

1.0

PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 PROJECT BACKGROUND

The City of Provo, in conjunction with the Federal Highway Administration (FHWA), and the Utah Department of Transportation (UDOT), proposes to improve roadway system linkage in southwest Provo by constructing a new arterial roadway between Provo Airport and the vicinity of the U.S. Interstate 15 (I-15)/University Avenue/1860 South Interchange (Proposed Project). This project is known as the “Provo Westside Connector” (PWC). This chapter examines the specific purposes and needs of the Proposed Project in detail. The needs described in this chapter were used as a basis for evaluating alternatives in Chapter 2.

The Project Area, outlined in Figure 1-1, is located in southwest Provo. Southwest Provo is defined by three Provo neighborhoods (Provo Bay, Sunset, and Lakewood), which are generally located south of Center Street and west of I-15. The Provo Airport is located immediately west of the Project Area.

The Project Area boundaries illustrated in Figure 1-1 were chosen to be inclusive of the logical termini (rational “endpoints”) for the Proposed Project but did not restrict consideration of a reasonable range of alternatives that may meet the identified project needs. On the east side, the I-15/ University Avenue/1860 South Interchange (the Interchange) was selected as the project terminus because of its proximity to business and economic centers and because it has existing transportation infrastructure capable of accommodating increased traffic capacity. On the west side, the entrance to the Provo Airport was selected as an endpoint because it is a center of regional significance with existing and anticipated traffic generation. Airports have been identified by FHWA (1989) as traffic generators which warrant arterial service.

1.1.1 Provo City’s Vision for the Proposed Project

Provo City’s vision for the Proposed Project is to provide an essential component of Provo’s

What is an Environmental Impact Statement (EIS) and what decisions will be made?

- *The objective of an EIS is to disclose potential impacts to the human and natural environment resulting from a range of alternatives.*
- *A draft EIS is first prepared to give the public and agencies an opportunity to review and comment on potential impacts.*
- *The decision to be made, based on this analysis, is whether to select a No-Build Alternative or one of the build alternatives presented in Chapter 2 of this document.*

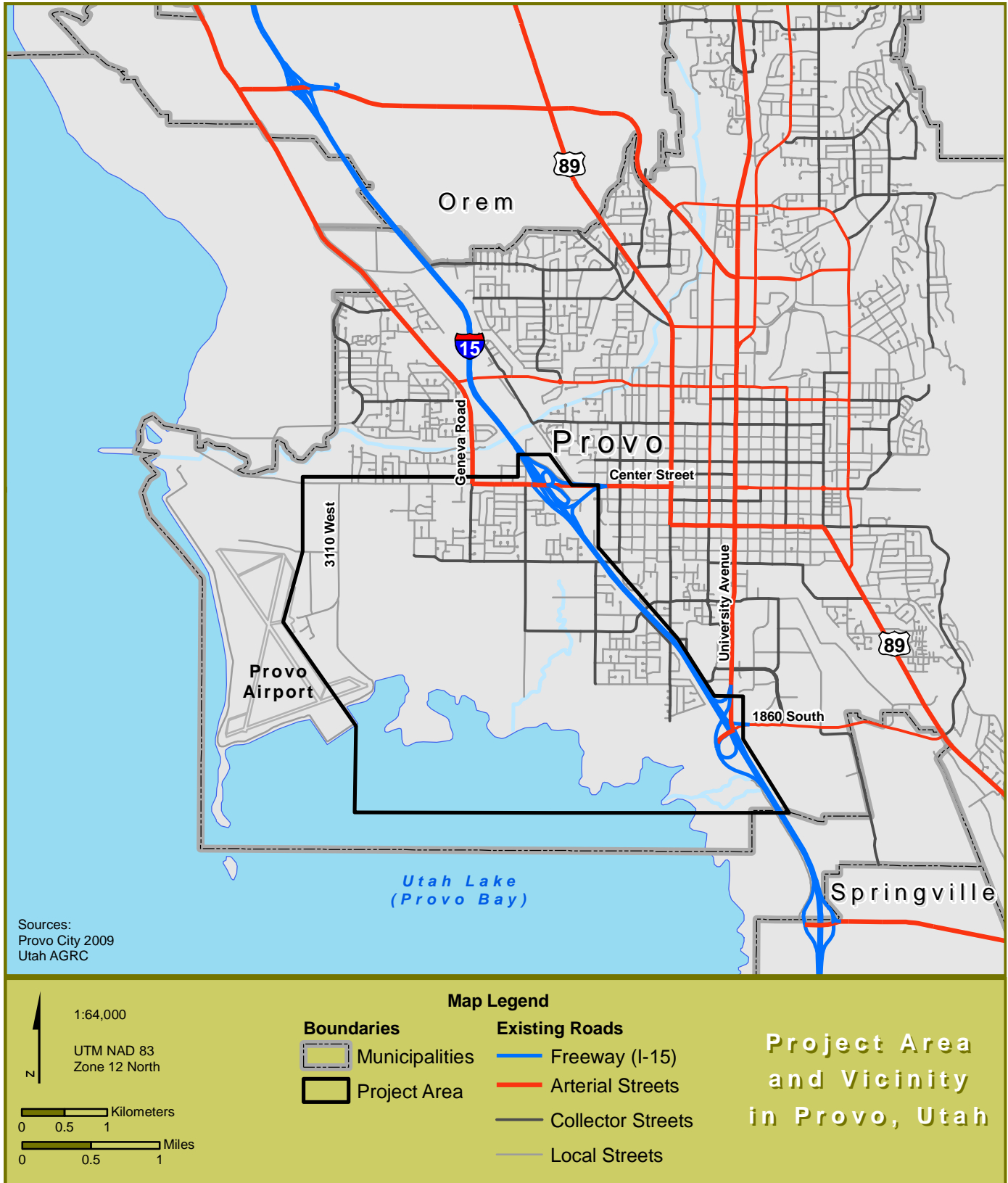


Figure 1-1. Project Area and vicinity.

transportation infrastructure west of I-15, linking this developing area with established commercial, industrial, and residential centers east of I-15. The Proposed Project would help maintain the attractiveness of Provo as a place to live and work. A planned trail on the southern boundary of the arterial roadway would provide a context-sensitive amenity for south Provo, offering opportunities for recreational access to Provo Bay, wildlife viewing, and fitness-oriented recreation.

1.1.2 Local and Regional Planning to Address Deficiencies

A variety of plans have sought to address the current and anticipated transportation deficiencies associated with future growth. The Proposed Project is concerned with improving transportation system linkage that would support planned residential and commercial growth in the Project Area and maintaining economic viability in Provo. The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) Federal legislation of 2005 amended the U.S. Code by adding Section 139. Section 139 (23 U.S.C §139(f)(3)) affirms the use of such objectives in establishing the purpose and need for a transportation project. It states:

The statement of purpose and need shall include a clear statement of the objectives that the Proposed Project is intended to achieve, which may include—

- (a) Achieving a transportation objective identified in an applicable statewide or metropolitan transportation plan;
- (b) Supporting land use, economic development, or growth objectives established in applicable Federal, State, local, or tribal plans.

The Proposed Project is included as an integral element of the following plans: Provo City General Plan (Provo City 2009), Provo City Transportation Master Plan (Provo City 2000b), Provo Municipal Airport Master Plan (PMAMP) (Provo City 2000a), Utah County General Plan (Utah County 2007), and the Mountainland Association of Governments (MAG) 2007–2030 Regional Transportation Plan (RTP) (MAG 2007). This section of Chapter 1 reviews the planning processes that have gone into the current City, County, and Utah Valley metropolitan transportation planning documents. This discussion provides background regarding how the proposed arterial roadway was determined to be an important component of local and regional mobility.

1.1.2.1 Provo City Planning

Provo City has planned for anticipated transportation deficiencies by proposing the PWC and has adopted policies that allow for planned development and land use changes. The Provo City Transportation Master Plan (Provo City 2000b) outlines the strategies that have been developed to address Provo’s existing and future transportation needs. Because the Provo City Transportation Master Plan (Provo City 2000b) is an element of the Provo City General Plan (Provo City 2009), the extensive community efforts and public involvement activities also apply to the Provo City Transportation Master Plan. Recommended roadway improvements are included in the Provo City Transportation Master Plan in an effort to meet the current and future needs of transportation within Provo. The Proposed Project is listed in the Provo City Transportation Master Plan as the most needed, airport-related transportation improvement project. The roadway is listed as an extension of 1860 South Street, from the Interchange to the Provo Airport as a five-lane arterial roadway.

The Provo City General Plan (Provo City 2009) is a comprehensive, long-range statement of goals and related policies to guide future growth and development in Provo. Adoption and

implementation of the current Provo City General Plan has been a citizen and community effort for many years. Prior to adoption of the Provo City General Plan, Provo City staff worked with a special community task force to gather and address public concerns, values, goals, and objectives. Alternative land use plans and recommendations were presented to the public, and various land uses and policies were incorporated into a Provo City draft general plan. The Provo City draft general plan was publicly reviewed and a series of public meetings were held around Provo to seek public comment. After further refinements and seven public hearings, the Provo City General Plan was adopted. Updates and amendments to the plan have been included only after public input through this established process. The Proposed Project is included in the Major and Local Street Plan found in the Provo City General Plan as a proposed arterial road between the Interchange and the Provo Airport.

1.1.2.2 Utah County Planning

The Utah County General Plan (Utah County 2007) is a comprehensive document that outlines the future growth and development needs of Utah County. The plan was developed after considerable public involvement and includes a Transportation and Traffic Circulation Element that identifies proposed mobility routes that would enhance traffic circulation on a county level. The Proposed Project is listed in the plan as a proposed mobility route and is called the “Provo Bay Parkway.” In addition, the Proposed Project is detailed on the Utah County General Plan Traffic Circulation and Transportation Element Map (Utah County 2007) as a proposed mobility route. For Utah County, a mobility route is defined as connecting an existing arterial roadway and collector street and constructing a new project to the “major roadway designation.” As such, the Proposed Project is specifically indicated in the plan as an arterial roadway connection. Furthermore, mapping for the Utah County General Plan illustrates the Proposed Project from the Interchange to the southern terminus of 3110 West Street.

1.1.2.3 Metropolitan Area Transportation Planning

The 2007–2030 RTP (MAG 2007) provides a plan for a future transportation system that minimizes congestion while addressing environmental, social, and financial concerns of Utah Valley by integrating local goals with Federal guidelines. The RTP is a Federally mandated document that guides the maintenance and enhancement of the regional transportation network. Based on current needs and future growth forecasts, the RTP lists multimodal transportation projects that are needed through the year 2030.

The improvements listed in the RTP cover all modes of transportation including highways, rail, mass transit, pedestrian, and bicycle travel. Prior to producing recommended improvements, MAG performs a modal analysis and needs assessment to ensure that transportation needs are met by the most efficient and appropriate means. To this end, MAG identifies and considers projects requiring the reconstruction or preservation of current transportation facilities, nonmotorized transportation, air quality, multimodal travel, system connectivity, and new capacity transportation projects.

Prior to RTP approval, community impacts of transportation facilities were analyzed to ensure that the facilities and services provided would be consistent with local planning objectives. This is accomplished through a complete analysis of social, environmental, economic, visual, land use, and mobility/access implications of the chosen modes, facility designs, and location of transportation infrastructure (MAG 2007). Public and agency involvement is sought in the early stages of plan development and continues throughout the planning process. Citizens, affected public agencies, transportation agencies, elected leaders, private providers of transportation, and other interested parties are continually encouraged to comment on and provide additional information for proposed

plans. The MAG solicits public participation through formal public hearings, open houses, workshops, presentations, and public comment periods. The RTP must also meet a variety of Federal requirements related to planning factors, air quality conformity, financial feasibility, and related planning requirements. For example, SAFETEALU and the relevant elements of the 1990 Clean Air Act as Amended Subsections 176(c)(1)(2) and (3) require MAG to develop a RTP that conforms with the applicable State Implementation Plan for air quality. The U.S. Environmental Protection Agency (EPA) Transportation Conformity Rules (40 CFR Part 93) and FHWA/Federal Transit Authority (FTA) Metropolitan Planning Regulation (23 CFR Part 450) were employed in the preparation of the conforming RTP.

The Metropolitan Planning Organization (MPO) travel demand model is used to (1) analyze projects included in the RTP, based on each project's ability to address regional mobility by identifying areas of transportation problems and (2) test alternative regional solutions. Regional roads are listed in the RTP based on the analysis of regional travel demand model outputs as well as input from local governments, the State of Utah, and broad public input. The current RTP (2007–2030) has been approved by FHWA, FTA, and UDOT.

Following this process, the current PWC project was listed on the 2007 RTP as “Recommended Improvement Number 67, Provo Airport Road.” The project is listed on the plan as a needed, new-capacity project that is regional in nature. The Proposed Project was illustrated on RTP mapping as an extension of 1860 South Street on the east, continuing west to the Provo Airport, and continuing north to Center Street.

1.1.3 The NEPA Process

This Final Environmental Impact Statement (FEIS) analyzes the potential environmental

consequences of the Proposed Project and has been prepared according to the provisions of the National Environmental Policy Act (NEPA) and the corresponding regulations and guidelines of the FHWA, which is the lead Federal agency. The primary objective of this FEIS is to analyze and disclose potential impacts to the human and natural environments that would result from a range of alternatives for the Proposed Project. The decision to be made, based on this analysis, is whether to select a No-Build Alternative or one of the build alternatives presented in Chapter 2.

This FEIS was developed with cooperation and participation from a variety of State and Federal agencies, organizations, and the general public. Appendix A provides a complete report of the lead agencies' interactions with cooperating and participating agencies and the public. The cooperating agencies involved in preparation of this FEIS are the U.S. Army Corps of Engineers, U.S. Bureau of Land Management, EPA, and U.S. Fish and Wildlife Service. A variety of public involvement activities were conducted to ensure that stakeholders at all levels were engaged. A group of stakeholders representing the public, Project Area neighborhoods, and various organizations met regularly to provide ideas and opinions regarding the Proposed Project. Presentations have been made to the Provo Municipal Council regarding the Proposed Project and newsletters were sent to Provo residents with updates and information following all major developments leading up to this FEIS. More information regarding public involvement is included in the Project Scoping Report (Appendix B) and Chapter 5: Consultation and Coordination.

Public involvement activities were undertaken to ensure stakeholders at all levels were engaged in the decision-making process.

1.2 NEED FOR THE PROPOSED PROJECT

This section of Chapter 1 addresses the main transportation problem that is the basis for the Proposed Project. Subsequent sections of the chapter describe and present data supporting the project need, and describe additional transportation objectives that can reasonably be accomplished in conjunction with the Proposed Project. The chapter concludes with a statement of the project purpose and also states screening criteria that were used to assess the ability of potential alternatives to accomplish the project purpose.

In brief, the project need is an insufficient roadway network in southwest Provo west of I-15, as

illustrated in Figure 1-2. In particular, the arterial roadway network does not adequately support:

- planned development and land use changes in southwest Provo;
- recent and planned improvements and expansion of services at the Provo Airport, as well as related commercial and industrial development in the vicinity of the airport; and
- east-west connectivity to support the continued economic viability of the commercial center of Provo east of I-15.

Central to understanding these project needs is having an understanding of the functional classification system transportation planners use to determine what types of roadway projects are

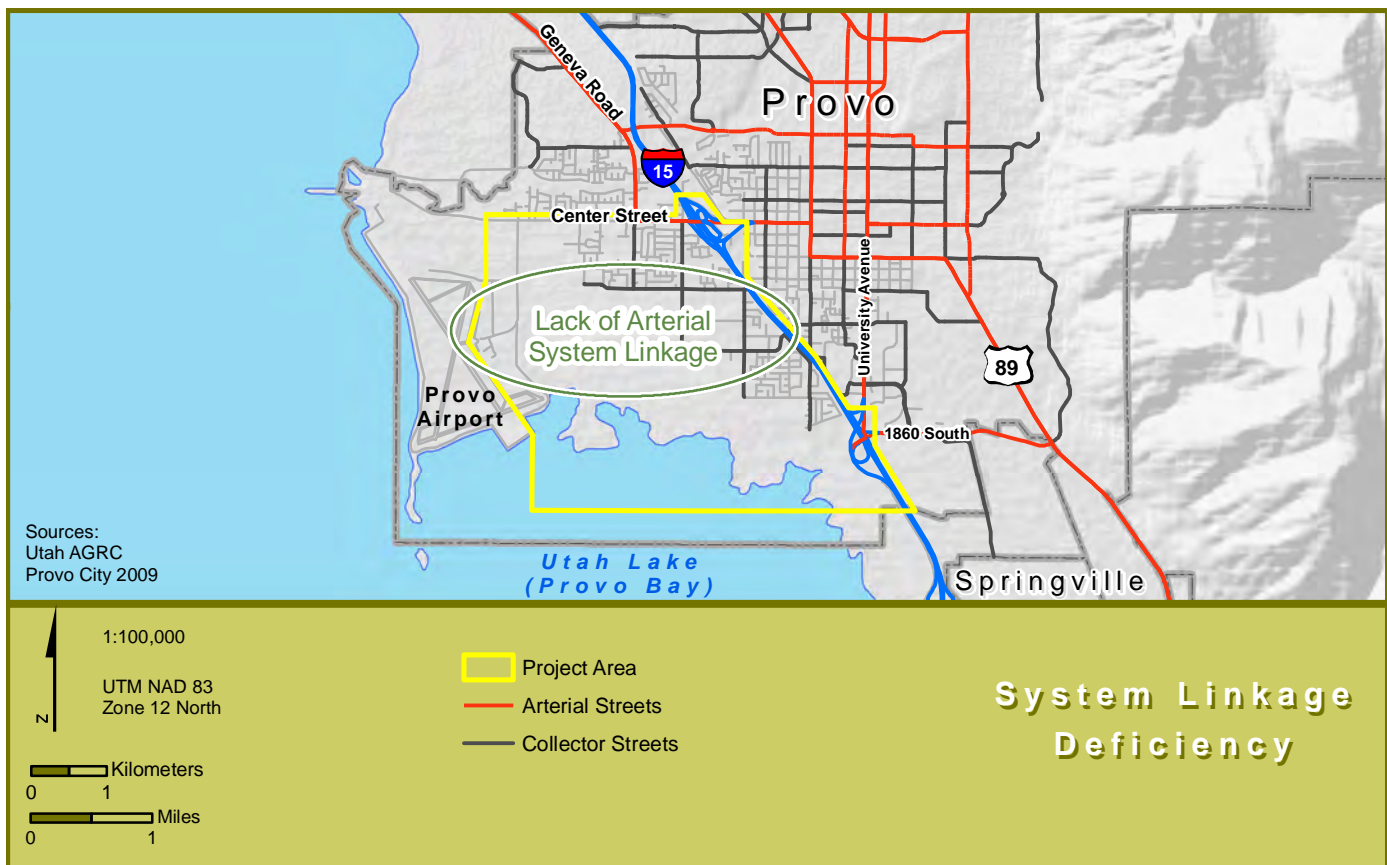


Figure 1-2. Lack of arterial system linkage in the developing area of southwest Provo.

needed, as well as where and when these projects are needed.

1.2.1 Functional Classification and Street Spacing

Transportation planning relies on a “functional classification” of roadways where smaller local streets feed into larger collector streets, which feed into arterial streets and, eventually, freeways. Basic to this process is the recognition that individual roads and streets do not serve travel independently in any major way. Rather, most travel involves movement through a network of roads. Functional classification defines the nature of this

channelization process by defining the role that a particular road or street should play in serving the flow of trips through a road network (FHWA 1989).

The Functional Classification System helps define the roadway network for a given area such that Figure 1-3 illustrates the “ranking” of different roadway types in terms of the degree of mobility versus the degree of access that each type of roadway provides. Higher capacity roads—that serve higher travel speeds and traffic volumes—are appropriately located to provide access to and from smaller roads that, in turn, provide access to homes and businesses. Freeways have limited access points and, therefore, provide the highest degree of

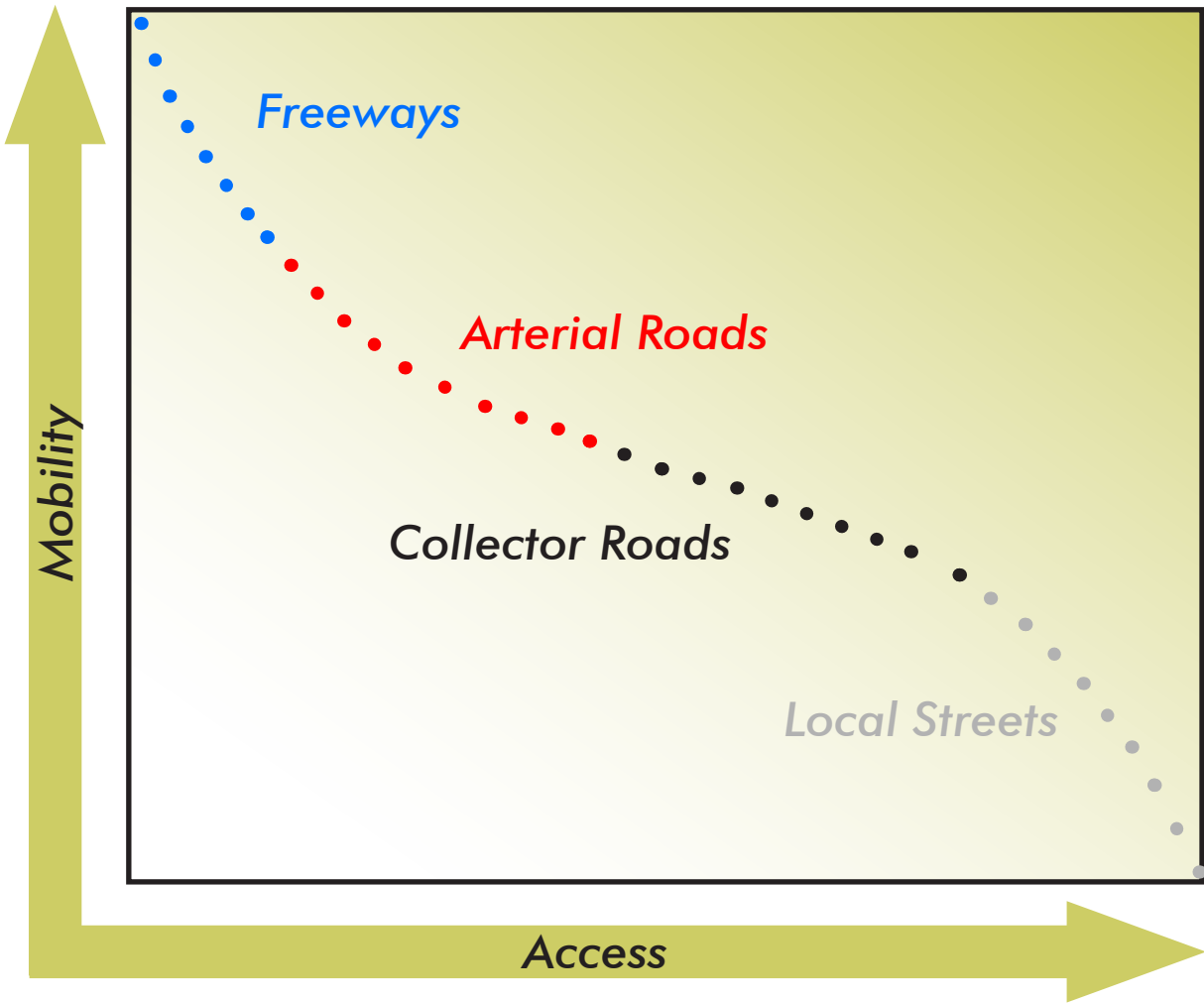


Figure 1-3. The Functional Classification System (Stover and Koepke 2002).

mobility (higher travel speed); local streets provide a large number of access points and have lower mobility (reduced travel speed). Due to higher speeds on freeways (typically more than 50 mph), these roads must be designed with gradual curves and provide acceleration and deceleration lanes for safely entering and exiting the freeway. Speeds on local streets are in the range of 15–25 mph and, therefore, do not have the same design constraints. Arterial streets reside in the upper middle of the functional classification system. Arterial roads are typically designed for 40–45 mph speeds and provide limited access to both higher and lower classification roadways. For safety, arterial roadways ideally do not provide direct access to residential driveways or businesses (this may be a distinction between major and minor arterial roads in a given network).

The spacing of arterial and collector streets (major city streets) depends on the adjacent type and density of development and the layout of an urban street network. Each urbanized area has a distinct population density, population distribution, and unique geographical constraints. Therefore, it is necessary for transportation planners to determine how travel can be channelized within the network in a logical and efficient manner on a city-wide or regional scale (depending on the planning level of the transportation agency involved). In general, as development density increases, the need for additional arterial and collector streets increases.

As summarized by FHWA (1989):

The transportation system is a major structural element of the community. It serves as a circulatory system providing travel mobility, but it serves equally as a skeletal system providing a relatively permanent framework which delineates and influences the pattern of land development, and within which residential neighborhoods and other land uses may develop and

function. The preservation of neighborhoods, the stabilization of desirable land uses, and the encouragement of orderly development are among the basic considerations in the development of functional street systems.

1.2.2 Lack of Arterial Roadways in Southwest Provo

As discussed in the previous section, arterial roadway systems should be integrated, providing system continuity and mobility to urban activity centers such as airports and business districts (FHWA 1989). However, this type of system is not present in the Project Area, which is located between the urban center of eastern Provo City and the airport on the west side of Provo City. As a result, transportation systems in the Project Area do not provide adequate continuity for area-wide movement, as illustrated below.

The layout of existing and planned streets in the Provo area is illustrated in Figure 1-4. In Utah Valley, the I-15 freeway provides fast north-south mobility (speed limits 55–65 mph) between municipalities with limited access to east-west arterial streets (such as Center Street and 1860 South Street in Provo). These arterial roads, in turn, provide access to collector streets, which in turn provide access to local streets. Local streets provide the most access points for drivers' final destinations: residential driveways and commercial parking lots.

The existing Provo City network of roads does not meet the basic standards for servicing residential, commercial and industrial development within the Project Area. The existing system is dominated by residential streets and a patchy network of collector roads that fail to connect regionally significant traffic generators such as the airport and the business district of south Provo.

Numerous studies document that spacing between arterial roadways in urban areas should be between

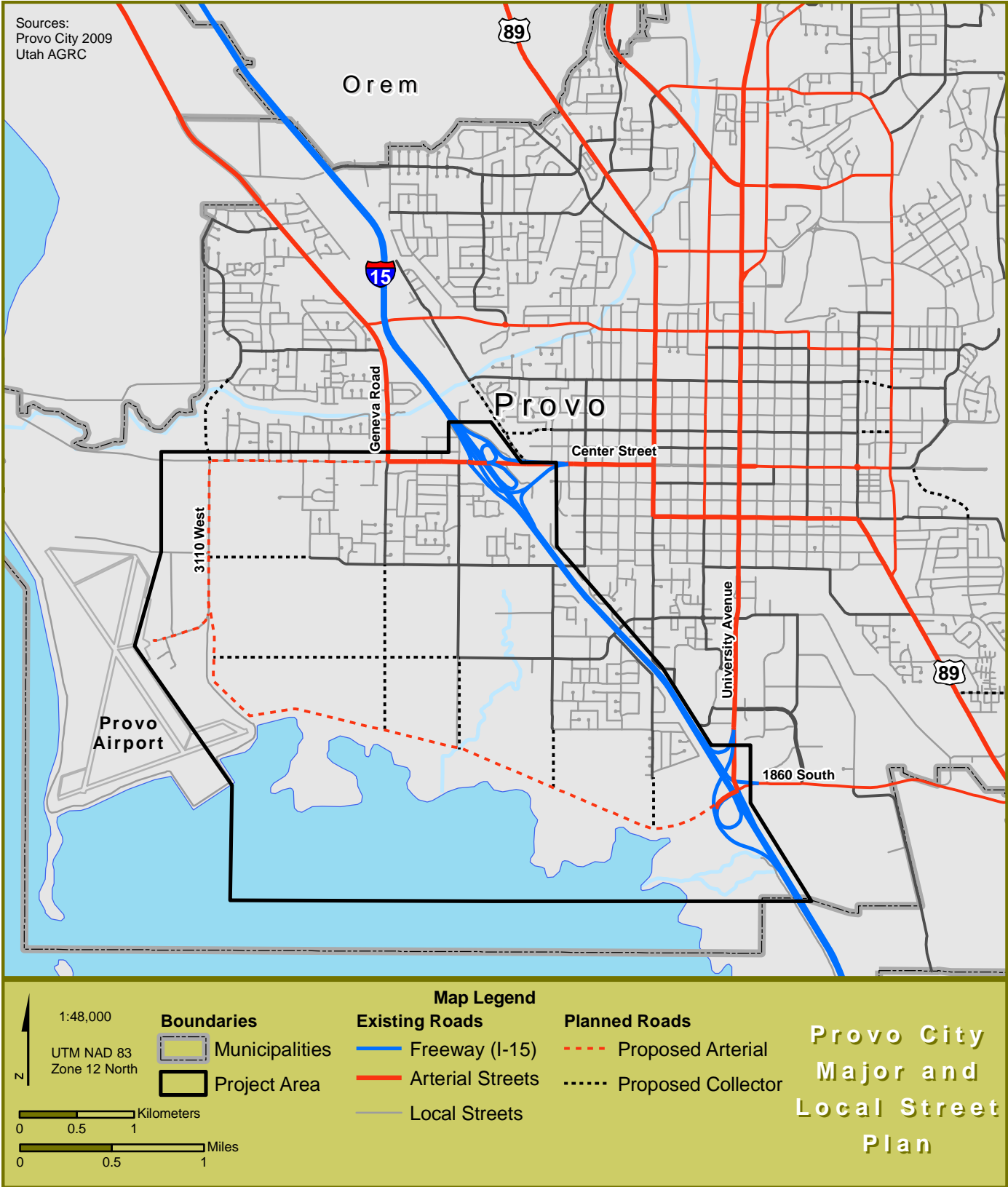


Figure 1-4. Provo City General Plan, major and local street plan (Provo City 2009).

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1 mile and 0.25 mile depending on capacity, accessibility, land use planning, and traffic volumes (FHWA 1989, Levinson, 2003, ITE 1969, ITE 1997, Marks 1974, TRB 1996). However, only a small portion of Center Street is built to arterial standards on the entire west side of Provo, and no arterials exist south or west of Geneva Road. Specifically, all residents south of 1160 South Street are more than 1 mile from the nearest arterial. In addition, the airport itself is currently accessed only by residential streets and is nearly 2 miles from the nearest arterial road.

The Provo City Transportation Master Plan (Provo City 2000b) notes that spacing of arterial and collector streets is dependent upon the type and density of development. Higher density development, such as that found in the downtown area, results in higher density of traffic volume and closer spacing of arterial and collector streets. In that area the need for arterial roadway spacing is less than 1 mile apart. In less densely developed areas, an arterial roadway spacing of about 1 mile is appropriate. This general rule is supported by application of FHWA (1989) guidelines. The theoretical arterial spacing cited by FHWA is based upon travel intensity in terms of vehicle miles traveled (VMT) per square mile. Figure 1-5 shows the arterial spacing to serve travel demand of different intensities.

Future travel demand for southwest Provo was estimated using the Wasatch Front Regional Council (WFRC)/MAG travel demand model. Table 1-1 presents the future travel demand for the

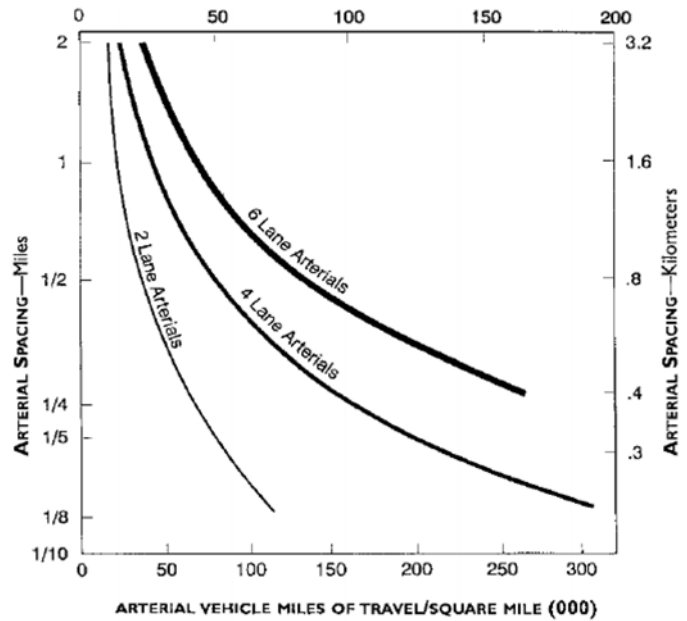


Figure 1-5. Arterial spacing guidelines (FHWA 1989).

area of Provo south of Center Street and west of I-15.

Table 1-2 provides the theoretical arterial spacing to accommodate future travel demand in southwest Provo. Assuming that the arterial system carries between 40 and 60 percent of all travel, four-lane arterials would be spaced approximately every one mile.

Based on this analysis, southwest Provo does not currently meet the arterial spacing standards outlined by FHWA, the Institute of Transportation Engineers, the Transportation Research Board, and others. Failure to meet these standards in southwest Provo has resulted in compromised mobility, lack of access control, and a lack of transportation continuity.

Table 1-1. Future Travel Demand for southwest Provo.

YEAR 2030 TRAVEL/DEMAND INDICATORS	VALUES
VMT ^a to/from southwest Provo	452,000
Area (square miles)	5.0
VMT per square mile	90,000

^a Vehicle miles traveled.

Table 1-2. Theoretical arterial spacing.

PERCENT OF VMT ^a ON ARTERIAL SYSTEM	ARTERIAL VMT/ SQUARE MILE	APPROXIMATE ARTERIAL SPACING		
		2 Lane Arterial	4 Lane Arterial	6 Lane Arterial
20	18,000	2 miles	2+ miles	2+ miles
40	36,000	0.50 mile	1 mile	2+ miles
60	54,000	0.33 mile	0.75 mile	1.50 miles

^a Vehicle miles traveled.

In summary, the Project Area roadway system without the Proposed Project lacks the necessary road network to serve existing development and planned growth because it contains only a single east-west arterial street segment (a portion of Center Street) and insufficient connectivity for collector and local streets to higher classification roadways. The Provo City Transportation Master Plan (Provo City 2000b) identifies the Project Area as one of four areas of concern in the city where arterial and collector street spacing is inadequate. Figure 1-4 illustrates existing and planned roadways that transportation planners have determined are the minimum required improvements to accommodate planned growth. The next section of the chapter provides background information and data demonstrating this planned growth.

1.3 PLANNED DEVELOPMENT AND LAND USE CHANGES SUPPORTING THE PROJECT NEED

As described in the Provo City General Plan (Provo City 2009), the Project Area constitutes the majority of the undeveloped land within Provo City limits and will be a focal point of residential development through 2030. Recent and planned improvements to the Provo Airport are also creating demand for improved roadway transportation infrastructure in southwest Provo. Through its planning efforts, Provo City recognizes that major business and

retail areas east of I-15 lack connectivity to the developing residential and industrial/commercial areas west of I-15. Improving this connectivity is an essential component of Provo City's overall economic development strategy.

1.3.1 Residential Development

Past growth trends within both Utah County and Provo will continue to occur at a rapid pace for the foreseeable future. According to U.S. Census Bureau (USCB) estimates released on March 23, 2010, the Provo-Orem area is one of the fastest growing metropolitan areas in the country. The USCB estimates that the Provo-Orem area's percentage change in population growth from 2008 to 2009 (2.9 percent) ranks it sixth in the country, and the area's cumulative percentage change in population growth from 2000 to 2009 (47.4 percent) ranks it third in the country among metropolitan areas (USCB 2010a).

According to MAG, the population of Utah County is expected to increase by 83 percent during 2007–2030, while daily trips within the county are expected to increase by 180 percent (MAG 2007). Historic population growth in Utah County has been concentrated in areas east of I-15 and west of the Wasatch Mountains. However, over the past 15 years municipalities along I-15 have begun to see rapid growth in areas west of the freeway.

The Project Area in southwest Provo contains a significant proportion of the undeveloped lands within Provo City limits. As shown by the average

Table 1-3. Population growth projections and average annual rates of change (AARC), 2005–2030.

POPULATION	2005	2030	AVERAGE ANNUAL RATES OF CHANGE (AARC) 2005–2030
Utah County	456,073	907,210	2.79
Provo City	114,224	136,588	0.72
Project Area ^a	16,712	27,809	2.06

Sources: GOPB 2009, InterPlan 2008.

^a Contains data derived from Traffic Analysis Zones (TAZ) which expand outside Project Area identified in Figure 1-1.

Table 1-4. Summary of anticipated Project Area growth.

YEAR	POPULATION	HOUSEHOLDS	EMPLOYMENT
2005	16,712	5,285	14,890
2030	27,809	8,179	33,556

Sources: MAG/WFRC 2007, InterPlan 2008.

annual rates of change (AARC) shown in Table 1-3, while Provo’s rate of population growth from 2005–2030 (AARC = 0.72) is expected to be lower than the county-wide rate of growth (AARC = 2.79), the Project Area will absorb a large proportion of Provo’s growth (AARC = 2.06). As such, the Project Area population is expected to be one of the “hot spots” in the county with growth rates higher than in Provo or Utah County.

At this rate of growth, Provo City anticipates that the Project Area population will experience a 66 percent increase from the 2005 estimated population of 16,712 to more than 27,809 by 2030. As illustrated in Table 1-4, this will also increase the number of Project Area households from 5,285 in 2005 to more than 8,179 in 2030. In addition to growth in population and households, employment in the Project Area is planned and expected to more than double. As shown in Table 1-4, employment is forecasted to grow from an estimated 14,890 jobs in 2005 to 33,556 jobs in 2030. As a result, there will be an increased demand for transportation infrastructure.

A large percentage of Provo’s current open space resources, in the form of private agricultural land, are located within the Project Area (Figure 1-6). In

fact, lands within the Project Area constitute the majority of the undeveloped land within Provo. Residential development in the Project Area has been ongoing, with building permits for single-family dwellings totaling 239 between 2005 and 2009 (B. Wilde 2009, pers. comm.). Development trends imply the conversion of all or most of these existing agricultural parcels to residential and other uses by 2030. Additionally, it is clear that Provo City’s Department of Community Development views agricultural tracts of land on the southwest side of Provo as holding zones that will eventually develop into more intense land uses (residential and commercial). The Provo City General Plan states (Provo City 2009):

It is the intention of the Planning Commission and Municipal Council to encourage private property owners interested in the development of land to cooperatively assemble multiple parcels to allow for large-scale, unified and cohesive development.

As the conversion of agricultural to developed land uses continues within the Project Area, the need for additional transportation infrastructure becomes essential. Section 1.3.2 describes a variety of

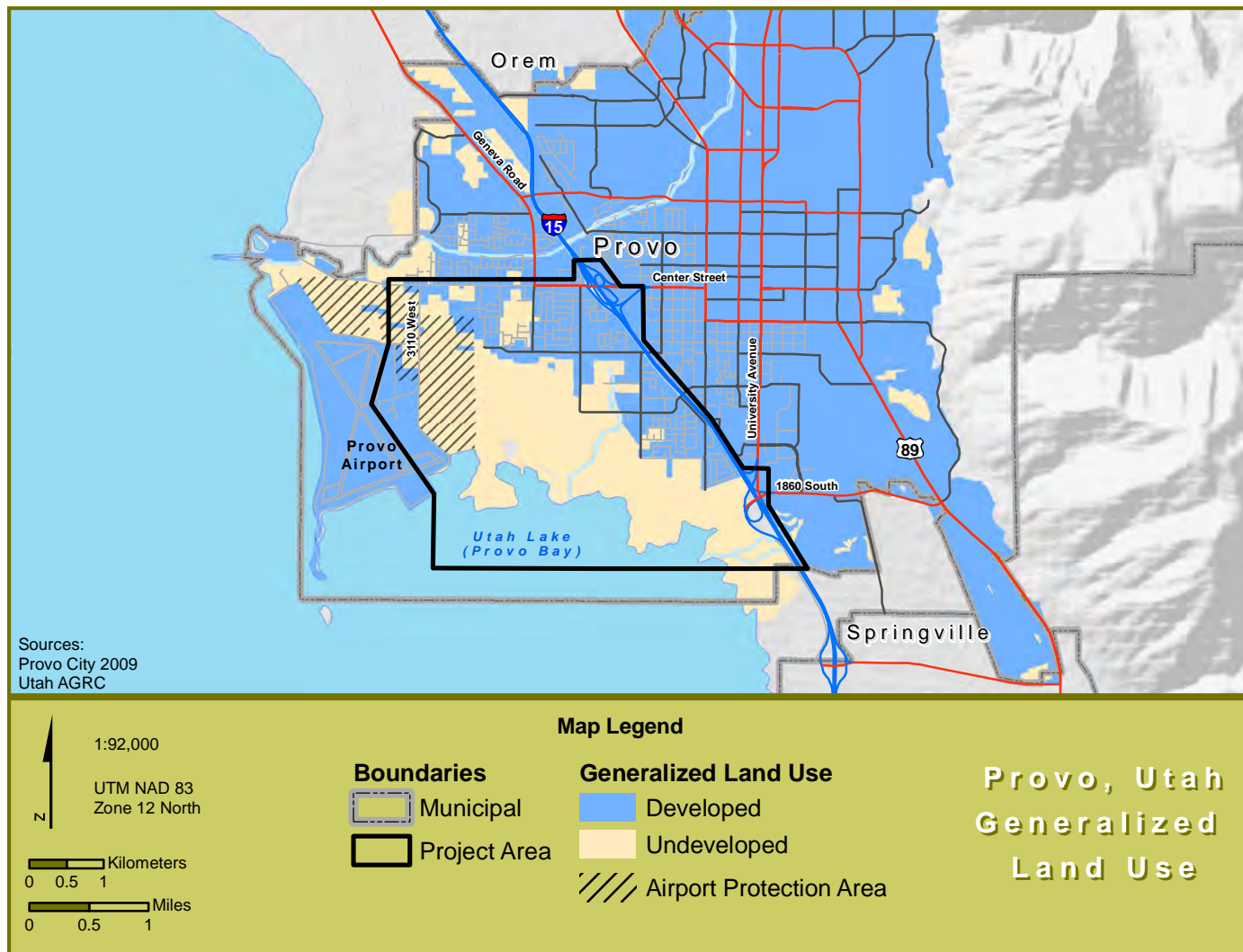


Figure 1-6. Developed and undeveloped land in Provo, Utah.

transportation planning performance measures that can be used to illustrate the potential deficiencies of the transportation system without the Proposed Project.

1.3.2 Airport-Related Growth

The Provo Airport is owned by the Provo City Corporation and is a general aviation airport. At present, the airport is primarily used by local corporate jets and chartered passenger flights and accommodates both airplane and helicopter pilot training programs from Utah Valley University. Designated as the emergency backup airport for

Salt Lake City International, the Provo Airport already has adequate runway length, lighting, and instrumentation for large, commercial passenger aircraft. The existing Provo Airport property is also large enough to accommodate construction of a planned public terminal and initiate regularly scheduled passenger service.

In anticipation of other airport-related commercial development, Provo City has zoned much of the land immediately north and east of the Provo Airport for “airport-related activities” (Figure 1-6). Provo City anticipates this zone to include future businesses (such as freight centers, maintenance

facilities, manufacturing, warehousing, and others) that are appropriately located close to the Provo Airport. A recently approved development of an aircraft maintenance business adjacent to the Provo Airport has resulted from these planning efforts. Provo City anticipates that other properties in the Provo Airport vicinity will include a variety of similar businesses. Although these changes are planned and expected, they will likely occur over time as development proposals are evaluated by Provo City.

The PMAMP (Provo City 2000a) provided the framework for these planned developments and evaluated the anticipated economic benefits that would result. These expanded activities would create a number of revenue sources including visitor expenditures in the area, travel-agency income from local departures, fees to the airport, and local purchases by airlines (e.g., fuel, supplies, and meals). Increased visitation would supplement other local business activity, the ski industry, conventions, and group travel or charters. The economic analysis, summarized in Table 1-5, concluded that the total annual revenue impact to the Provo Airport market area is estimated to be more than \$90 million. In addition, many of the high-tech commercial centers developing east of I-15 in the general East Bay area could improve

Table 1-5. Summary of total annual revenue impact from new passenger air service.

ECONOMIC MEASURE	VALUE (\$)
Visitor expenditures	31,000,000
Travel agent income	620,000
Fees to airport	1,800,000
Fuel purchases	2,800,000
Airline wages	600,000
Total	36,820,000
Output multiplier	2.45
Total annual revenue impact	\$90,209,000

Source: Provo City 2000a.

their competitive advantage if they have more convenient service to domestic air travel.

Recent and planned improvements to Provo Airport contribute to the need for additional roadway infrastructure in southwest Provo. The PMAMP (Provo City 2000a) specifically identifies an arterial roadway connection from Provo Airport to the Interchange as an improvement that is needed to accommodate airport growth and ease of access. The PMAMP recommended that funding be in place or construction of the Proposed Project begun prior to (1) passenger or cargo expansion at Provo Airport or (2) significant increased residential development is approved in the Project Area.

1.3.3 Provo Economic Development

From the broader economic development standpoint, the Proposed Project is needed to facilitate connectivity and provide direct access between west side development (airport and residential) and east side development (retail and high-tech industry). Therefore, the economic development need for the Proposed Project is best understood in the context of the city-wide economic development objectives that are identified in the Provo City General Plan (Provo City 2009). These objectives include creating new jobs, increasing the tax base, and keeping consumer dollars local.

Adequate transportation infrastructure is necessary to realize these objectives. The local roadway system helps meet these economic goals by making it easier for local residents to get to and from residential areas and centers of commercial activity and employment. Specifically, as the west side of Provo develops, adequate roadway infrastructure will encourage existing and new residents to spend money at established commercial and retail centers in south Provo. Airport expansion and airport-related development, previously discussed, also

support the overall economic development policy by bringing commercial/industrial development potential to the Provo Airport area. Providing for ease of east-west movement of residents, customers, employees, and commerce is an essential component of effective urban design and local economic development strategies as identified in the Provo City General Plan (Provo City 2009).

1.4 PURPOSE OF THE PROPOSED PROJECT

Based on the project needs described in Section 1.2 and the planned development and land use changes in Section 1.3, the lead agencies adopted the following statement as the purpose of the Proposed Project:

The purpose of the Proposed Project is to improve roadway system linkage in southwest Provo, between Provo Airport and the vicinity of the Interchange, in a manner that would:

- provide a connection to the existing arterial and freeway transportation network to support planned residential development and land use changes in southwest Provo;
- provide a more direct roadway link between Provo Airport and the vicinity of the Interchange to support recent and planned improvements at the Provo Airport and related commercial and industrial development in the vicinity of the airport; and
- provide a more direct roadway link between the residential areas west of I-15 and the commercial center of Provo east of I-15, including the Provo Towne Centre Mall, to support the continued economic viability of the commercial center of Provo.

Section 1.1.2 details the local and regional transportation planning efforts that are consistent with and have led to the purposes of the Proposed Project.

1.5 SECONDARY PROJECT NEEDS

Secondary transportation needs can reasonably be addressed in conjunction with the identified need for this Proposed Project. These secondary needs and objectives are not the primary reason for undertaking the Proposed Project and were not used as a basis for screening alternatives. They are included in this Purpose and Need chapter to inform decision makers about important community goals that the Proposed Project would help achieve.

1.5.1 Maintain Provo City's Livability Standards

As Project Area growth occurs, Provo City is concerned with maintaining the residential character of its existing neighborhoods. This character is disrupted by high-speed or high-traffic volume facilities. In planning for growth, Provo City has adopted standards that reflect the "livability" of neighborhoods (Provo City 2000b). These standards are known as Provo City's Livability Standards and reflect an accepted principle that high-traffic volumes disrupt neighborhood character. These standards were developed through a significant effort by a wide range of people including citizens groups, city planners and engineers, developers, and members of the Provo Planning Commission and Municipal Council. The development of the standards was primarily aimed at addressing noise, safety, and driveway access. Because the number of west side streets providing access to the east side of I-15 is limited to Center Street, 600 South Street, and 920 South Street, two collector streets are projected

to exceed the livability standards established by Provo City under the No-Build Alternative.

The Proposed Project has the potential to reduce traffic on collector streets and make them more compatible with the residential nature for which they were planned. Table 1-6 summarizes the projected traffic volumes on street segments for which livability standards would be exceeded at the average and highest-traffic volumes in 2030 if the PWC is not built.

1.5.2 Improve Emergency Services and Evacuation Routes

Emergency service needs can be evaluated based on travel access to the area, particularly from various fire stations in Provo. Poor emergency service response times occur under the 2030 No-Build Alternative because of traffic congestion on Center Street and the low-speed nature of the various collector streets in the absence of the Proposed Project. Provo City strives to meet the standards set by the National Fire Protection Association (NFPA). Specifically, the NFPA 1710 Standard was developed to set minimum times for initial response vehicles from a professional fire department (NFPA 2004). The standard sets a response time of 4 minutes for an initial engine company response or 8 minutes for a full alarm assignment of vehicles. As noted in Table 1-7, by 2030 the No-Build Alternative (without the Proposed Project) response times from Fire Station 4 (closest to the Provo Airport) would approach or exceed the 4-minute, initial-response standard at every time of day. In addition, response from every other station in Provo would approach or exceed the 4- and 8-minute standards by 2030. The presence of the Provo Airport also presents important emergency service needs in the Project Area because Provo's fire department provides backup support for the airport's internal emergency services.

1.5.3 Facilitate Trail, Walkway, and Bike Path Connectivity

In addition to identifying needs related to automobile- and transit-oriented transportation improvements, the MAG 2030 RTP also identifies a need for the expansion of infrastructure for nonmotorized modes of travel. Nonmotorized options have been identified in the RTP as one of the keys to meeting the needs of the transportation system in Provo and Utah County. Specific to the Project Area, a 10-foot-wide asphalt trail from I-15 to Provo Airport called the "North Bay Trail" has been identified in the RTP as a recommended transportation improvement (MAG 2007).

The Provo City General Plan (Provo City 2009) includes proposed pedestrian paths, trails, and on-street bikeways. These plans include a proposed multi-use trail with equestrian pathways running between the Interchange and the Provo Airport. The Provo City General Plan illustrates other multi-use pathways in the Project Area along Center Street and running north/south along 3110 West Street and 2050 West Street (see the Pedestrians and Bicyclists section of Chapter 3 for details and illustrations).

A specific objective outlined in the parks and recreation portion of the Provo City General Plan indicates that "as land and easement acquisitions and road construction projects occur, bike paths and bikeways will continue to be implemented and improved in Provo." The plan states that "efforts should be maintained to continue construction of safer on-street bikeways and separated path and trail systems" (Provo City 2009).

Currently, the Project Area represents a gap in trail connectivity for existing and planned trails and bike paths. The planned North Bay Trail in the Project Area would provide the needed connections with the Provo Canyon/Jordan River Parkway Trail,

Table 1-6. Streets exceeding Provo City livability standards by 2030.

STREET	FROM	TO	FUNCTIONAL CLASS	LANES	LIVABILITY STANDARD (VEHICLES PER DAY)	EXISTING		NO-BUILD	
						Average Volume	Highest Volume	Average Volume	Highest Volume
1600 West Street	600 South Street	Center Street	Collector	2	7,000	2,800	2,800	9,100	12,300
500 West Street	920 South Street	300 South Center Street	Collector	3	14,300	10,700	14,900	14,500	19,600

Source: InterPlan 2009.

Table 1-7. The 2030 No-Build modeled travel time to Provo Airport (in minutes).

PERIOD	FIRE STATION 1	FIRE STATION 2	FIRE STATION 3	FIRE STATION 4	FIRE STATION 5	UTAH VALLEY REGIONAL MEDICAL CENTER
A.M. peak	7.67	9.74	9.04	3.93	8.83	8.06
Midday	7.80	10.10	9.35	4.01	8.92	8.34
P.M. peak	9.79	12.89	11.79	4.96	11.30	10.73
Evening	7.69	9.68	8.88	3.88	8.65	7.91

Source: InterPlan 2009.

Bonneville Shoreline Trail, planned Utah Lake Trail, and other local trails.

1.5.4 Accommodate Recreation Access

An objective of the Provo Parks and Recreation portion of the Provo City General Plan states that efforts will be made to “encourage and provide increased public access to natural amenities such as the Provo River [and] Utah Lake . . .” (Provo City 2009, Chapter 7, p. 10). Currently, large gaps in access occur and Provo City is only able to provide limited access to Utah Lake by means of the Provo Airport Trail. Access is provided at the Utah Lake State Park at the mouth of the Provo River and at a single access point managed by the Utah State Division of Wildlife Resources near the existing southern terminus of 500 West Street.

1.5.5 Support Public Transportation Service Routes

The need for improved public transportation service to areas within Provo and Utah County has been identified in both the Provo City General Plan and the RTP (MAG 2007). The Provo City General Plan notes the ongoing efforts of the city to explore public transportation options. These include efforts to develop and expand both residential and commercial Utah Transit Authority bus use,

promote rideshare programs, explore commuter rail and Bus Rapid-Transit options, and promote multimodal planning. However, only two blocks of the Project Area along Center Street are currently served by public transportation. To help in this regard, the Provo City General Plan specifically requests transportation projects to plan for and incorporate public transportation needs in Provo (Provo City 2009), as follows:

. . . development proposals processed by Provo City should consider the ongoing inter-modal planning efforts for this area, particularly with concern for maintaining options for future street connections in order to open the area to more productive residential, commercial and light industrial use and to meet community goals for a vibrant, walkable, transit-oriented community.

The RTP also notes the need to “improve access and mobility for all persons, regardless of their desire or ability to operate an automobile” (MAG 2007). Transit services have been identified in the RTP as a key approach to achieving this goal. East-west transit routes have specifically been identified in the General Plan as areas for improvement. Although specific bus routes in Provo have not been identified, logical east-west transit service routes could include a connection on an arterial street from a planned intermodal hub in downtown Provo to the growing residential area in southwest Provo.

1.6 SCREENING OF ALTERNATIVES FOR ABILITY TO ACCOMPLISH THE PROJECT PURPOSE

The project purpose statement has been utilized in Chapter 2 as part of screening of alternatives. The following three criteria were used to assess the ability of potential alternatives to accomplish the project purpose:

1. **Location of Termini:** Does the alternative serve southwest Provo and include a connection to the Provo Airport and a connection (directly or via existing routes) to the Interchange?
2. **Facility Type:** Does the alternative provide an east-west arterial street, consistent in functional characteristics of other arterial streets in Provo? (Does the alternative propose an arterial road, either a new road, added capacity to an existing road, or a combination of the two? Provo City functional characteristics include a five-lane controlled access roadway with either bike lanes or a 10-foot paved trail.)
3. **Design Requirements:** Does the alternative meet applicable design standards for an arterial street and does it accommodate projected traffic volumes at an acceptable Level of Service (LOS) for a facility of its type? (A minimum of LOS D for Average Daily Traffic is the commonly accepted minimum standard for project planning.)

If an alternative met all three of these criteria, it satisfied the Proposed Project's primary needs, and thus would meet the purpose and need for the Proposed Project. Alternatives that did not meet all of these criteria would not meet the purpose and need and, therefore, were eliminated

from consideration. Secondary needs (additional project objectives discussed in Section 1.5) were not considered in the screening process but have been considered in developing the design of the alternatives and in choosing the Preferred Alternative.

1.7 RELATED ACTIONS, DOCUMENTS, AND STUDIES

Development of this Environmental Impact Statement has been carried out in cooperation with other ongoing actions in the Provo vicinity. These include the following:

- MAG Utah Valley 2006 MPO Transportation Improvement Program (MAG 2006)
- MAG RTP 2007–2030 (MAG 2007)
- UDOT 2005–2009 Statewide Transportation Improvement Plan (UDOT 2005)
- Provo City General Plan (Provo City 2009)
- Utah County General Plan (Utah County 2007)
- I-15 Corridor EIS, Salt Lake and Utah Counties (FHWA 2008a)
- Mountain View Corridor EIS, Salt Lake and Utah Counties (FHWA 2008b)
- Geneva Road (SR114) EIS (FHWA 2009)
- Provo/Orem Rapid Transit Corridor Final Report 2005 (MAG 2005)
- Provo/Orem Bus Rapid Transit Environmental Assessment (UTA 2007)

1.8 CONCLUSION

As illustrated in this chapter, Provo City anticipates that the Project Area population will experience a 66 percent population increase by 2030.

Associated with this population growth, Project Area households will increase by 55 percent and employment will more than double. To accommodate the expected growth, regional and local transportation and land-use plans identify a need for an improved transportation system.

The existing Project Area road network was primarily designed for local traffic and is inadequate to provide connectivity between the commercial center of Provo east of I-15 and the developing and expanding commercial-industrial area associated with the Provo Airport. Southwest Provo does

not currently meet the arterial spacing standards outlined by FHWA, the Institute of Transportation Engineers, the Transportation Research Board, and others. Failure to meet these standards in southwest Provo has resulted in compromised mobility, lack of access control, and a lack of transportation continuity. The existing system is dominated by residential streets and a patchy network of collector roads that fail to connect regionally significant traffic generators such as the Provo Airport and the business district of south Provo. As a result, transportation systems in the Project Area do not provide adequate continuity for area-wide movement.

Based on the above facts, the Proposed Project is needed to meet the project purpose identified in Section 1.4.