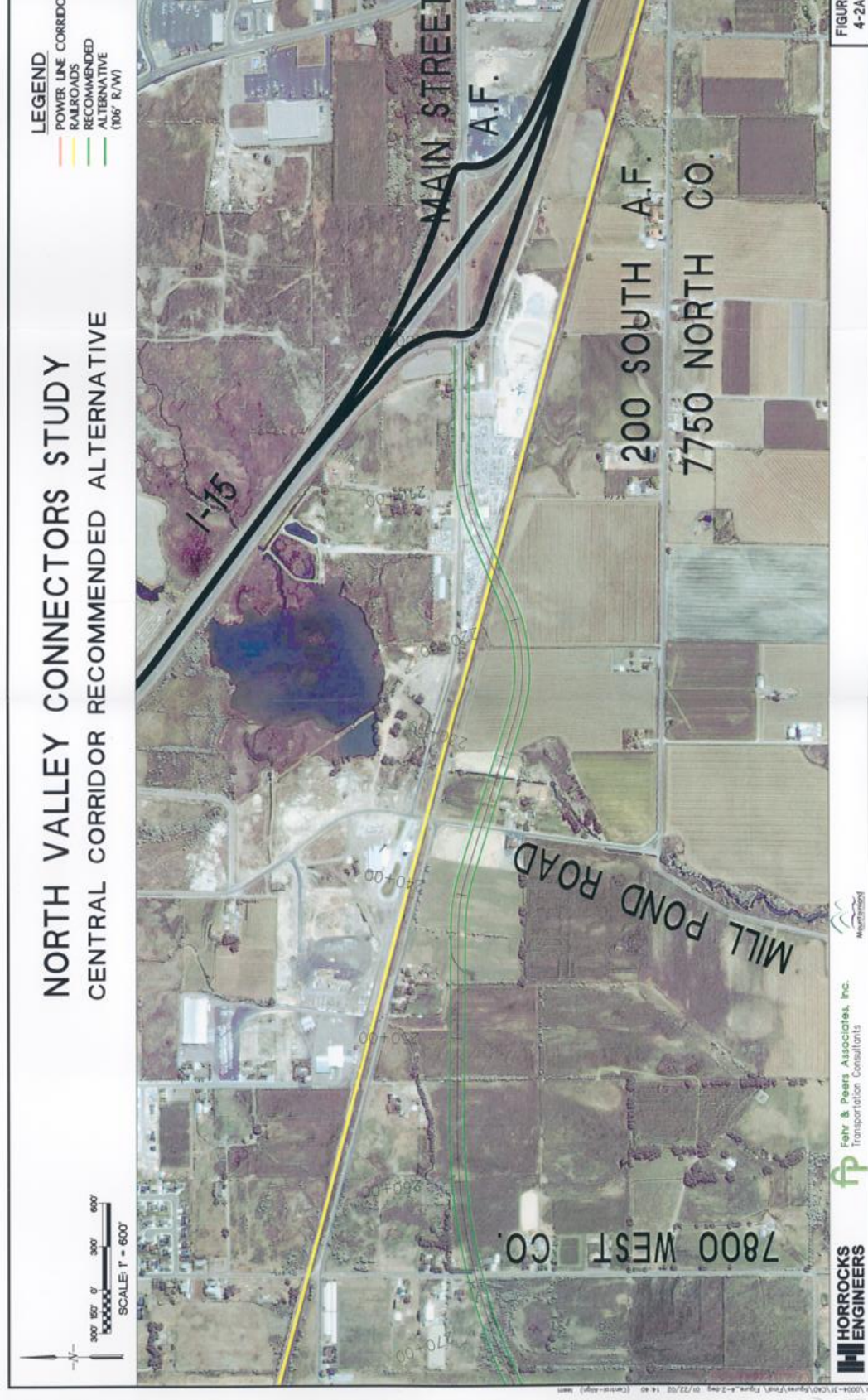
North Corridor Recommended Alternative Maps - Figure 4-1B



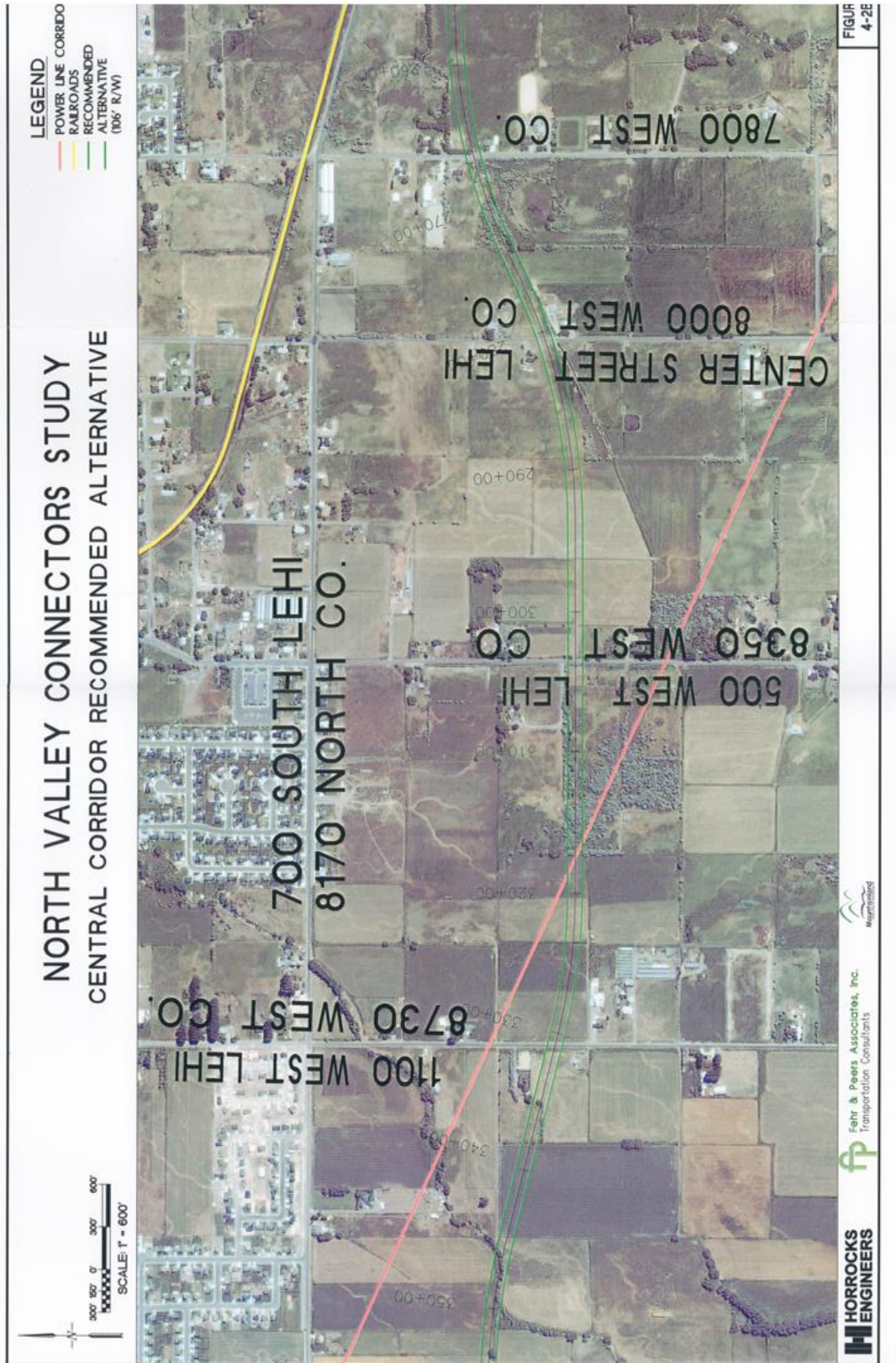
North Corridor Recommended Alternative Maps - Figure 4-1C



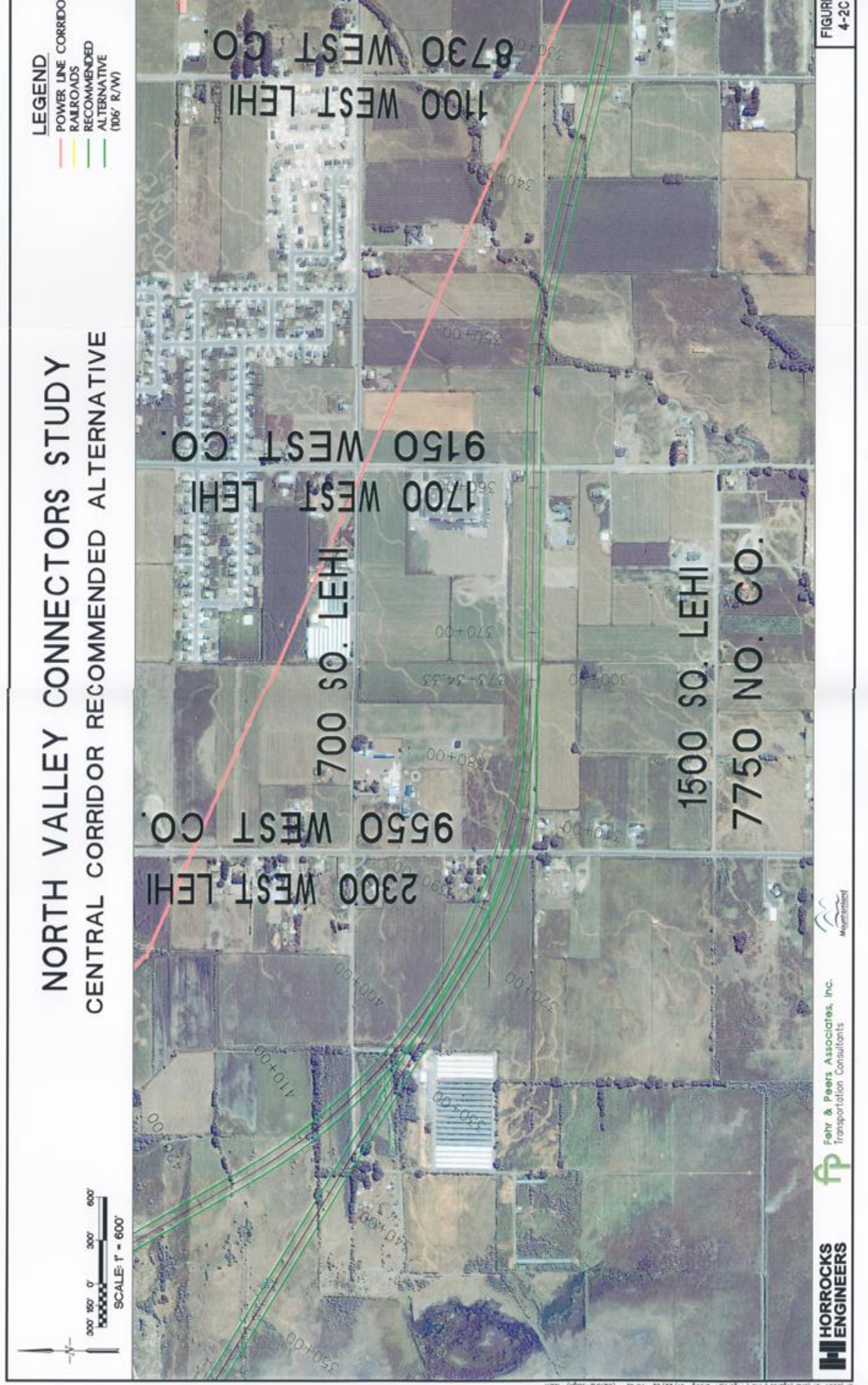
Central Corridor Recommended Alternative Maps - Figure 4-2A



Central Corridor Recommended Alternative Maps - Figure 4-2B



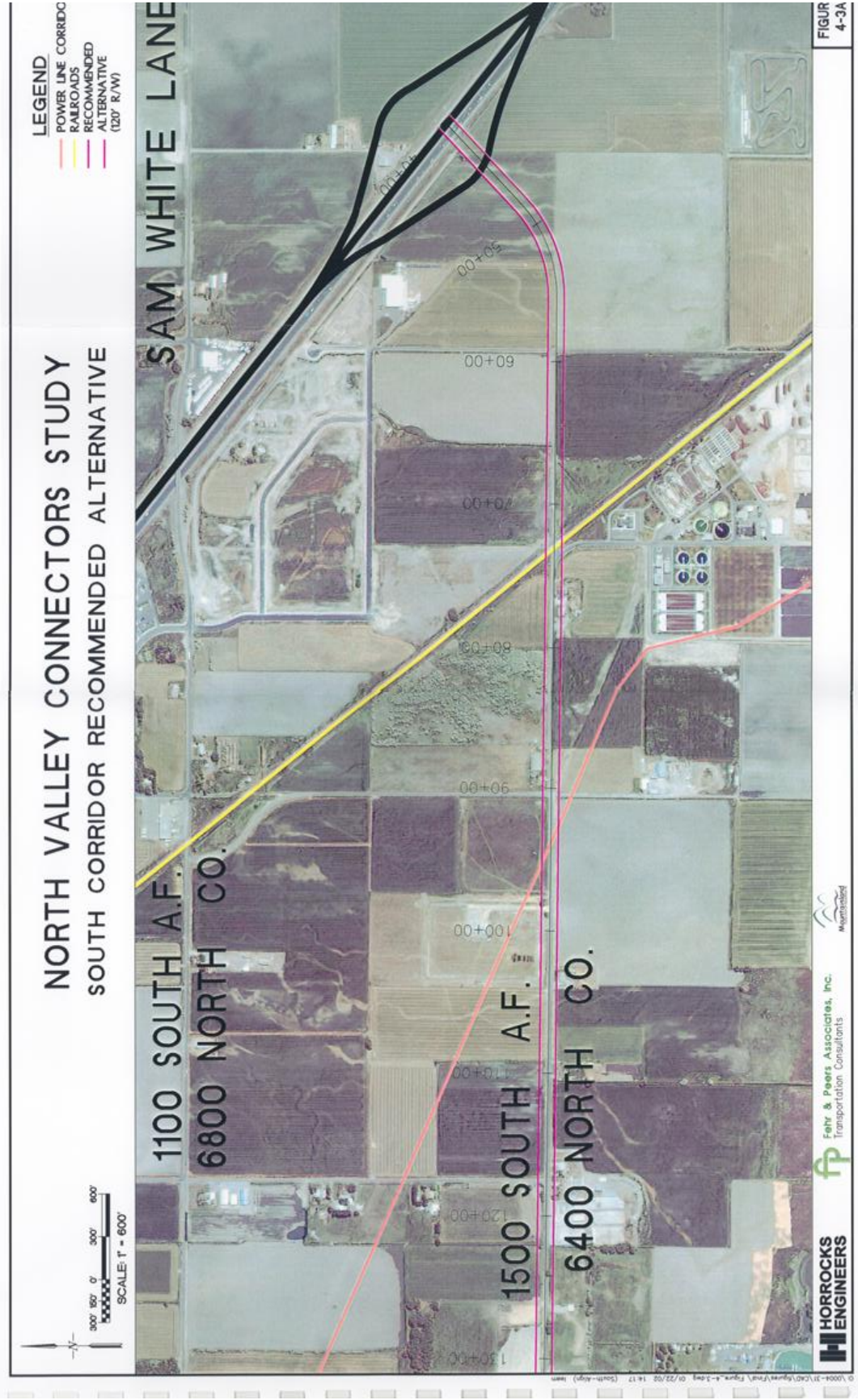
Central Corridor Recommended Alternative Maps - Figure 4-2C



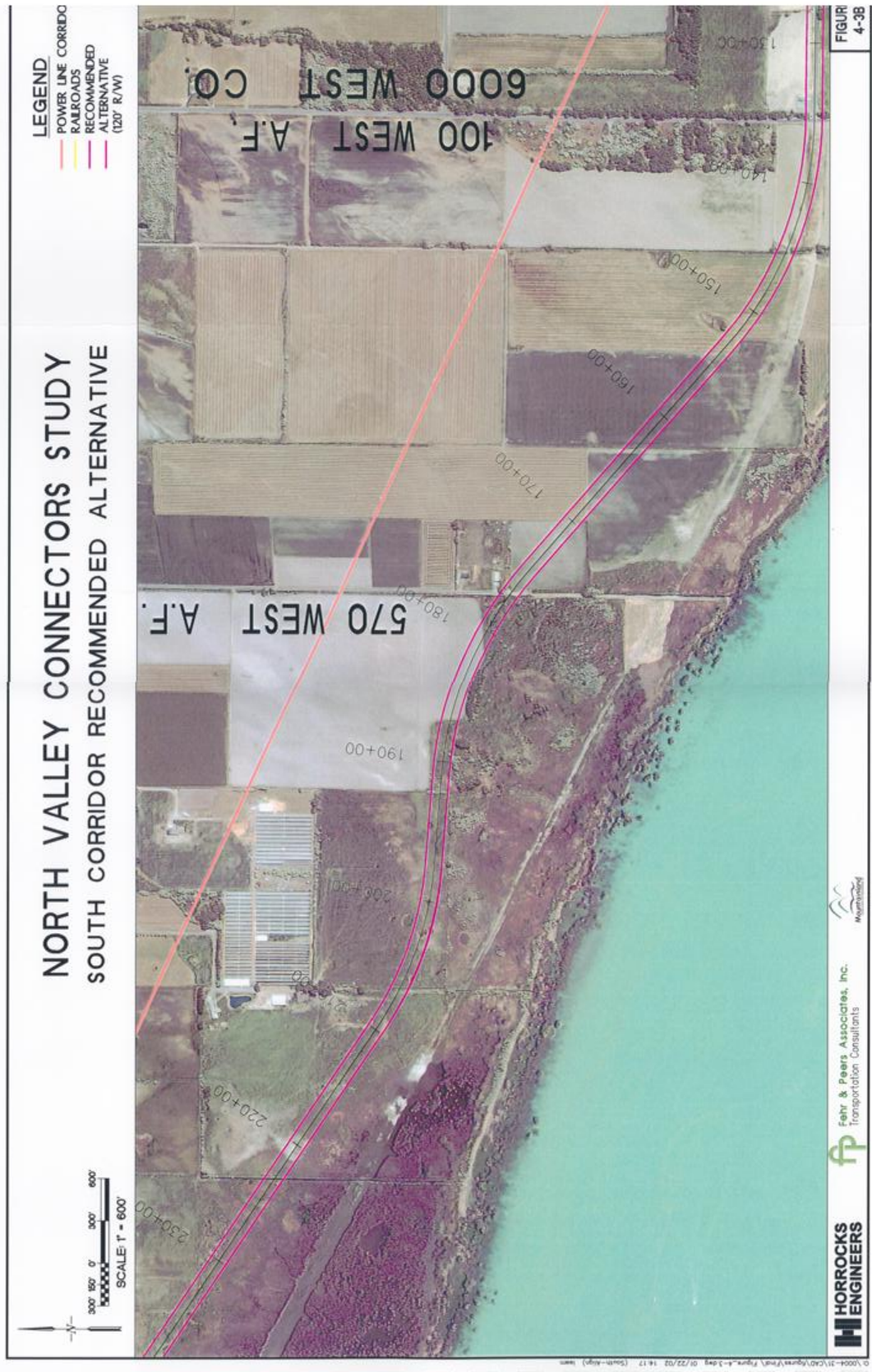
Central Corridor Recommended Alternative Maps - Figure 4-2D



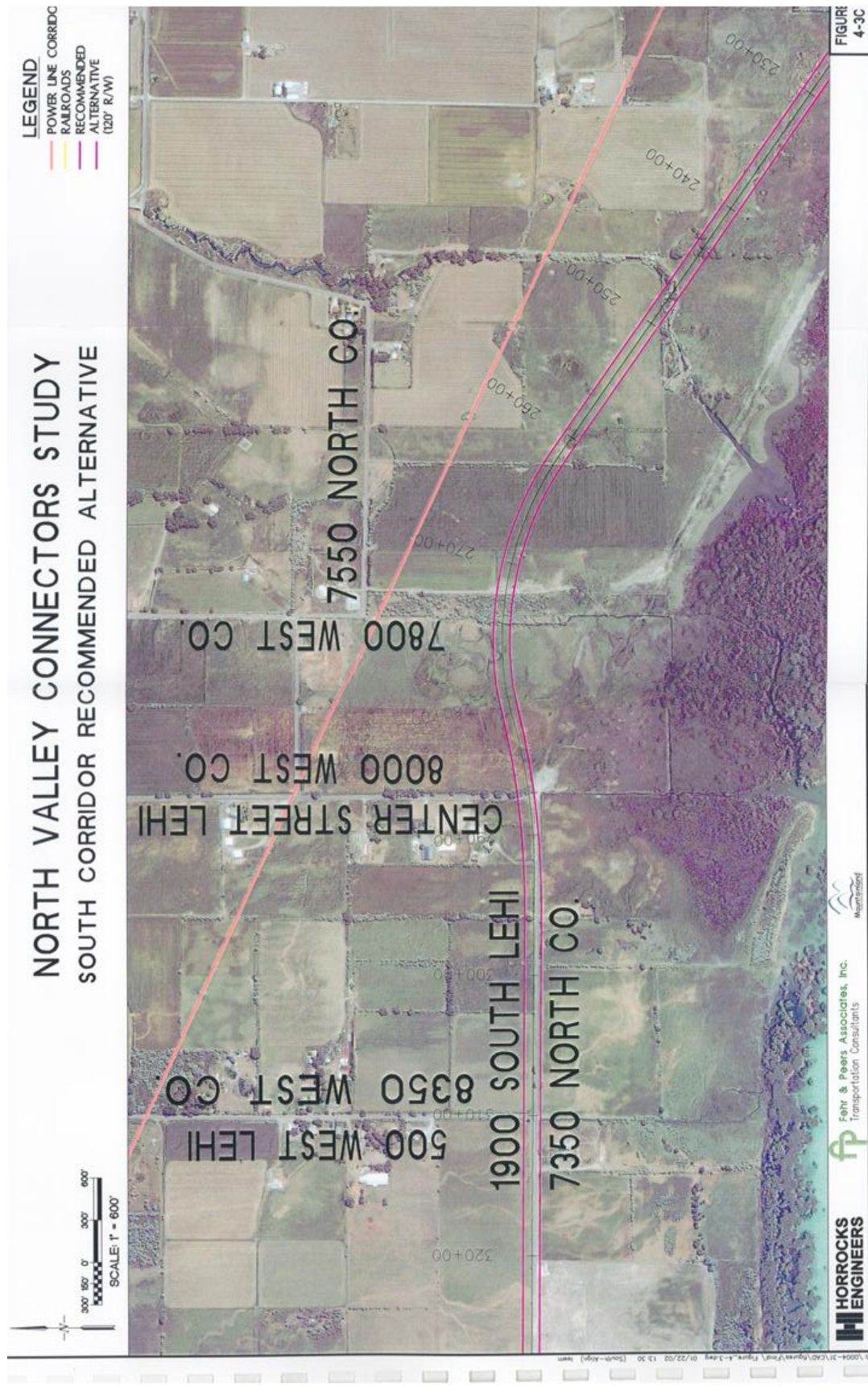
South Corridor Recommended Alternative Maps - Figure 4-3A



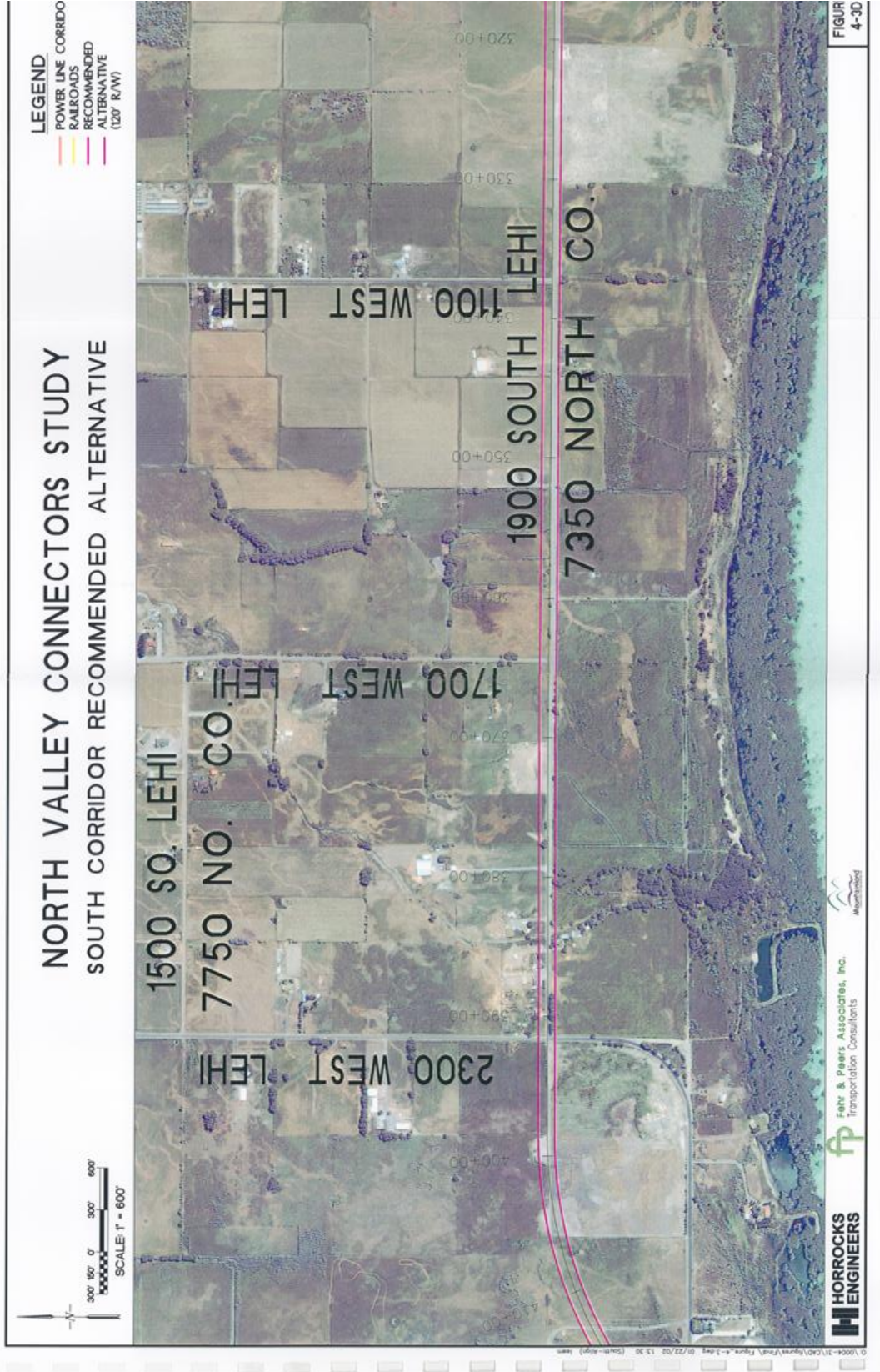
South Corridor Recommended Alternative Maps - Figure 4-3B



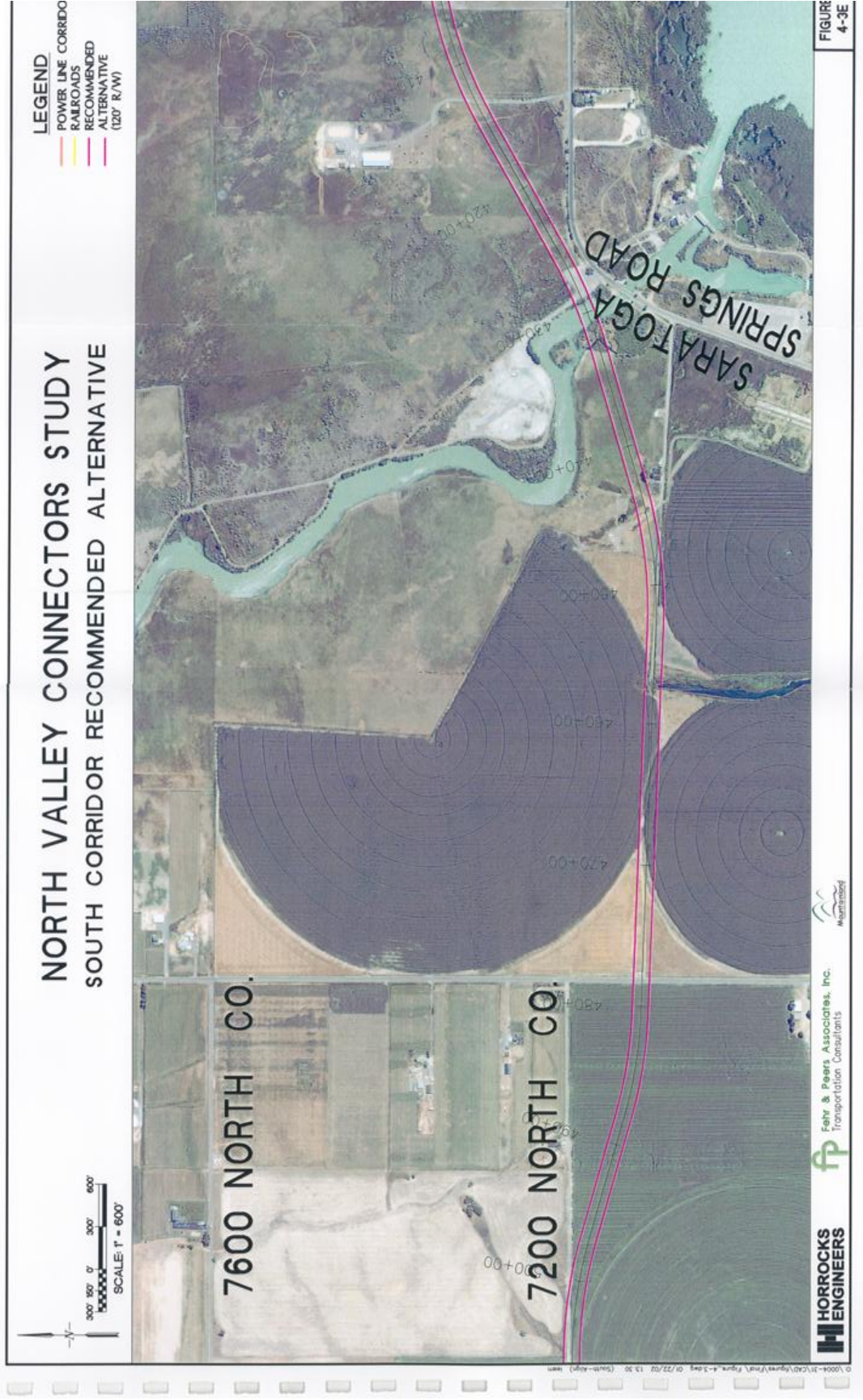
South Corridor Recommended Alternative Maps - Figure 4-3C



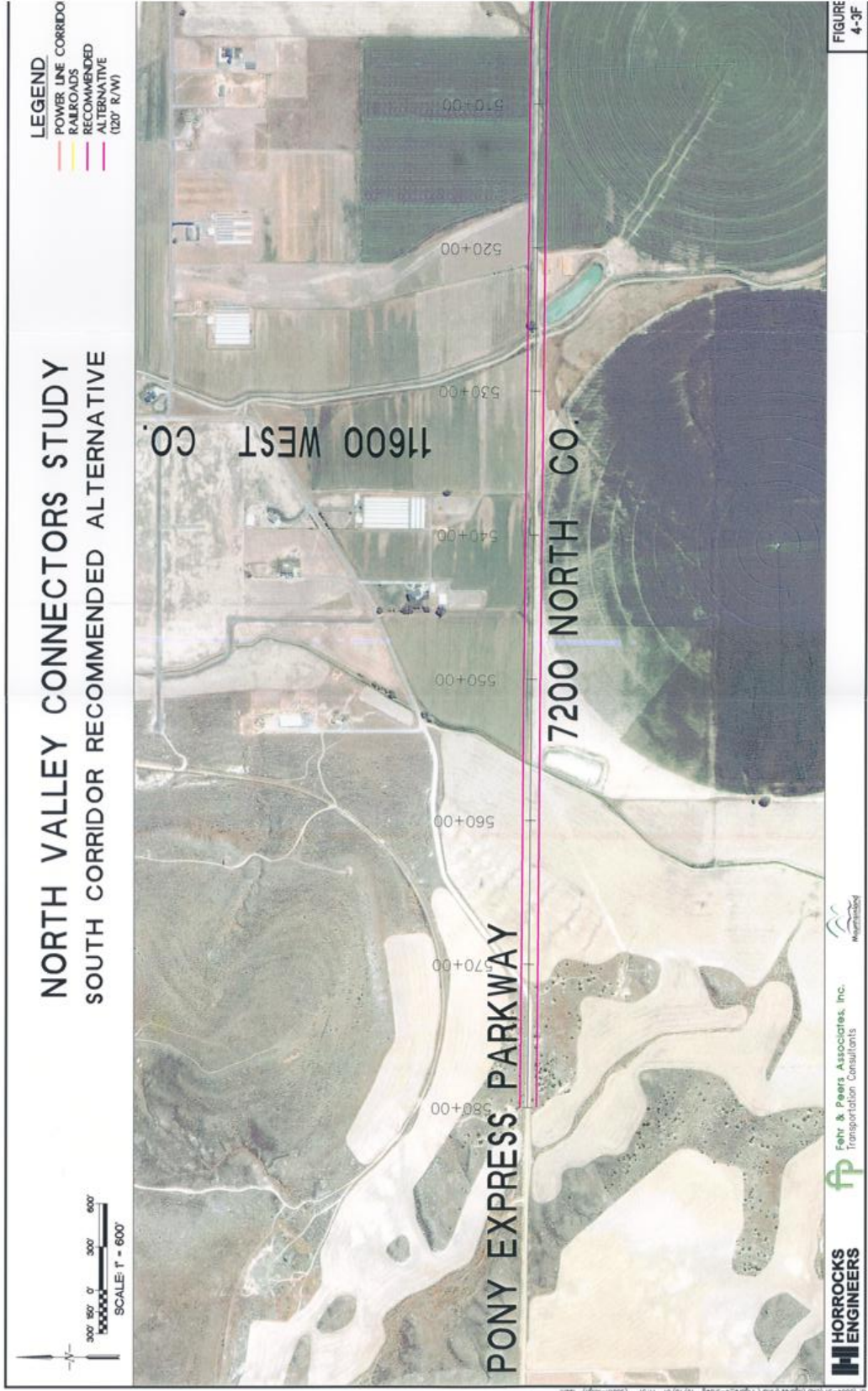
South Corridor Recommended Alternative Maps - Figure 4-3D



South Corridor Recommended Alternative Maps - Figure 4-3E



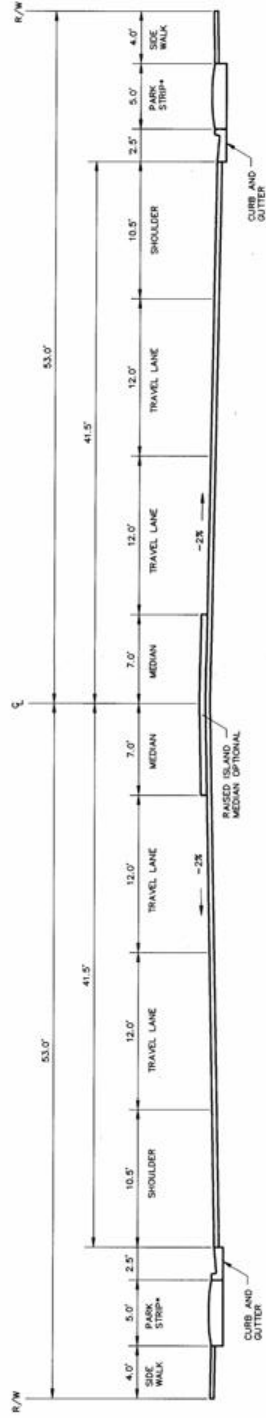
South Corridor Recommended Alternative Maps - Figure 4-3F



Recommended Typical Sections Drawing - Figure 4-4

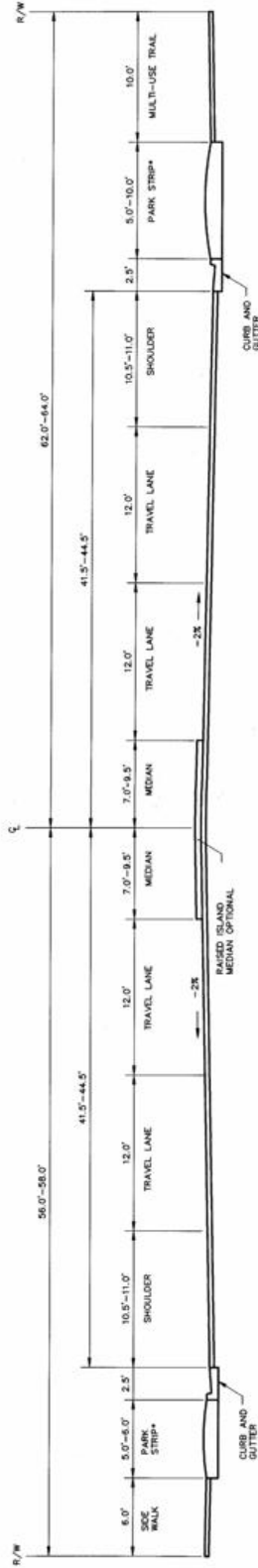
NORTH VALLEY CONNECTORS STUDY RECOMMENDED TYPICAL SECTIONS

CENTRAL CORRIDOR



106' RIGHT-OF-WAY

NORTH AND SOUTH CORRIDORS



120' RIGHT-OF-WAY



Fehr & Peers Associates, Inc.
Transportation Consultants



HORROCKS ENGINEERS

* 1' MAY BE ELIMINATED FROM THE PARK STRIP TO PROVIDE A 1' R/W BUFFER STRIP BEHIND THE BACK OF WALK.

FIGURE 4-4

5.0 Public and Agency Involvement

A primary goal of this study was to engage the public and seek their input on alternatives. A second goal was to keep federal and state resource and regulatory agencies informed and to seek their guidance and assistance in identifying the environmental consequences for various alternatives under consideration. This outreach to the public and resource agencies was continuous throughout the project and several techniques were employed by the TAC and the Consultant Team to that end. This chapter summarizes those efforts. Appendix D presents a summary of the public and agency involvement meetings.

5.1 Public Meetings

Two informational public meetings were held for the study. These were both held at Snow Springs Elementary School in Lehi. The first meeting was held February 7, 2001 and presented the results of the preliminary alternatives screening as discussed in Section 2.5. A summary of the comments received from this meeting is presented in Appendix D.

The second public meeting was held on June 13, 2001 and presented the results of the detailed alternatives evaluation and Recommended Corridors as discussed in Section 2.9. A summary of the comments received from this meeting is presented in Appendix D. A complete record of all comments will be maintained by MAG at their offices located at 586 East 800 North, Orem, Utah.

5.2 Stakeholder Meetings

Coordination meetings were held with the following stakeholders during the study:

- Church of Jesus Christ of Latter Day Saints (LDS Church)
- Each of the local jurisdictions involved in the study
- U.S. Environmental Protection Agency (EPA)
- Mountainland Association of Governments (MAG)
- U.S. Army Corps of Engineers (COE)
- U.S. Fish and Wildlife Service (USFWS)
- Utah Department of Transportation (UDOT)
- Various land developers and individual property owners

The meetings were very helpful in working through specific issues and obtaining detailed information relative to the development and evaluation of alternatives. A summary of these important meetings dates is provided in Appendix D. Minutes from these meetings are included in the Administrative Record which is in the possession of MAG.

5.3 Advisory Committee Meetings

Two separate advisory committees were formed to provide input and direction in the study and to ratify decisions. These included the Technical Advisory Committee (TAC) and the Public Advisory Committee (PAC) and were discussed earlier in Chapter 1, Section 1.4. Meetings with these two groups were generally held on a monthly basis. A summary of these meetings dates is

provided in Appendix D. Minutes from each of these meetings are included in the Administrative Record which in the possession of MAG.

5.4 Coordination with City Councils, Planning Commissions & Staff

Consultant Team members met with representatives from the local jurisdictions at various times throughout the study. These included meetings with staff, planning commissions, and city councils. A summary of these meeting dates is provided in Appendix D. Minutes from these meetings are included in the Administrative Record which in the possession of MAG.

5.5 Local Newspapers and Newsletters

Notices of the February and June Public Open Houses and other informational articles related to the NVCS were contained in the following newsletters and newspapers:

- New Utah!
- Provo Daily Herald
- American Fork - city newsletter
- Lehi - city newsletter
- Saratoga Springs - city newsletter

5.6 E-mail

The Consultant Team and other members of the TAC provided e-mail addresses to the public upon request and this proved an effective means of communication. The Consultant Team was able to use e-mail as a timely and effective way to notify interested parties of upcoming meetings, answer questions, and follow up on project issues.

5.7 Phone Calls

Numerous phone calls from the public, agencies, stakeholders, government officials, etc. were exchanged throughout the project with various members of the TAC and the Consultant Team. Valuable input from citizens and other stakeholders and interested parties received by phone were reported to other TAC, PAC, and Consultant Team members during meetings.

5.8 Web Page

At the beginning of the project, MAG determined that important project data needed to be available on a web site for direct access by the public. Since MAG project already had a web site in existence, it was decided that NVCS information would be displayed there. Subsequently, project drawings (in PDF format) and other information were displayed at:

<http://www.mountainland.org>.

6.0 Next Steps

The purpose of the NVCS project was to identify the need for future east-west transportation corridors in northwest Utah County and develop alternatives that could be incorporated into the local jurisdictions for corridor preservation purposes. This chapter describes the next steps that must be taken by the local jurisdictions to ensure that the Recommended Corridors are appropriately preserved. It also identifies other action items that must occur for the NVCS project to move into the NEPA and construction phases. Completion of any required NEPA analyses may be up to five years in the future. Construction of all of the Recommended Corridors may be between 5 and 20 years away depending on available funding and may proceed in phases.

6.1 Corridor Preservation

The next step in the process is to begin preserving the Recommended Corridors within each local jurisdiction. The main purposes of corridor preservation are to:

- Preserve viability of future options
- Reduce the cost of these options
- Minimize environmental and socio-economic impacts

The single most important action item following this study is for each jurisdiction to preserve the Recommended Corridors and prevent development which might be incompatible with future transportation facilities. This responsibility is shared by local and state governments and MAG as the regional planning organization. The primary responsibility rests with local communities because of their ability to apply land use controls such as zoning and approval of developments. Adoption of the Recommended Corridors by local governments is both an internal and external commitment. It is an internal commitment to citizens and future leaders in the community that the Recommended Corridors will be the ultimate location for regional transportation facilities. It is an external commitment because it represents an agreement with and a commitment to adjacent jurisdictions that the Recommended Corridors are the best locations for such facilities.

Perhaps, the most important responsibility of each jurisdiction next to preserving the corridor is ensuring that it is preserved in the correct location as shown in Figures 4-1 through 4-3 and meets the Recommended Corridors design standards as outlined in Chapter 4, Section 4.2. As the NVCS does not define the exact alignment of each Recommended Corridor nor does it provide meets and bounds descriptions of the corridors for right-of-way purposes, it will be the responsibility of each jurisdiction to make sure that the corridors are correctly preserved. This will have to be accomplished through the engineering and planning reviews done within each jurisdiction as development and annexation requests are approved that involve properties within or adjacent to the Recommended Corridors.

Corridor Preservation Techniques

Several publications are available which discuss corridor preservation. A corridor preservation manual prepared by UDOT and Brigham Young University entitled Methods and Techniques of

Corridor Preservation: A Guide for Utah Practice. (June 30, 1999) is an excellent reference and should be reviewed for a detailed discussion on corridor preservation.

Until the Recommended Corridors can proceed with a NEPA analysis, cooperative preservation measures may be the best tools available to local communities. Some specific corridor preservation techniques that may be most beneficial and easily implemented are:

- **Developer incentives and agreements.** Public agencies can offer incentives in the form of tax abatements or timely site plan approvals to developers who maintain property within proposed transportation corridors in an undeveloped state.
- **Exactions.** As development proposals are submitted to the cities for review, efforts should be made to exact land identified within the Recommended Corridors. Exactions are similar to impact fees, except they are paid with land rather than cash.
- **Fee simple acquisitions.** This will most likely consist of hardship purchases or possible city/county acquisition of property identified within the corridors. Parcels obtained in fee title can later be sold at market value to the owner of the transportation facility when construction begins.
- **Transfer of development rights and density transfers.** Government entities can provide incentives for developers and landowners to participate in corridor preservation programs using the transfer of development rights and density transfers. This is a powerful tool in that there seldom is any capital cost to local governments.
- **Land use controls.** This method allows government entities to use police power to regulate intensity and types of land use. Zoning ordinances are the primary controls over land use and the most important land use tools available for use in corridor preservation programs.
- **Purchase of options and easements.** Options and easements allow government agencies to purchase interests in property that lies within highway corridors without obtaining full title to the land. Usually, easements are far less expensive than fee title acquisitions.

These are just some of the techniques which can be implemented by the local jurisdictions. A more thorough discussion of the above and other techniques is included in Appendix E.

Coordination with Other Agencies

As indicated above, the first line of defense in preserving the corridor lies with each local community. Every effort should be made to utilize the techniques mentioned above or others as appropriate to preserve the Recommended Corridors. If efforts by communities to preserve the corridor fail, they should contact MAG and UDOT prior to permitting development within the corridor. Several different divisions within UDOT have an interest in preservation of the Recommended Corridors including Region 3 and Statewide Planning.

MAG would like to maintain a staff-level committee which would meet regularly and assist communities with specific preservation issues involving the Recommended Corridors. It is envisioned that the TAC formed for this project might continue meeting quarterly for this purpose. MAG will propose that such a committee be formed and will advance this concept through MAG technical committees and the MAG governing council.

Recent Legislation

The Utah Legislature has long recognized the importance of preserving rights-of-way for future highway and transit facilities. During the 2001 session, the Legislature strengthened key sections of the Utah Code to emphasize transportation corridor preservation. The considerations used to prioritize disbursements from the Corridor Preservation Revolving Loan Fund were amended to require that *the cost-effectiveness of the preservation project be considered*. The Legislature also established a new *Corridor Preservation Advisory Council* with the following responsibilities:

- Assist with and help coordinate corridor preservation efforts of the state transportation department and local governments
- Provide recommendations and priorities concerning corridor preservation and use of fund monies to the state transportation department and the transportation commission
- Include members designated by each metropolitan planning organization in the state to represent local governments that are involved with corridor preservation through official maps and planning

The complete text of this legislation is found in Appendix F.

6.2 Action Items for Participating Agencies

Preservation efforts will be most effective if the affected agencies and communities:

- Incorporate the Recommended Corridors in their master transportation plans
- Utilize existing subdivision ordinances for preservation of the corridors
- Initiate cooperative measures with developers and land owners to preserve the corridors
- Encourage MAG and UDOT to identify near-term funding for a NEPA analysis and right-of-way acquisition in the Transportation Improvement Program (TIP) and Statewide Transportation Improvement Program (STIP).

Specific action items that need to be accomplished by each community and participating agency are discussed in the following paragraphs.

American Fork

Action items for American Fork include:

- Modify the existing master transportation plan to reflect the new alignment of the South Recommended Corridor. The current master plan has the alignment following the sewer outfall line.
- Modify the existing master transportation plan to incorporate the Central Recommended Corridor.
- Modify the existing master plan as necessary to revise the local street system to accommodate the Recommended Corridors and any accesses and crossings of the corridors that may be required.

- Incorporate into the master plan the typical section for the South Corridor that reflects the 120' recommended width and the typical section for the Central Corridor that reflects the 106' recommended width.
- Work with developers and property owners through the subdivision and annexation process to acquire the needed right-of-way as the Central and South Corridor Areas develop within the city.
- Ensure through appropriate engineering and development reviews that as various corridor segments are preserved that the corridor design meets the Recommended Corridor design criteria as outlined in Chapter 4, Section 4.2, is placed in the correct locations as shown in Figures 4-2 and 4-3, and allows for the necessary future connections on either end of the corridor segment under consideration.
- Work with the other local communities, MAG, UDOT, and the state legislature to secure funding for the NEPA analysis, design, and construction of the Recommended Corridors.
- Ensure that the Central Recommended Corridor is included in the ongoing study of the I-15 corridor in Utah County as it relates to the interchange reconstruction that will be required at the American Fork Main Street interchange.

Lehi

Action items for Lehi include:

- Modify the existing master transportation plan to include the Recommended Corridors.
- Incorporate into the master plan the typical sections of 106' for the Central Recommended Corridor and 120' for the North and South Recommended Corridors.
- Work with the owners/developers of the Evans property, Saratoga Springs, and the COE to select the final alignment and tie-in to SR-73 east of the Jordan River in the Central Corridor Area as discussed in Chapter 2, Section 2.9. The final alignment will depend on the wetland status of the Evans' property and whether the COE will permit a new crossing of the Jordan River. Regardless of which alignment is selected, a realignment of Main Street will be required to connect to the new corridor. This issue will need to be addressed in the local transportation master plan once the final corridor alignment has been selected.
- Work with developers and property owners through the subdivision and annexation process to acquire the needed right-of-way as the Corridor Areas develop within the city.
- Ensure through appropriate engineering and development reviews that as various corridor segments are preserved that the corridor design meets the Recommended Corridor design criteria as outlined in Chapter 4, Section 4.2, is placed in the correct locations as shown in Figures 4-1 through 4-3, and allows for the necessary future connections on either end of the corridor segment under consideration.
- Work with the other local communities, MAG, UDOT, and the state legislature to secure funding for the NEPA analysis, design, and construction of the Recommended Corridors.
- Ensure that the North Recommended Corridor is included in the ongoing study of the I-15 corridor in Utah County as it relates to the interchange reconstruction that will be required at the North Lehi interchange.

Saratoga Springs

Action items for Saratoga Springs include:

- Modify the existing master transportation plan to include the Recommended Corridors.
- Incorporate into the master plan the typical sections of 106' for the Central Recommended Corridor and 120' for the North and South Recommended Corridors.
- Coordinate with Lehi in the selection of the final alignment and tie-in to SR-73 immediately east of the Jordan River in the Central Corridor Area as discussed in Chapter 2, Section 2.9.
- Work with developers and property owners through the subdivision and annexation process to acquire the needed right-of-way as the Corridor Areas develop within the city.
- Ensure through appropriate engineering and development reviews that as various corridor segments are preserved that the corridor design meets the Recommended Corridor design criteria as outlined in Chapter 4, Section 4.2, is placed in the correct locations as shown in Figures 4-1 through 4-3, and allows for the necessary future connections on either end of the corridor segment under consideration.
- Work with the other local communities, MAG, UDOT, and the state legislature to secure funding for the NEPA analysis, design, and construction of the Recommended Corridors.

Eagle Mountain

Action items for Eagle Mountain include:

- Modify the existing master transportation plan to include the South Recommended Corridor and its connection to Pony Express Parkway.
- Incorporate into the master plan the typical section of 120' for the South Recommended Corridor.
- Work with developers and property owners through the subdivision and annexation process to acquire the needed right-of-way as the South Corridor Area develops within the city.
- Ensure through appropriate engineering and development reviews that as various corridor segments are preserved that the corridor design meets the Recommended Corridor design criteria as outlined in Chapter 4, Section 4.2, is placed in the correct locations as shown in Figure 4-3, and allows for the necessary future connections on either end of the corridor segment under consideration.
- Work with the other local communities, MAG, UDOT, and the state legislature to secure funding for the NEPA analysis, design, and construction of the Recommended Corridors.

Pleasant Grove

Action items for Pleasant Grove include:

- Modify the existing master transportation plan to show the South Recommended Corridor.
- Work with the other local communities, MAG, UDOT, and the state legislature to secure funding for the NEPA analysis, design, and construction of the Recommended Corridors.

Lindon

Action items for Lindon include:

- Modify the existing master transportation plan to show the South Recommended Corridor.
- Work with the other local communities, MAG, UDOT, and the state legislature to secure funding for the NEPA analysis, design, and construction of the Recommended Corridors.

Utah County

Action items for Utah County include:

- Modify the existing master transportation plan to include the Recommended Corridors.
- Incorporate into the master plan the typical sections of 106' for the Central Recommended Corridor and 120' for the North and South Recommended Corridors.
- Coordinate any new developments within the unincorporated areas of the county that would be affected by the Recommended Corridors with American Fork, Lehi, or Saratoga Springs depending on which entity would be most likely to annex the property in the future to ensure that the Recommended Corridors are appropriately preserved.
- Work with developers and property owners through the subdivision process to acquire the needed right-of-way as the Corridor Areas develop within the county.
- Ensure through appropriate engineering and development reviews that as various corridor segments are preserved that the corridor design meets the Recommended Corridor design criteria as outlined in Chapter 4, Section 4.2, is placed in the correct locations as shown in Figures 4-1 through 4-3, and allows for the necessary future connections on either end of the corridor segment under consideration.
- Work with the local communities, MAG, UDOT, and the state legislature to secure funding for the NEPA analysis, design, and construction of the Recommended Corridors.

Mountainland Association of Governments

Action items for MAG include:

- Incorporate the Recommended Corridors with their typical sections into the Long Range Plan for Utah County.
- Include the Recommended Corridors in the air quality conformity analysis and development of the Statewide Implementation Plan (SIP).
- Work with the local communities, UDOT, FHWA, and the state legislature to secure funding for the NEPA analysis, design, and construction of the Recommended Corridors.
- Ensure that the North and Central Recommended Corridors are included in the ongoing study of the I-15 corridor in Utah County as they relate to the interchange reconstructions that will be required at the North Lehi and American Fork Main Street interchanges.

Utah Department of Transportation

Action items for UDOT include:

- Include the Recommended Corridors in the development of the Statewide Transportation Improvement Program (STIP).
- Work with the local communities, MAG, FHWA, and the state legislature to secure funding for the NEPA analysis, design, and construction of the Recommended Corridors.
- Ensure that the North and Central Recommended Corridors are included in the ongoing study of the I-15 Corridor in Utah County as they relate to the interchange reconstructions that will be required at the North Lehi and American Fork Main Street interchanges.

6.3 Preparation of a NEPA Document

Assuming that state and/or federal funding is obtained to further the implementation of the Recommended Corridors, conducting a NEPA analysis and preparing a NEPA document (EA or an EIS) is the next major step. There are some issues that must be resolved before a NEPA analysis can be initiated for the Recommended Corridors. These include:

- Development of a formal purpose and need. One of the main components of a NEPA analysis is a defensible Purpose and Need for action. This study did not develop a formal purpose and need for follow-on actions. However, it was clearly evident based upon the travel demand analyses performed as part of the study that additional east-west transportation corridors will certainly be needed in the near future. Screen line data indicates that SR-73 will reach an unacceptable level of service within the next few years on a regular basis and that significant relief would be provided by development of the Recommended Corridors. As part of the MAG Long Range Plan development process, it is very likely that the purpose and need information compiled for this study will be confirmed.
- Funding for a NEPA analysis has not been programmed. For the NVCS to advance to the NEPA analysis stage, funding must be identified through the MAG Long Range Plan and/or the State Transportation Improvement Program (STIP). Based on the results of this study, MAG has recommended to UDOT that the NVCS be advanced to the NEPA analysis stage and that funding be identified in the STIP as soon as possible. Waiting to begin the NEPA analysis will greatly increase the possibility for encroachment or incompatible development in the Recommended Corridors.

Possible NEPA Analysis Options

There are two realistic options for performing a NEPA analysis for the Recommended Corridors should such an analysis be required. The first option would be to complete a NEPA analysis for all three Recommended Corridors at one time. This approach would identify and quantify all of the environmental and socio-economic issues for all three Recommended Corridors. It would resolve any outstanding issues associated with all of the Recommended Corridors. Assuming environmental clearance is obtained, it would allow any of them to be implemented in any order or all of them to proceed concurrently. It would allow for better corridor preservation activities to proceed on all three corridors while funding and construction sequencing issues are being resolved. This option would have a higher initial cost to perform, but the total cost to perform the NEPA analysis for all three corridors would probably be less in the long run. It would probably be more favorably supported by resource and regulatory agencies that want to know what the ultimate effects of all three corridors will be.

The second option would be to perform a NEPA analysis for each individual corridor. This option would accelerate the implementation of one corridor and have a lower initial cost to perform. However, a NEPA analysis would have to be performed for each Recommended Corridor so the long term total cost would probably be higher due to some duplication of engineering effort and having to go through the NEPA process three separate times. This option would probably be less favorably supported by the resource and regulatory agencies. One advantage of this approach, however, is that it may be able to more quickly address the issues associated with the highest priority corridor and get it implemented faster and help alleviate the congestion on Lehi Main Street in a more timely fashion.

6.4 Conclusions

The single most important purpose of this study was to identify east-west transportation corridors that could be preserved from development. This study has identified three Recommended Corridors. Local jurisdictions should incorporate the Recommended Corridors into master plans and protect them from development. It is anticipated that a NEPA analysis will be completed within the next five years. The NEPA analysis will evaluate the work performed in this study and will formally evaluate alternatives and assess the environmental impacts. Communities and the public will have ample opportunity to comment on proposed corridor development during the NEPA analysis.

After completion of the NEPA analysis, the Federal Highway Administration will issue a Decision Document. Assuming this decision favors the development of the Recommended Corridors, the local communities, MAG, and UDOT will begin land acquisition followed by construction over the next 5 to 20 years.

Appendix A

Technical Advisory Committee And Public Advisory Committee Members

North Valley Connectors Study

Technical Advisory Committee

Name	Representing
Howard Denney	American Fork
Cal Cook	Cedar Fort
John Newman	Eagle Mountain
Shawn Warnke	Eagle Mountain
Harlan Miller	FHWA
Kim Struthers	Lehi
Jim Hewitson	Lehi
Ott Dameron	Lindon
Frank Mills	Pleasant Grove
Reid Wayman	Saratoga Springs
Tim Parker	Saratoga Springs
Matt Swapp	UDOT Urban Planning
Walt Steinvorth	UDOT Urban Planning
Guan Xu	UDOT Urban Planning
Elden Bingham	UDOT Urban Planning
Dan Nelson	MAG
Shawn Eliot	MAG
Chad Eccles	UTA
Paul Hawker	Utah County Public Works
Buck Rose	Utah County Planning
Doug Sakaguci	Utah DWR
Gary Ogborn	Utah DWR
Lucy Jordan	U. S. Fish and Wildlife
John Wrublik	U. S. Fish and Wildlife
Michael Schwinn	Army Corps of Engineers
Anthony Vigil	Army Corps of Engineers
Rich Crosland	UDOT Environmental
Brent Schvaneveldt	UDOT Region 3

Public Advisory Committee

Name	Representing
Mayor Ted Barratt	American Fork
James Hansen	American Fork
Mayor Paul Bond	Eagle Mountain
Lou Carroll	Eagle Mountain
Shane Jones	Eagle Mountain
Jody Hooley	Eagle Mountain
Mayor Ed Sanderson	Pleasant Grove
Darrell Cook	Pleasant Grove
Mayor Larry Ellertson	Lindon
Ron Anderson	Lindon
Mayor Tim Parker	Saratoga Springs
Reid Wayman	Saratoga Springs
Justin Jones	Saratoga Springs
Mayor Kenneth Greenwood	Lehi
Rep. David Cox	Lehi
James Rhodes	Lehi
Von Brockbank	Lehi
Colonel Ted Frandsen	Camp Williams
George F. Tripp	Lehi
Armando Alvarez	Lehi

Appendix B

Recommended Corridor Geometric Design Standards

NORTH VALLEY CONNECTORS STUDY GEOMETRIC STANDARDS

The Recommended Corridors should be regarded as principle traffic movers emphasizing functional capacity and safety over individual property access. Functional capacity and safety can be achieved by honoring the geometric parameters given below and following the access and intersection spacing guidelines provided in Section 4.5 of the NVCS report.

Geometric design should conform with standards of the latest edition of the “*Policy on Geometric Design of Highways and Streets*” published by the American Association of State Highway and Transportation Officials (AASHTO). The minimum standards for certain key parameters are presented as follows:

- **Design Speed:** The design speed should be 50 mph. Urban conditions should be assumed, i.e. the roadways should be compatible with full development of adjacent properties. Roadway grading should not preclude intersection development.
- **Curve Radius:** The minimum radius of horizontal curvature should be 2,300 ± feet for the following reasons:
 - a. Provide a principal urban arterial class facility
 - b. Restrict superelevation to ≤ 3 percent of pavement cross-slope for 50 mph
 - c. Accommodate the WB-50 design vehicle with possible future 11-foot travel lanes without the necessity of pavement widening in horizontal curves

Wherever possible, curve radii should be greater than 2,300 feet. At least 400 feet of tangent alignment should be provided between reverse horizontal curves.

- **Superelevation:** Superelevation should be restricted to 3 percent or less in order to:
 - Adhere to AASHTO guidelines for intersection grading
 - To match side properties’ elevations with minimal regrading
- **Intersections:** Cross streets should intersect with the Recommended Corridors at no less than 75 degrees of angle. At least 100 feet of tangent alignment should be provided beyond the stop bar on cross street approaches. Offset “T” intersections should be a minimum of 400 feet apart.
- **Finish Profile Elevations:** In low-lying and high groundwater areas, property development will probably include filling with 1 to 3 feet of granular soil. Cross street designs should anticipate Recommended Corridor profile elevations, perhaps 1.5 to 2 feet above the surrounding ground elevations. A raised profile would also improve the performance of the Recommended Corridor drainage systems.

Appendix C

Recommended Corridor Planning Level Cost Estimates

North Corridor Area				
Item	Unit	Quantity	Unit Price	Amount
Removal of Existing Asphalt	S.Y.	29,556	\$3.50	\$103,444
Clearing and Grubbing	Acre	59.7	\$2,800.00	\$167,190
Roadway Excavation (2.67' Thick)	C.Y.	220,789	\$6.50	\$1,435,130
Asphalt Concrete (6" Thick)	Ton	86,517	\$35.00	\$3,028,099
Untreated Base Course (8" Thick)	C.Y.	55,404	\$15.00	\$831,061
Granular Borrow (18" Thick)	C.Y.	124,039	\$12.00	\$1,488,467
Curb and Gutter	L.F.	53,800	\$10.00	\$538,000
Sidewalk	S.F.	269,000	\$3.75	\$1,008,750
Drainage	L.F.	26,900	\$100.00	\$2,690,000
R.R. Crossing Bridge	Each	1	\$4,000,000.00	\$4,000,000
Jordan River Bridge	Each	1	\$1,500,000.00	\$1,500,000
Subtotal				\$16,790,141
Contingency (30%)				\$5,037,042
Mobilization (5%)				\$839,507
Utilities by Owner (15%)				\$2,518,521
Construction Costs Subtotal			\$25,185,212	
Preconstruction Engineering (12%)				\$3,022,225
Construction Engineering (10%)				\$2,518,521
Engineering Costs Subtotal			\$5,540,747	
Total Project Construction Cost (with Engineering)				\$30,725,958
Right-Of-Way				\$7,803,000
Total Project Cost (with Right-of-Way)				\$38,528,958

Assumptions:

Price assumes a 120' ROW

Road Length = 26,900 ft

Asphalt Concrete Pavement Density = 155 psf

Utility costs = 15% of construction costs

Drainage includes 24" pipe culvert, catch basins every 300', and 18" cross culverts

Planning level costs based on 2001 market values.

4" Sidewalk width estimated at 5".

Right-of-Way estimated at \$3.00/SQ. FT. Right-of-way costs are highly variable and should only be used for rough planning purposes. They could vary significantly from the estimate based on the economic status of the area, the amount donated by developers, the amount of land within the corridor that is not preserved and must be purchased at future higher costs, etc.

Central Corridor Area				
Item	Unit	Quantity	Unit Price	Amount
Removal of Existing Asphalt	S.Y.	24,889	\$3.50	\$87,111
Clearing and Grubbing	Acre	57.7	\$2,800.00	\$161,611
Roadway Excavation (2.67' Thick)	C.Y.	235,563	\$6.50	\$1,531,161
Asphalt Concrete (6" Thick)	Ton	92,306	\$35.00	\$3,230,723
Untreated Base Course (8" Thick)	C.Y.	59,111	\$15.00	\$886,671
Granular Borrow (18" Thick)	C.Y.	132,339	\$12.00	\$1,588,067
Curb and Gutter	L.F.	57,400	\$10.00	\$574,000
Sidewalk	S.F.	229,600	\$3.75	\$861,000
Drainage	L.F.	28,700	\$100.00	\$2,870,000
R.R. Crossing Bridge	Each	1	\$4,000,000.00	\$4,000,000
Jordan River Bridge	Each	1	\$1,500,000.00	\$1,500,000
Subtotal				\$17,290,343
Contingency (30%)				\$5,187,103
Mobilization (5%)				\$864,517
Utilities by Owner (15%)				\$2,593,551
Construction Costs Subtotal			\$25,935,515	
Preconstruction Engineering (12%)				\$3,112,262
Construction Engineering (10%)				\$2,593,551
Engineering Costs Subtotal			\$5,705,813	
Total Project Construction Cost (with Engineering)				\$31,641,328
Right-Of-Way				\$11,313,900
Total Project Cost (with Right-of-Way)				\$42,955,228

Assumptions:

Price assumes a 106' ROW

Road Length = 26,900 ft

Asphalt Concrete Pavement Density = 155 psf

Utility costs = 15% of construction costs

Drainage includes 24" pipe culvert, catch basins every 300', and 18" cross culverts

Planning level costs based on 2001 market values.

4" Sidewalk width estimated at 5".

Right-of-Way estimated at \$3.00/SQ. FT. Right-of-way costs are highly variable and should only be used for rough planning purposes. They could vary significantly from the estimate based on the economic status of the area, the amount donated by developers, the amount of land within the corridor that is not preserved and must be purchased at future higher costs, etc.

South Corridor Area				
Item	Unit	Quantity	Unit Price	Amount
Removal of Existing Asphalt	S.Y.	92,089	\$3.50	\$322,311
Clearing and Grubbing	Acre	102.0	\$2,800.00	\$285,554
Roadway Excavation (2.2' Thick)	C.Y.	437,475	\$6.50	\$2,843,585
Asphalt Concrete (6" Thick)	Ton	171,426	\$35.00	\$5,999,914
Untreated Base Course (8" Thick)	C.Y.	109,778	\$15.00	\$1,646,674
Granular Borrow (18" Thick)	C.Y.	245,772	\$12.00	\$2,949,267
Curb and Gutter	L.F.	106,600	\$10.00	\$1,066,000
Sidewalk	S.F.	533,000	\$3.75	\$1,998,750
Drainage	L.F.	53,300	\$100.00	\$5,330,000
R.R. Crossing Bridge	Each	1	\$4,000,000.00	\$4,000,000
Jordan River Bridge	Each	1	\$1,500,000.00	\$1,500,000
Subtotal				\$27,942,054
Contingency (30%)				\$8,382,616
Mobilization (5%)				\$1,397,103
Utilities by Owner (15%)				\$4,191,308
Construction Costs Subtotal				\$41,913,082
Preconstruction Engineering (12%)				\$5,029,570
Construction Engineering (10%)				\$4,191,308
Engineering Costs Subtotal				\$9,220,878
Total Project Construction Cost (with Engineering)				\$51,133,960
Right-Of-Way				\$17,102,628
Total Project Cost (with Right-of-Way)				\$68,236,588

Assumptions:

Price assumes a 120' ROW

Road Length = 26,900 ft

Asphalt Concrete Pavement Density = 155 psf

Utility costs = 15% of construction costs

Drainage includes 24" pipe culvert, catch basins every 300', and 18" cross culverts

Planning level costs based on 2001 market values.

4" Sidewalk width estimated at 5".

Right-of-Way estimated at \$3.00/SQ. FT. Right-of-way costs are highly variable and should only be used for rough planning purposes. They could vary significantly from the estimate based on the economic status of the

area, the amount donated by developers, the amount of land within the corridor that is not preserved and must be purchased at future higher costs, etc.

Appendix D

Public and Agency Involvement

NVCS Public and Agency Involvement Meeting Log

Date	Meeting	Date	Meeting
05/03/00	Project Team	01/10/01	TAC
05/17/00	Project Team	01/17/01	PAC
05/24/00	TAC	01/18/01	Property Owners
06/13/00	American Fork Staff	01/31/01	Property Owners
06/13/00	Lehi Staff	02/07/01	Pubic Information Meeting
06/13/00	Utah County Staff	02/09/01	Property Owners
06/14/00	Project Team	02/13/01	Property Owners
06/14/00	Lindon Staff	02/14/01	Property Owners
06/15/00	Saratoga Springs Staff	02/14/01	TAC
06/16/00	Cedar Fort Staff	03/08/01	Property Owners
06/21/00	Municipal Coordination	03/20/01	Property Owners
06/22/00	TAC - Scoping Meeting	03/26/01	Property Owners
06/27/00	Property Owners	03/28/01	TAC
07/05/00	Project Team	04/02/01	Property Owners
07/12/00	Lindon Planning Commission	04/04/01	Project Team
07/19/00	Project Team	04/04/01	PAC
07/26/00	Project Team	04/17/01	Property Owners
08/09/00	Project Team	04/23/01	TAC
08/23/00	TAC	05/02/01	TAC
08/30/00	Project Team	05/02/01	PAC
09/14/00	Project Team	05/08/01	MAG/Property Owners
09/27/00	TAC	05/09/01	Army COE
10/04/00	Project Team	05/22/01	USFWS/Army COE
10/11/00	PAC	05/23/01	Property Owners
10/18/00	Project Team	05/25/01	Property Owners
10/25/00	TAC	06/12/01	TAC/PAC
11/01/00	Project Team	06/13/01	Public Information Meeting
11/07/00	American Fork Staff	06/28/01	TAC
11/13/00	Army COE	07/17/01	Lehi Planning Commission/City Council
11/14/00	Project Team	07/26/01	Saratoga Springs City Council
11/16/00	Lehi Staff	08/08/01	Saratoga Springs Staff
11/20/00	TAC	08/09/01	American Fork Staff
12/05/00	Project Team	08/16/01	UDOT Region 3
12/06/00	PAC	08/20/01	Property Owners
12/12/00	Project Team	09/04/01	Lehi Planning Commission/City Council
12/12/00	Property Owners	09/06/01	Lehi Staff
12/18/00	Property Owners	09/25/01	TAC
01/04/01	Project Team	10/04/01	Utah County Mayors/MAG

North Valley Connectors Study

February 7, 2001 Public Information Meeting

Meeting Summary

- Approximately 150 residents attended the meeting according to the sign-in sheets (probably closer to 200 attended).
- 73 Comment Forms have been received as of 3/1.

Summary of Comments

- **Do you agree with the population forecasts for the study area that show substantial growth occurring in the North Utah County area over the next 30 years?**

Yes, I agree	No, I do not agree	Not sure
53	6	10

- **Based on your perception of the North Utah County area growth over the next 30 years, do you feel that the NVCS is a worthwhile project and should be done?**

• Yes, I agree	• No, I do not agree	• Not sure
• 56	• 6	• 6

- **What is your opinion of the ability of the existing transportation system currently in place to accommodate the growth projections and associated travel demands for the next 30 years?**

0	Existing system is adequate and no transportation improvements are needed
12	Existing system is fine, but a few minor transportation improvements will be needed
48	Existing system is inadequate and major transportation improvements will be needed
10	Other

- Growth rate needs to be controlled (2)
- UTA/mass transit is needed
- Need expansion of existing roadways
- Do not let any other subdivisions until roadway system is developed
- Service transportation needs into Salt Lake Valley where jobs are - not Orem and Provo
- Development should have been addressed earlier

- 700 South should not be an option because it impacts homes and businesses
- Do not want to lose existing environment
- Need improvements; however, not sure that so much roadway is needed
- Have not addressed water etc...
- Building new roads will encourage additional growth and more problems

- **If you feel that additional transportation improvements are needed to accommodate growth and development, what type of improvements are needed?**

20	Improved/additional north-south corridors
24	Improved/additional east-west corridors
7	Improved/additional alternatives modes such as transit and bike/pedestrian trails
29	All of the above
2	None of the above, no transportation improvements are needed
9	Other

- Light rail/Mass transit (3)
- We only need one corridor, not three (2)
- Road across Utah Lake
- Connect 2300 West to the new north roadway
- Take north alignment through Thanksgiving Point
- Growth needs to be controlled
- Consider agriculture in planning
- Need a bike and jogging path down 500 West (Lehi) would be beneficial

- **Which transportation improvements do you feel are the most critical?**

19	Better/improved north-south routes to get to/from Salt Lake area
15	Better/improved east-west routes to get to/from Orem/Provo area
9	Better/improved north-south routes to travel within the local North Utah County area
18	Better/improved east-west routes to travel within the local North Utah County area
25	All of the above
1	None of the above, no transportation improvements are needed
3	Other

- Local improvement; decrease urban sprawl
- Improve existing routes
- Improve SR-73

- **The NVCS project has identified the need for additional east-west corridors in each of the three study areas (North, Central, and South). Which study areas do you feel need additional east-west transportation corridors?**

18	North Corridor Area	8	North & Central Corridor Areas
13	Central Corridor Area	7	North & South Corridor Areas
11	South Corridor Area	7	Central & South Corridor Areas
17	All three Corridor Areas	5	No new corridors are needed in any of the areas

- **If you feel that additional corridors are needed, which area do feel is in the most immediate need of improvements and should be addressed first?**

17	North Corridor Area	21	South Corridor Area
30	Central Corridor Area	1	No new corridors are needed in any of the areas

- **If you feel that additional corridors are needed, how large do you think they should be to provide long term transportation mobility and roadway capacity?**

19	Multi-lane divided highway (freeway or expressway facility)
22	3 lanes in each direction (major arterial facility)
23	2 lanes in each direction (minor arterial facility)
2	1 lane each direction (collector facility)
4	No new corridors are needed
1	Other

- Build large enough roads to minimize the overall roadways
- Improve existing roadways
- Traffic will increase as the road sizes increase - not the other way around

- **What other corridor specific or general study comments do you have?**

- Utilize light rail/mass transit (5)
- Cross Utah Lake with roadway (5)
- An east-west corridor is a must; need corridor now (6)
- School near 700 South (Snow Springs Elementary) will be impacted by the central corridor; safety and pedestrian issues (5)
- Use 1100 South if central area is used (3)
- A 700 South alignment creates safety issues and impacts existing residences (5)
- Need north/south freeway other than I-15 and an east-west connection between freeways (4)
- Favor C1-W1 since there are no subdivisions planned (4)
- South corridor impacts several ranches/businesses and agricultural zone (4)
- Corridors impact Lehi residences (3)
- Impacts business (mink ranches, horse breeding) (2)

- Central corridor is not necessary
- South Corridor is the least disruptive alternative
- Decrease property values along 700 South if roadway is constructed
- Need an east-west corridor in eastern Lehi (Alpine, Cedar Hills, and Highland)
- If south corridor is selected choose alignment that would minimize wetland impacts
- No new roads should be built below 700 South
- Planning should include for additional lanes for future growth
- Widen 1200 East in Lehi
- Connect south roadway to 500 East or Main Street AF interchanges (not new PG Interchange)
- Need connector roads between north, south, and central corridors
- Need to incorporate high density population into traffic numbers?
- Provide immediate speed limit increase
- Use 700 South in central corridor
- Use existing Jordan River Crossings
- Do not use south corridor; this would encourage development
- Control noise and speed on new roadways
- Extend Saratoga Road to freeway access by Thanksgiving Point would help
- Need freeway; not Bangerter Highway or State Street type
- Preserve historic Main Street Lehi
- Widen Lake Road because the State already owns ROW
- Reevaluate Lehi Main Street one-way couplet
- Do not use 7600 North roadway into Eagle Mountain
- Don't destroy agricultural areas in North Utah County

North Valley Connectors Study

June 13, 2001 Public Information Meeting

Meeting Summary

- Approximately 126 residents attended the meeting according to the sign-in sheets (probably closer to 150 attended).
- 121 Comment Forms were received as of 6/22.
- 102 Comment Forms were received on 7/9 from a group of residents in the 700 South neighborhood. Their responses were not logged, but most of the comments dealt with their disapproval of 700 South as a Central Corridor option. They felt that the 700 South option was unsafe, would decrease their property value, displace residents, problems backing out of driveways, children's safety compromised, smaller road when bigger road needed, too expensive, schools too close, would affect businesses adversely, etc.

The majority responses to the other questions were:

- All three corridors need roads or North and Central Corridors only
- North Corridor should be built first, South Corridor second, Central corridor third.
- Agree with the 10000 North (2100 South Lehi) option in the North Corridor.
- Prefer 1000 South option or do not like either option in the Central Corridor.
- Agree with the Modified Sewer Outfall Line Option in the South Corridor.

Summary of Comments

- **The North Valley Connectors Study indicates the need for a new east-west facility in each of the three corridor areas...North, Central, and South. Which Corridor areas do you feel need additional east-west roads?**

38	All three corridors need roads
3	North corridor only
5	Central corridor only
2	South corridor only
12	North & Central corridors only
42	North & South corridors only
4	Central & South corridors only

3	None of the corridors need roads
5	No answer

- **Assuming all the corridors are needed, please rank each corridor in the order you feel they should be constructed?**

68	North Corridor 1 st
25	Central Corridor 1st
18	South Corridor 1st
29	North Corridor 2nd
19	Central Corridor 2nd
53	South Corridor 2nd
6	North Corridor 3rd
47	Central Corridor 3rd
33	South Corridor 3rd
1	None of the corridors should be constructed
7	No answer

- **In the North corridor, 10000 North (2100 North Lehi) has been recommended as the preferred alignment. This would generally be a new 106' facility and require a new crossing of the Jordan River. Do you like this option or do you think another corridor would be better?**

92	Yes
13	No
14	No answer

- Why did Lehi allow Thanksgiving Point to create a barrier to an existing interchange. The north corridor should connect to the Alpine/Highland exit across Thanksgiving Point (2)
- Construction of new bridge over Jordan River
- Absolutely - least expensive for the results relief.
- If any corridor location the 10000 North (2100 North) should be first - then your south corridor next - your central is right next to a public school - how many children would it take to get killed before you could tell that was a bad idea.
- The corridor is OK but why take out the river crossing at 1500 North that has just been completed at great expense, that expense I'm sure has been ours! (2)
- Redwood Road could be widened and used and is already an existing right-of-way.

- People take Redwood to Bangerter to SLC anyway.
- Redwood to Bangerter will do until Legacy Highway constructed. I do not believe people are going east through Lehi to end up going North to SL county.
- Master plan shows 700 South as corridor
- It will no relieve the congestion right now. Almost 501 of the people go east or south, only 321 go north. I don't think this is appropriate right now. I would never use it.
- New interchange or remodel existing to ensure easy traffic flow, if not I-15 would bottleneck and fewer people would use this route.
- Can 11800 West connect to 7200 North? Then people in Cedar Fort, Eagle Mountain area can when going north turn and go up 10000 North and when going south turn and go down 7200 North.
- I agree with the 2100 North option, but think there should be a more direct route west of Redwood Rd. to SR-73.
- Makes the most sense.
- Would lie parallel to hundreds of new homes where there are small children & would decrease property value (2)
- Yes, because it does not have existing residential
- We could reserve this space for a 120' facility for future growth and there are few homes that would be disturbed and plan around this road.
- Yes, better tie in to I-15 for Eagle Mountain & Cedar Hills and get it out of downtown Lehi.
- **In the Central corridor, there are two options still being evaluated...700 South and 1000 South. The 700 South Option follows the existing road and would utilize a narrower 80' right-of-way where existing developments preclude widening to a 106' facility. The 1000 South option would be a new 106' wide corridor. Both options would tie into SR-73 just east of the Jordan River. Which option do you prefer?**

29	I prefer the 700 South option because....
----	-------------------------------------------

- Straight road. Probably more cost effective. City has already planned for it.
- It would be a lot straighter and cheaper.
- It appears to be easiest and less expensive.
- On existing Right-of-Way, less impact to the environment and would be less impacting traffic today. The corridor would be most cost effective. (2)
- Cannot have a five lane road next to the school. The central corridor is not even thinkable.
- Relocate the few houses, keeping it from being 106' and build it on existing location.
- It has been on the master plan for a long time as a collector road. People have based decisions on master plan and it should not be changed now. (6)
- Less construction. The south corridor goes through total wetland and would require more maintenance and construction material. South corridor also service Saratoga mainly as a route where the central would accommodate all but the North corridor.
- Existing road already built. City owns it! City doesn't have the money to buy up land. Also impacts property we own across street from elementary school. 1000 South goes right through our property. Upset that the city has gone so far with our development and now a freeway through our proposed subdivision.
- Serves the greater Central Lehi area better.
- 1000 South option to close to elementary school. With north & south corridors 700 South could handle the traffic with existing 86' wide road.
- Right-of-way already there. Affect people less than 1000 South. Would make part of my property worthless.
- Already exists, in the master plan, other I-15 exits will take some stress off Lehi Main St, 80' road is big enough, 1000 South is worse because of the school.
- Just need to be widened, more cost effective, higher speed limit.
- Existing road, 80' ROW planned for, cause less disruption.
- Already exists, do not need another road cutting through Lehi.

- ROW there, some sections already improved to the 80' ROW, don't need 1000 South if 700 South already there.
- Would not further cut up the city, 80' sufficient, use North & South for 106' ROW.

66	I prefer the 1000 South option because...
----	-------------------------------------------

- The existing subdivisions face 700 South so backing out of driveways will be a safety issue. 1000 South should have lots back against the arterial class roads and only enter 1000 South at intersections.
- No impact to people living there. Wider road would be better. Lots of children live near the 700 South corridor. (4)
- Less impact to homes and school. (6)
- I believe the already existing homes on 700 South would pose a problem. 1000 South is still a mainly open area. Plan for it now so that people's front yards and driveway are not stubbed into 45 mile/hour traffic.
- I like this plan, because it bypasses Main St.
- Wider road, less current affected population.
- Less homes would be in the way. You'd have too many obstacles in 700 So. Congestion would be very heavy by sub-divisions and accidents would be high with children-cars getting out of driveways, etc.
- Less expensive.
- It is too dangerous to have children cross a major road and the road should be build wide enough to handle traffic.
- Larger width for shoulders. Whichever corridor selected, that it will connect to a future North corridor into Salt Lake County.
- This option should not be considered. (3)
- Doesn't impact as many existing homes and development and allows for wider road which will be needed in future. (2)
- Its open land and would not go through a subdivision. We have one road on 700 South, 1000 South would give us another road maybe relieving some traffic on 700 South.
- Go through farmland. Wouldn't impact family life as much.
- A - Wider and better acceleration and deceleration lanes at subdivisions, B-more southerly route serve developments close to the lake and defer need for Southern corridor, C- less impact to current residential development, D- allows city planners more time to plan & zone undeveloped flanks of road.
- Safety issues, property value on 700 South decrease if it built.
- Less people affected but no good route. Would like the 106' 700 South option if it is to be built so my home would be bought and wouldn't have to cross 700 South.
- Less costly to city & utility companies. 700 South put children and animals at risk. Would also lose a lot of our yard and the 25 mph speed limit.
- Too many houses on 700 South and too expensive to build there, real estate value diminish, safety. (2)
- Wider, higher speed limit, the city let Patterson Construction build along 700 South and 700 South would not be safe. 700 South would just put a band-aid on the problem.
- Less people affected. 700 South planned to be a main corridor but city and the builder never mentioned that and built the homes facing the road so it should remain a residential street.
- Better serve the areas that need immediate help.
- It is not a direct route to the elementary school. We live on 700 South and are nervous about our child's safety. (2)
- Developments can be planned around 106' road. 1000 South is for the good of many and the detriment of the few. Lehi City is elected to carry out the good of the citizens and they need to go with 1000 South option.
- Just crosses open land and a wider road to carry more traffic possible.
- Move traffic away from residential area, wider road could be built.
- 700 South detrimental to our property value, safety concerns, speed limit high.
- Neither good, but 1000 South better, disrupt less people.

- Too many small children on 700 South, small road, school crossing, buy land without houses on it.
- Use 1000 South with big 106' facility, fewer houses, people, schools near 700 South. (2)
- Small children cross 700 South everyday. (8)
- Least impact on Lehi residents and road can be as wide as needed.
- 700 South would not be in the best interest of people with disabilities.
- Too many established homes on 700 South and the elementary school is there. (7)
- 1000 South needs to be completed quickly before residential homes is allowed to be a concern.
- Not as many families are affected.
- 700 South would cause drug and gang problems.
- 1000 South still available for development, take advantage of available farmland and build 1000 South before residences area built.
- Can control development with this option, there are 3 mink farm, two schools, and residences along 700 South.
- Wider road here with fewer residences & schools.
- Would not take away people's yards.
- Do not need another congested Lehi Main St.
- No schools, safety issues, 700 South not wide enough, creating traffic issues for American Fork, litigation from existing mink farmers if 700 South is chosen.
- Lehi should not have allowed two schools to be facing the street and school zones within two miles of each other.

29	I don't like either option because...
----	---------------------------------------

- There is no new bridge across the river. There should be a way to get from Eagle Mountain and Saratoga Springs to the freeway south of the existing bridge.
- There needs to be a new bridge built across the Jordan River to connect the road to Redwood Rd. Why not go farther south where development hasn't occurred yet?
- Should be modified to cross the River and hook to 7600 North.
- Costs are too expensive.(2)
- This option should continue across the Jordan to Redwood Road or beyond.
- The road will go right through our house. (2)
- Proximity to elementary school. If I had to choose I would choose 1000 South.
- Disrupts homes & farmsteads, traffic unsafe for residential neighborhoods, hard to get on and off road, lack of parking.
- Home near 700 South, security & peace jeopardized, both options place a 5 lane highway near an elementary school. Noise & air pollution and safety issues are extraordinary.
- 700 South not suitable because of children & residential.
- Do not need three multilane roads running through Lehi. (9)
- South is close to Central so the Central corridor should be on Main St. or one block north of Main
- Would rather only the North & South option be built. (4)
- Have a mink ranch there worth 4 million and live on 700 South and I don't think I would get fair compensation for my loss.
- Residential area, too many people backing out of driveways & children walking along a highway (2)
- 700 South is too residential and the 1000 South option is too close to the South Corridor.

2	No answer
---	-----------

- **In the South corridor, the Modified Sewer Outfall Line Option has been recommended as the preferred alignment. This would generally be a new 106' facility in American Fork, would widen 7350 North (1900 South Lehi) to 106' in Lehi, and would improve the existing crossing of the Jordan River on Saratoga Springs Road. Do you like this option or do you think another corridor would be better?**

94	Yes, I agree with this corridor location
7	No, I don't agree with this corridor location because...
18	No answer

- Makes sense, American Fork is taking ROW as properties annex. This does not conflict with existing subdivisions and property acquisition cheaper.
- Too costly (2)
- Has a business that will be affected. It would be best to go north ½ a mile.
- Go as far south as you can to avoid 3 families livelihood.
- Wetlands a problem
- I don't know which is best on the South corridor.
- How will sewer line be affected? Water table? Up-keep?
- Costs are too expensive & you're dealing with sensitive environmental concerns.
- Not informed enough to have an opinion. (3)
- Less impact, should cost less for end product.
- Should be less than 106'.
- Fewer homes affected, no children would live on a wide busy street.
- With the new off ramp more people will use this option.
- Would help American Fork & Saratoga Springs growth.
- Would like to maintain rural Lehi there.
- **What other corridor specific or general study comments do you have?**
- To solve Lehi Main St. problem don't put traffic on A.F. Main Street. Lehi solve some of its own problems by connecting to I-15 through Thanksgiving Point or upgrade D&RGW RR crossing below the Mill Pond. Upgrade the road and freeway access on A.F. Main Street.
- Thanks
- Hoping for money to begin A.S.A.P I feel your study and reasoning are good.
- I believe building the North corridor first is not the best option. I do not believe this will eliminate Main Street traffic problem. Construct the 1000 South route then build the north and eventual south corridor. I live on Main Street and it is a mess!
- Maps show 2600 North in Lehi as a complete road to 8800 West. There is a wreck yard that blocks the end of 2600 North and finishing this road would help our development (behind block factory).
- Where is money coming from? People's land? Buying or condemning? Upkeep, city or state or...? Lights? Speed limits?
- Please do all you can to include future connection to North. Strongly encourage municipalities to consider or plan for future grade separated interchange at Redwood Rd.
- A closed access freeway like I-15 needs to drop straight south from the point for the SL commute and then another freeway to the south of the city. A band-aid won't work – need to be fixed right the first time.
- None! However you should not create a bottleneck on HWY 73 west of Redwood Rd – 7600 North should be connected to the Central corridor.
- What good are plans if we change half way to the goal. Let's stick with the plan. (2)

- Shorter road better for fuel, time, and emergency and police enforcement. Central is the shortest for all town and people use. Easy to construct a bridge for the central route and get congestion off the Cedar Fort highway.
- Start building bigger and better roads with better pedestrian crossovers so children can cross safely to school. Have some noise and pollution control in place when the road is built. 2300 West should be developed as a major north-south connector to all three corridors as the construction is started on any of them.
- We would like to be notified about any council meetings in Lehi that this will be discussed at. (2)
- I agree that new roads must be built & the choice are never easy. I applaud your foresight & willingness to accept public opinion. Like to see greater emphasis on public transportation options and I believe they would be utilized.
- The north corridor should stay north allowing for growth in the southern regions.
- The roads need to be put in but the city needs to stop approving and building new subdivisions that could affect the road. I live one block from 700 South and I wouldn't have built here if I had known. Children's safety is important. Only a few would be affected with the 1000 South option.
- You can never please everyone. I feel we need not drag our feet. Pick a corridor and build.
- The south corridor involves a great distance without justifiable residential or commercial development on either side until it crosses the river. While it may ultimately serve the convenience of many established residents in Saratoga Springs it does little to encourage development along the route that could compensate land owners with accelerated market appreciation, nor does it attract as much significant development that would generate income for the affected municipalities.
- Lehi has not created the problem they are just caught up in it. Lehi should not have to give up property for towns west of them. The north and south corridor are the best options for Lehi.
- North corridor is a long way around. The shortest distance between two points is a straight line. I think we need to solve the problems now not project for 700 in the future. Go with 7th South now then the north corridor.
- North 1st, South 2nd, & Central 3rd because North service Eagle Mountain area, South service Saratoga, & Central developed as need arises. Eagle Mountain & Saratoga already exist.
- Don't know why 700 South an option. Need to build north & south first. Saratoga Springs needs an outlet.
- 3 corridors needed, but the central corridor through a residential section is not good. 1000 South allows the road to be as wide as it needs to be without increasing risks to a residential neighborhood.
- North & South enough to move traffic, Lehi should confirm with state before allowing developments where a proposed road will be.
- What is wrong with power line option? If you had this road you wouldn't need central or south. Why was it eliminated?
- 1000 South breaks up too much farmland & wetlands, wouldn't be as cost effective as 700 South since the road is already there most of the way.
- Developing a North-Central corridor is possible. Corridor midway between 700 South & 10000 North options, the wetland impacts could be minimized. 700 South option creates noise issues and impacts to Snow Springs Elementary. Reconsider the Central corridor options and try to minimize impact to local residents.
- Is 106' ROW necessary on North & South corridors? The larger the road, the bigger the barrier it becomes to the community as it fills around the roads.
- It's about time.
- There is a need for future east/west roads, but we don't need to cut up the city with 106' roads. Could 80' roads handle the traffic?
- If Legacy built then we shouldn't built the 106' roads in Lehi because Legacy will take most of the traffic to the north. Use something less than 106' on the Central & South Corridors.
- Everyone in these areas need to be contacted for a general meeting. One day notice is not enough. People are adamant about not have a corridor through 700 South.
- Fix 700 South Lehi to a consistent width first then go to 1000 South for the main corridor.

- Will participate in any effort to stop 700 South option, if this option selected will sell home and sue. 700 South not fair, affects 2 elementary schools.
- Would like the needs of homes & families to outweigh the objections of land-owners and developments.
- 700 South location only 2 mink ranches are designated as protected agricultural zoning when in fact there are four ranches along that road. Two more are situated together at the crossroads of 8170 North and 7800 West. (2)
- Be considerate of people living on 700 South currently.
- 700 South is not a good option because it would only be 80' and have to have lower speed limits and 2 school zones and thus is not the best option.
- 700 South children are at risk and traffic would be horrible and everything would be a big mistake.
- A big trailer could not back out if 700 South was built, Lehi should not have allowed homes to face 700 South.
- Frustrated to see lack of planning, noise levels would be increased and property value decrease on 700 South.
- Put the road in first then people or businesses can judge if that is where they want to be, don't put the road on 700 South with existing homes & children.
- Seen many pets killed and children narrowly missed on 700 South already, so do not put the Central corridor on 700 South.
- 700 South although on the master plan is unattainable now. Please remember those who live along 700 South.
- Do not want 700 South widened or traffic increased, 1000 South can be more of an expressway with the back of homes against it.
- North & South corridors relieve the congestion. (2)
- 1000 South would make a much better expressway.
- It is a state road problem, should be constructed outside of Lehi City limits.
- Built home with intentions to stay, other people moving a lot and their communities have 5-20 mph speed limits. Should build the south corridor.
- Not sure how the central corridor will alleviate congestion on Lehi Main St.
- 700 South would make it difficult for people to back out of driveways, with North & South connecting to I-15 no need for central corridor.
- Central corridor would eliminate rural feeling in Lehi.
- Central corridor affect many peoples, children's safety, and schools. (2)
- Be considerate of mink farmers, if 700 South chosen traffic will be unbearable on American Fork Main St., try to plan ahead when making decisions.
- There are 56 driveways on 700 South instead of 27, listen to the recommendation of paid independent engineering consultants who recommend using 1000 South.
- We experienced a problem in Kearns, having to back out of the driveway onto 5415 South and do not want that recreated.
- Lehi should not fund roads to benefit cities west of Lehi.