

MENDING: OPPORTUNITIES FOR SPRINGVILLE, UTAH TO COUNTERACT
SUBURBAN SPRAWL

by

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B.S., Brigham Young University, 2007

A REPORT

submitted in partial fulfillment of the requirements for the degree

MASTER OF LANDSCAPE ARCHITECTURE

Department of Landscape Architecture
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Approved by:

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Abstract

A 2009 survey conducted by the Pew Research Center for Social & Demographic Trends found that people living in suburban areas are significantly more satisfied with their communities than are residents of cities, small towns, or rural areas. With almost 50 percent of Americans living in suburban areas, and not enough infill opportunities to accommodate future population growth, suburban development will likely continue to be a primary location for development (Berens 2010). As suburbia continues to develop there are two options: continue to use conventional suburban strategies or implement alternative suburban strategies. The city of Springville, Utah is currently experiencing suburban growth near a future transit station to the west of the downtown core. Since suburban sprawl has already begun in this area, the city has an opportunity to design for growth and become a positive example of suburban development in the region. What are the possibilities and impacts of using conventional suburban strategies versus alternative suburban methods?

A 60-acre tract of land in west Springville, Utah is planned and designed for development. The first master plan is designed to demonstrate Conventional Suburban Development. The second plan

is designed to demonstrate Alternative Suburban Development. A comparative analysis of the two master plans accompanies the designs to compare the two solutions. This method has been used by New Urbanists to illustrate the difference in their method of suburban development. This tract includes a future transit station, a major highway corridor, and nearby access to Interstate 15. Additionally, the tract is located approximately two miles from downtown Springville.

The focus of this study is to provide the background and evidence that there are design alternatives which can contribute to the mending of suburban sprawl. In this project, city officials, planners, developers, business owners, and housing consumers are provided with an objective comparative analysis of conventional versus alternative methods of suburban development in the Wasatch Front Region of Utah. The analysis of the two design proposals provides valuable insight into the feasibility or desirability of key design principles contained in each design proposal. The study provides compelling evidence that alternative methods of community design and suburban development are to be considered to help the region achieve its long range planning goals set forth in the Envision Utah initiative.

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Thesis

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Project

The project site is located along the Wasatch front in Utah, in Utah County, and in the city of Springville.

Methodology

Guiding principles for community design are summarized into six principles: Landscape, Housing, Mixture, Multimodality, Support, and Sustainability. These principles are used in the design and comparison of the conventional suburban development and the alternative suburban development. Goals from Envision Utah are used to evaluate the two developments.

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“...there’s a reason that Elm Street and Main Street resonate in our cultural memory...It’s because this pattern of human ecology produced places that worked wonderfully well, and which people deeply loved.” - James Howard Kunstler”

Introduction

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Dilemma

As sprawl has already begun in the city of Springville, Utah, there is an opportunity to design for growth and become a positive example of suburban development in the region. What are the possibilities and impacts of using conventional suburban strategies versus alternative suburban strategies?

*New Development in Springville,
Utah. author, 2009.*

Introduction

Growing up on the outskirts of development in Boise, Idaho, I had access to parks and nature while still having the convenience of stores and amenities in close proximity. Some of my fondest memories as a child include riding my bicycle with friends to the local grocery store to buy snacks and baseball cards. My parents were home builders, which meant that I experienced suburban growth first hand. Through adolescence, I saw the once wild and open land become large single-family neighborhoods further and further from the core of the city.

My family eventually moved further from the city into a new neighborhood. This area was surrounded by miles of farmland, with no services within a two-mile radius. The only roads to the area were the existing two-lane highways. These roads quickly filled up with traffic as the neighborhood grew and other developments sprung up around it. Now, the entire area that was once farmland is sporadic sprawl with limited services, traffic congestion, and without solution on the horizon. Effects similar to these are occurring all over the Western United States.

Suburban sprawl is a form of development that is facilitated by inexpensive land, fuel, policies, and single-use zoning which encourage people to move away from city centers. It is comprised of five components: housing subdivisions, shopping centers, office parks, civic institutions, and roadways (Duany 2000, 5-7). Figure 1.1 illustrates single-use zoning in the city of Eagle Mountain, Utah. This form of development produces similar results regardless of the context and is seen throughout the region.

Many developers have created isolated neighborhoods that are completely disconnected from the public realm. James Howard Kunstler discusses this in his book titled, "Home from Nowhere," explaining the "nowhereness" that has been created from multiple developments attempting to build new and exciting places that all look the same and contribute to "nowhereness." No matter where you go in suburban America, you are still no where and never somewhere. Continually, people search for exclusivity of the private versus public realm in suburbia, but quickly find that more development continues around them.

Most people associate new development with wide streets, large parking lots, and more traffic. Few are first concerned with the detriment to the environment, dependence on the automobile, and wasted resources. The book "Suburban Nation" discusses this phenomenon as suburban Nimbysm (Not In My Back Yard). People move to an isolated development with the reason that, "I like living here, but I don't want any others like me living here" (Duany 2000, 42). This form of development, as viewed by critics, will continue to have similar results—a suburban wasteland.

History

The American dream was envisioned to include a single-family home, two-car garage, and a school nearby. It did not see that a subdivision is not a community, a sum of subdivisions that make up the suburbs is not a community, and a sum of suburbs that compose a metropolitan region does not make up a community (McHarg 1992, 153). The reality of suburban living lies within the contrast to the dreams of suburban living. This is not a problem that was created overnight, and

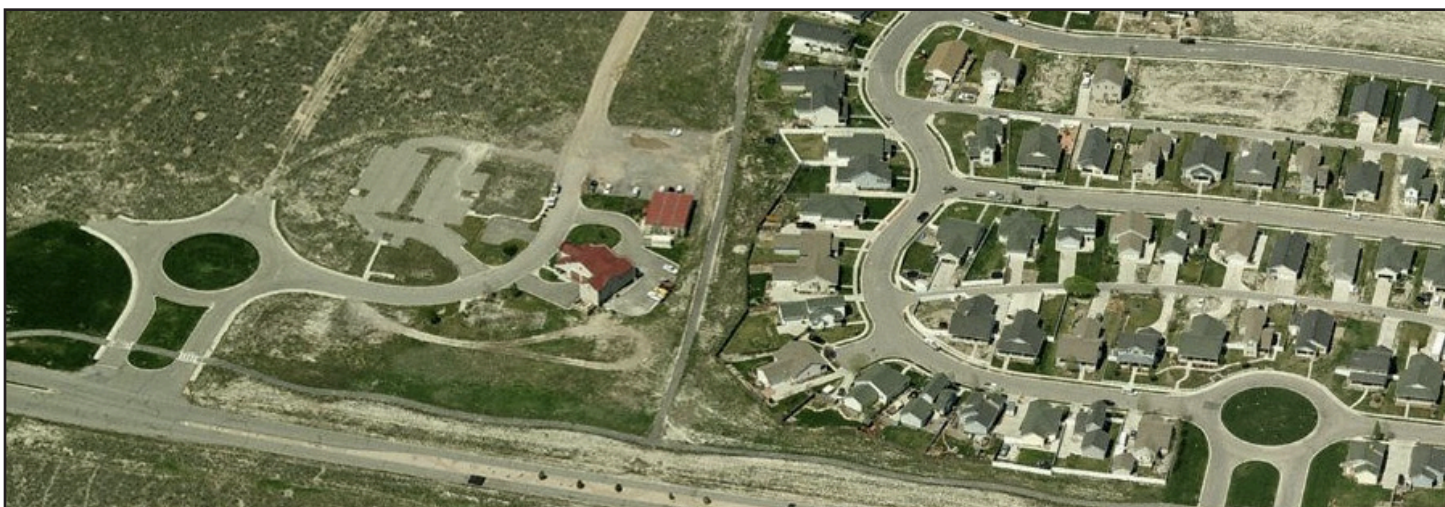


Figure 1.1 - Eagle Mountain, Utah, example of sprawl development. bing maps, 2010.

the solution will require a collaborative effort. Understanding how the problem was created is important to implementing possible corrective measures.

After the Second World War, policies and loan programs provided by the Federal Housing Administration and Veterans Administration loan offered mortgages for over eleven million new homes. Sprawl development patterns were also made easier with the creation of an interstate system that included 41,000 miles of new roadway and neglected mass transit systems. People enjoyed moving further from the city in less expensive homes, and commuting to places of employment. Places of shopping and employment soon followed people from the city center to the suburbs (Duany 2000, 8). This has continued in many regions, especially in the mountain northwest. This pattern will continue to consume natural resources and land.

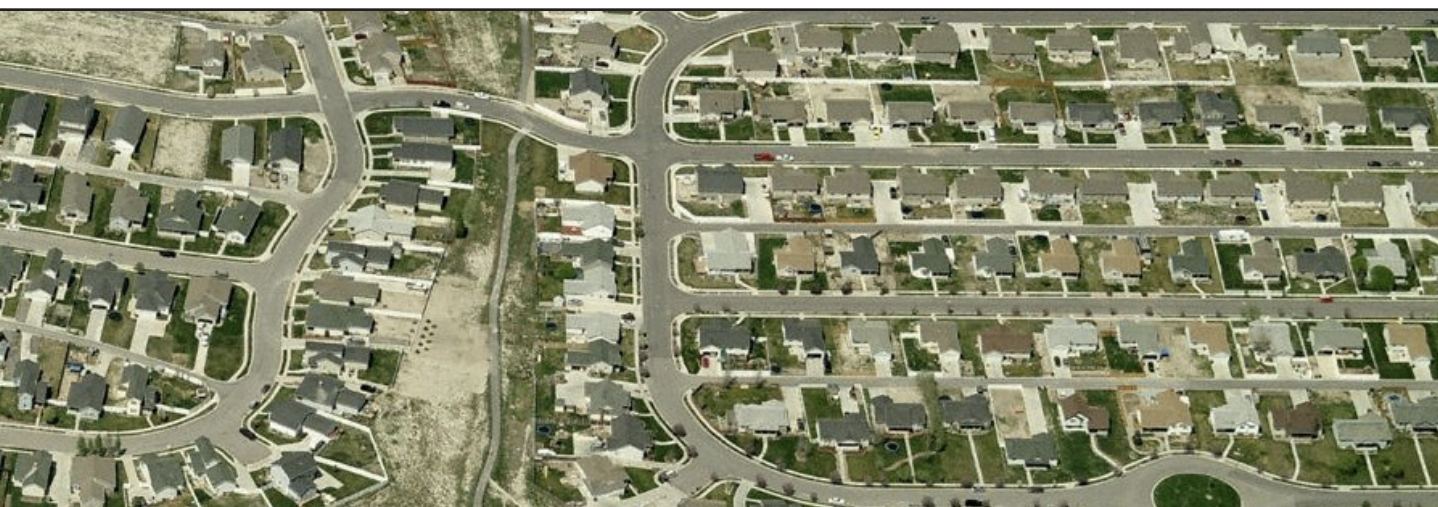
Effects of sprawl are more than the environmental impacts and aesthetics of the place. Municipal costs continue to rise as infrastructure and services are needed to fund low density development. One study conducted in 1998, found the cost to provide services and infrastructure for a low density development was \$69,000 per dwelling. This is in contrast to \$34,500 for a dwelling in a more compact development. Much of this cost is caused by the dependence on the automobile and the associated costs with infrastructure and maintenance (Dutton 2000, 20).

Social impacts of suburban development also contribute to effects of sprawl: isolated monocul-

tures, social class segregation, and automobile dependence. Lack of diversity in income levels separates children from interacting, while others enjoy the privacy and isolation created by large, separated residential lots.

Although effects of sprawl might be apparent to some designers, planners, and policy holders, the suburban lifestyle remains popular with the majority of Americans. A 2009 Pew Research Center Social & Demographic Trends survey found that people living in suburbs are significantly more satisfied with their communities than are residents of cities, small towns, or rural areas. From those surveyed, 42 percent of suburban residents gave their community high marks, compared with just 34 percent of city residents, 29 percent of rural residents, and 25 percent of small town residents (Berens 2010). Given that infill opportunities will not accommodate all of the population growth and that people still prefer to live there, development in suburbia will continue. Trends of suburban living, development costs, fuel costs, and the recent economic recession of 2009 have contributed to the great cause for a new form of suburban development.

This dilemma provides the chance to modify the way that suburbia is designed. Opportunities exist to correct past mistakes and provide a more sustainable form of growth for future generations.





Thesis

Two master plans are completed using guiding principles for two different forms of development. A comparative analysis of the two master plans accompanies the designs to compare the two solutions.

*Downtown Springville, Utah.
author, 2009.*

Thesis

The western United States has seen a dramatic impact from suburban sprawl over the past several decades. The Greater Wasatch Area has experienced rapid growth in the recent two decades. This growth has placed increased pressure on infrastructure, housing, schools, natural resources, and air quality. With a projected average growth rate of twice the national average, the region will grow by approximately 3 million residents by 2050. This estimate will more than double the current population of the region (Envision 2000, 1). The growth already underway has contributed to more sprawl development in recent years, stretching the city limits further from the center.

In the Wasatch Front Area, the majority of residents live in the valleys created by the Wasatch mountain range to the east and the Oquirrh mountain range to the west. The region's metropolitan center is located in Salt Lake City in Salt Lake County, approximately 50 miles north of Springville in Utah County. The region has completed a rail transportation plan which proposes to extend south through Springville, Utah as illustrated in figure 1.2.

The metropolitan center for Utah County is in the Provo/Orem area located approximately 10 miles north of Springville. With close proximity to larger metropolitan centers, Springville has become increasingly popular as a bedroom community and a location for sprawl. The city has evolved from a relative dense city center to a community experiencing notable sprawl. Similar to the rest of the region, Springville is losing farmland and natural resources to new development and stress is being placed on infrastructure. As the city expands with new growth in the west, there is an opportunity to counteract the sprawl that has already begun in the area. In order to change the current trend of development, the city must act now and provide alternatives for suburban sprawl. The city of Springville has the opportunity to provide a positive example of growth in the Wasatch region by implementing alternative suburban development strategies.

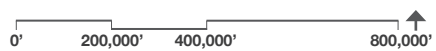
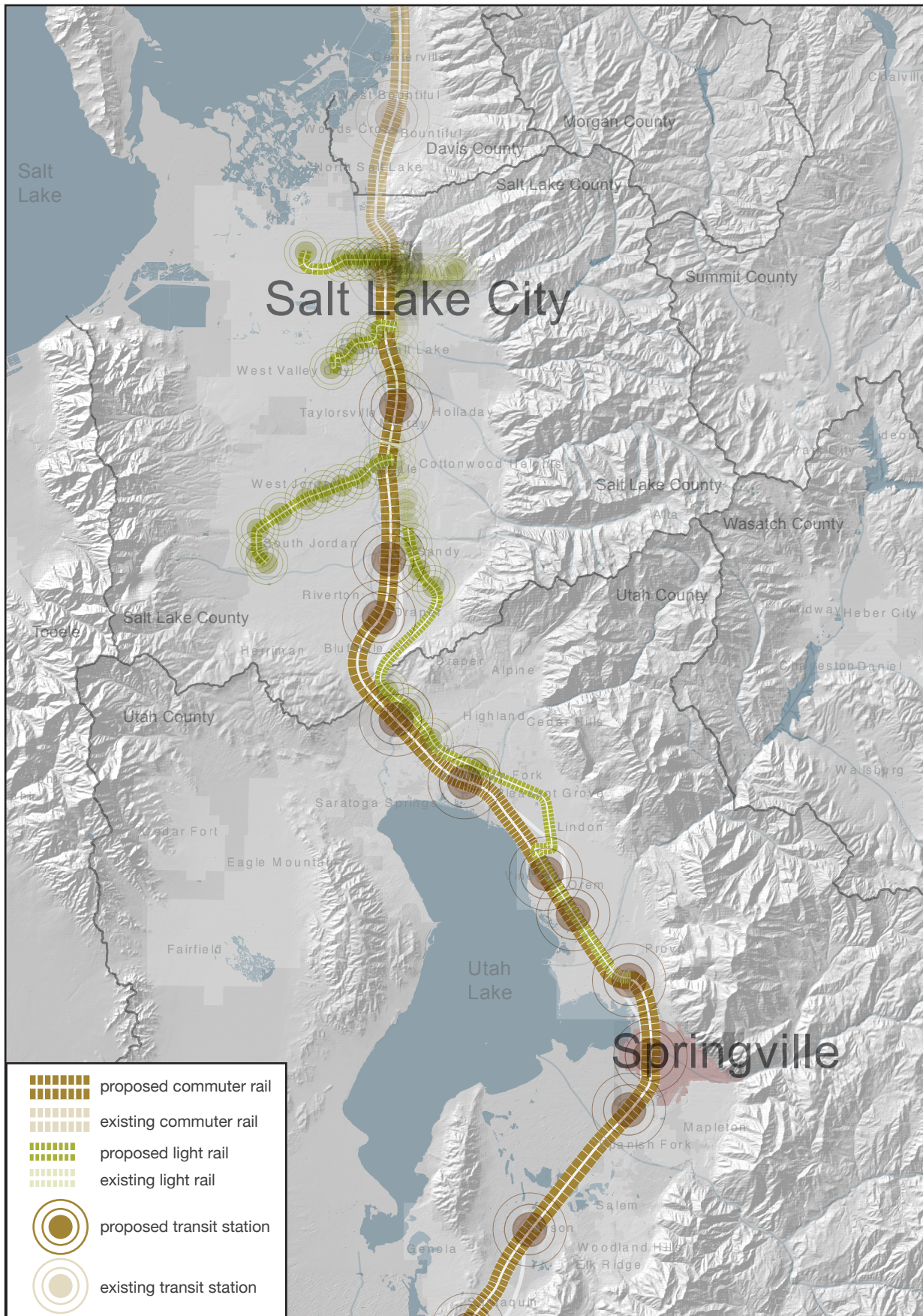


Figure 1.2 - Proposed Utah commuter and light rail transportation author, 2010



1892

TRIVANI

108 South

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ODD'S
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Project

The project site is located along the Wasatch front in Utah, in Utah County, and in the city of Springville.

*Downtown Springville, Utah.
author, 2009.*

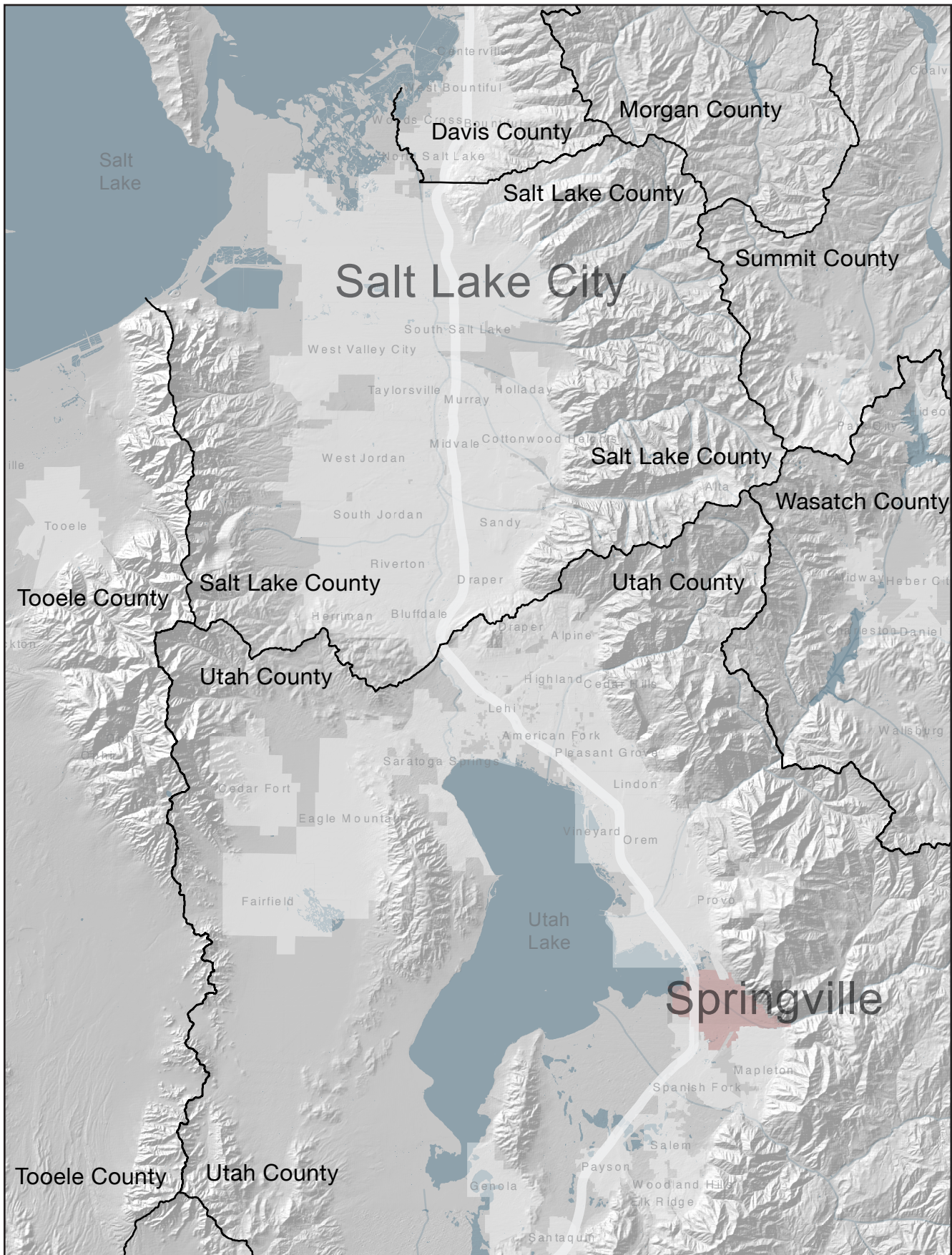


Figure 1.3 - Wasatch Front Region including counties, cities, and water ways. Interstate 15 is illustrated in white connecting the region. author, 2010.

Project location

The region is limited to growth within the boundaries of major mountain ranges as illustrated in figure 1.3. This has shaped how the region has grown making it unique. The site is approximately two miles west of downtown Springville. Development has begun in this area and the city has planned for the future growth of the city. Figure 1.4 illustrates the location of the site and the surrounding context including farmland and new development.

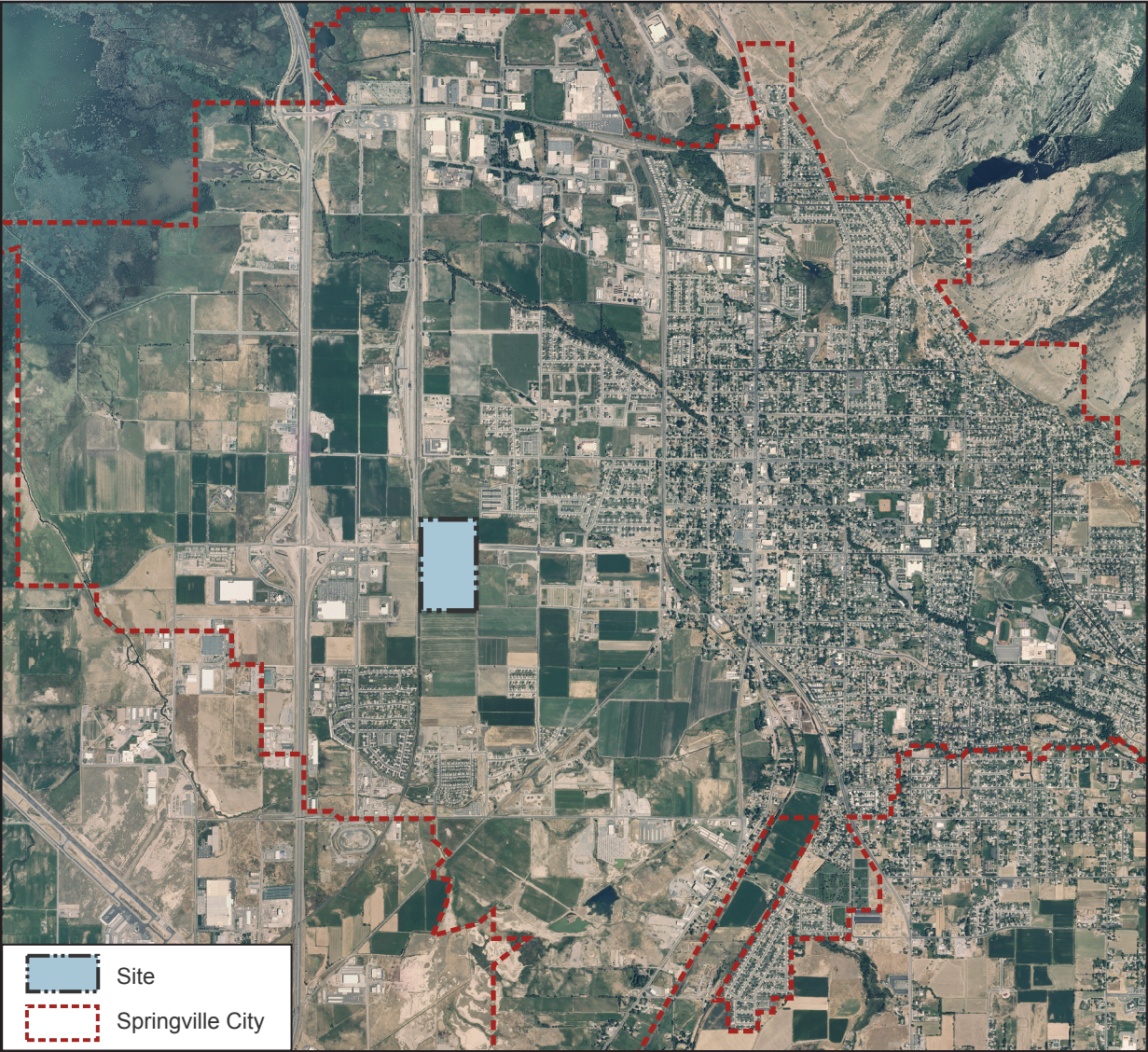


Figure 1.4 - Springville, Utah. Springville City GIS, 2010.

Critical site conditions

The Wasatch front region of Utah is home to the majority of the population in the state. For the most part, this population lives in the valleys. Natural boundaries such as mountains, water, and wetlands on all sides creates a narrow corridor of development. With above-average population growth in the future, the region has attempted to plan for this growth by enacting a policy referred to as Envision Utah. This plan, above other things, has created a strategy to provide denser development in hopes of preserving the natural resources that make the region unique.

Springville, Utah is located in Utah County, and boasts a population of almost 30,000 residents. The city is nestled between Utah Lake to the west and Hobbie Creek Canyon to the east. Access to the canyon is a major attraction for people who visit the city. Golf, hunting, hiking, biking, and other recreational activities are allowed in the canyon. Majestic views of mountains, streams, and lakes are other reasons that Springville is beginning to see an influx in its population.

The site is located adjacent to a rail line corridor that is proposed as a new commuter rail transit stop. Highway 77 (400 South) bisects the site and connects Interstate 15 to the historic downtown. Current development in the city of Springville has consumed land as illustrated in figure 1.5 and 1.6. This growth will likely continue until there is no land left within the city boundaries. The location of this site well-situated in a place that could contribute to the sprawl growth or become an example of alternative suburban development.

The city is known for its rich tradition in the arts, , and is thus nicknamed “the Art City”. The city is home to an art museum, famous artist, and many sculptures. The city is decorated throughout with various pieces of art, making it a unique place in the region.

The downtown area of Springville is home to the city hall and other civic buildings including a library. Small shops and restaurants are also located downtown giving it a small town feel.

Springville is located south of the metropolitan area of Provo and Orem. Two universities and a stable, robust economy have made the Provo and

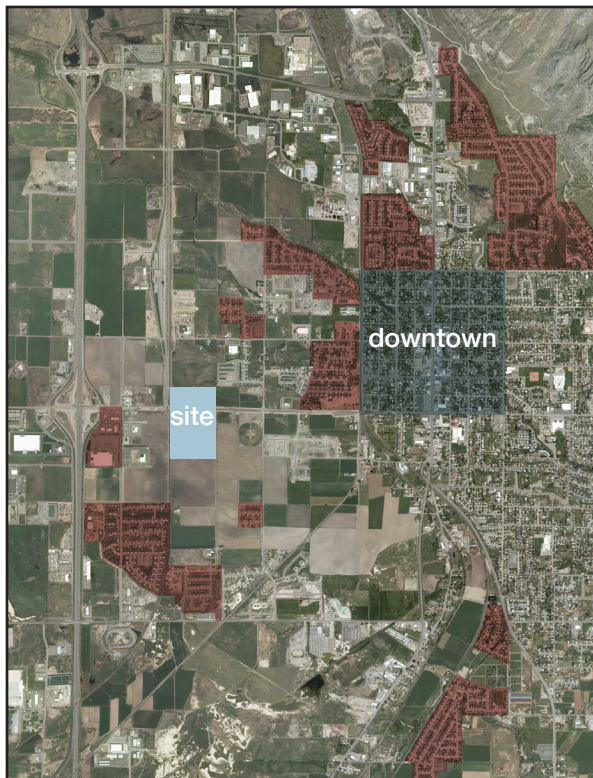


Figure 1.5 - 2006 growth: Blue areas illustrate the existing downtown core. Red areas illustrate new sprawl development as of 2006. Springville City GIS, 2010.

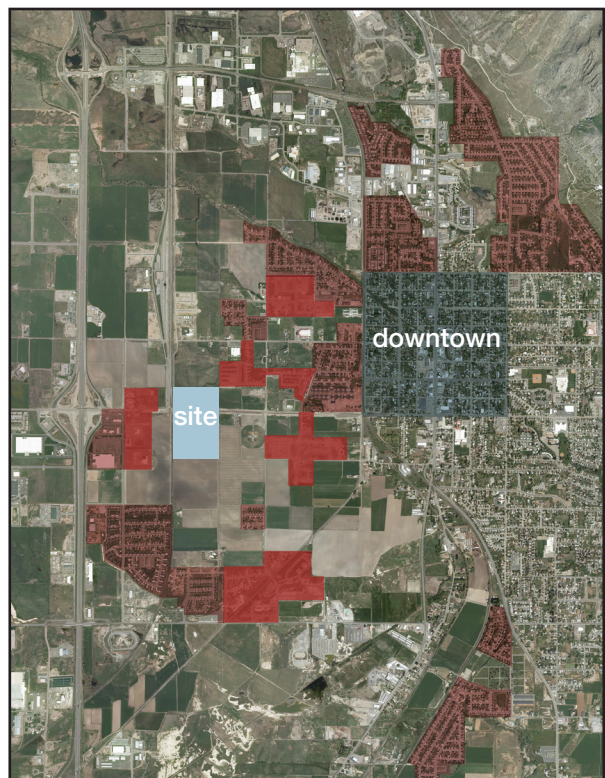


Figure 1.6 - 2009 growth: Darker red areas illustrate new sprawl development as of 2009. More sprawl is surrounding the project site. Springville City GIS, 2010.

Orem area the focus of growth in Utah County over the past several decades. With these areas becoming more urbanized, people have begun to move to the Springville, creating a bedroom community.

As illustrated in figure 1.7, Interstate 15 is a major transit corridor that connects the region. Located near the site is an on/off ramp for Interstate 15. Close proximity to the Interstate provides convenient access to the region. Interstate 15 runs north through most major urbanized areas, including Salt Lake City, south to Las Vegas, and eventually California.

With the growth of the region and the 2002 Winter Olympic Games hosted by Salt Lake City, the region has implemented a light rail and commuter rail system. The system is currently

in operation in Salt Lake County to the north and will eventually run through Utah County. This proposal will provide a rail transit stop on the site where the existing freight rail lines exist. This important connection to the region will require proper planning and design of the site to maximize this opportunity for residents and visitors of Springville. By making the site a destination rather than just a stop, the city could capitalize on future revenues for years to come.

An in-depth analysis of the region was performed to better understand the site and its' relationships with Springville. This was done to ensure that the program elements for the site do not disrupt or destroy the local economy of Main Street Springville.

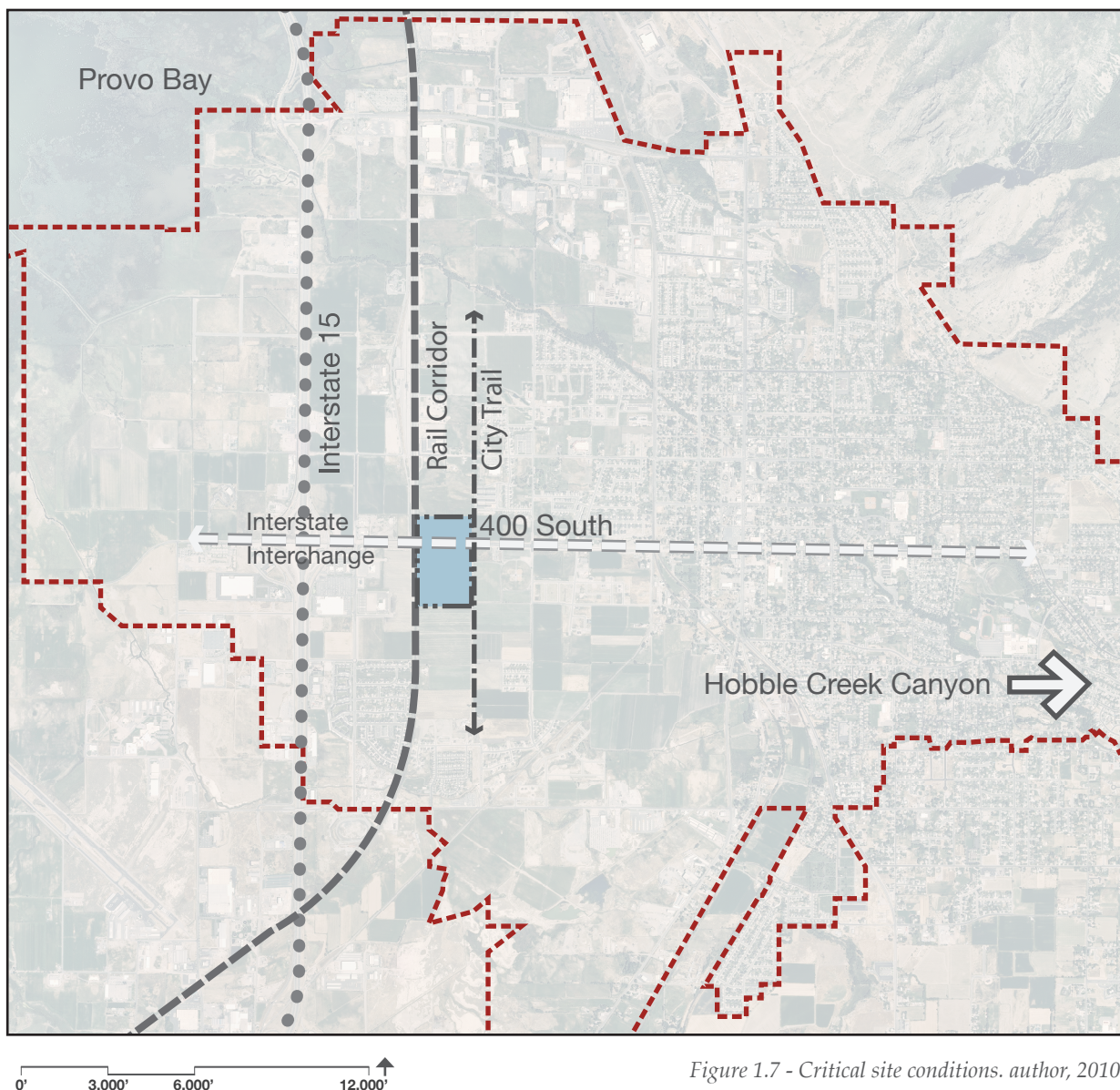


Figure 1.7 - Critical site conditions. author, 2010.

Key issues relevant to contemporary landscape architecture

Suburban Sprawl

Planning Process

Development Process

Planning and development trends have been influenced by multiple disciplines through the history of America. As suburban sprawl continues to consume land and natural resources, designers and policy makers have understood the need for corrective measures. Most of the new trends to address suburban sprawl have been led by architects and developers. Landscape architecture offers a breadth of knowledge that can assist in correcting the issues related to sprawl. Landscape architecture is able to provide an overall understanding of natural and man-made systems as well as the detail to make small spaces work. Designing suburban areas is to be a multi-disciplinary effort and landscape architecture should provide valuable insight in this process.

Suburban environments are beginning to change; people are tiring of traffic, congestion, and a suburban lifestyle that is not as glorious as described (McHarg, 1992, 153). Trends such as New Urbanism, Smart Growth, and Regional Growth Plans are becoming more popularized. It is important that landscape architecture is included in the disciplines making these critical decisions.

As developers seek new methods and strategies for developments in a constantly changing market, landscape architecture provides valuable design and research skills that will assist developers. By providing viable alternatives to traditional sprawl developments, landscape architecture is positioned to become a leading consultant in the movement for correcting sprawl.

The goal for developers and landscape architects should be to create a community that represents a sustainable use of land and resources, providing livable communities and not isolated ones.



Methodology

Guiding principles for community design are summarized into six principles: Landscape, Housing, Mixture, Multimodality, Support, and Sustainability. These principles are used in the design and comparison of the conventional suburban development and the alternative suburban development. Goals from Envision Utah are used to evaluate the two developments.

*400 South Springville, Utah.
author, 2009.*

Guiding Principles

The methodology used for the comparison of Conventional Suburban Development (CSD) and the Proposed Suburban Development (PSD) are derived from the text, "Visions for a New American Dream" by Anton C. Nelessen. Described in the text are ten principles for designing small communities. These ten principles are then simplified and categorized into six guiding principles, which will serve as the analysis of both design proposals. The guiding principles are Landscape, Housing, Mixture, Multimodality, Support, and Sustainability. Figure 1.8 illustrates the literature used to inform the guiding principles.

Landscape: Landscape refers to both hard and soft spaces including plazas, parks, and yards. Open space is one of the most valuable commodities for a community, not only for the visual and aesthetic qualities but for the recreation, ecological, and economic functions (Nelessen 1994, 167). Open space can serve the community with critical ecosystem functions and stormwater management practices. In addition, social advantages including public gathering spaces, recreation opportunities, and walking trails (Nelessen 1994, 152).

Both private and public open spaces are important in a community serving different functions. Private spaces serve as outdoor privacy for individuals while public spaces are open to formal and informal gathering for social interaction (Nelessen 1994, 168-169). Uniting a place through public open space can serve as the transition from the private to public realm.

Housing: Variation within a development creates a visually positive experience. Housing of various sizes, shapes, and forms contribute to a variety of housing options (Nelessen 1994, 224). This variation provides diversity in residents by having a variety of housing cost, style, and preference.

Housing options should have a variation in lot size, building size, street elements, and architectural design types (Nelessen 1994, 224). Housing should fit into the regional context defining the place in which it resides.

Mixture: A mix of land uses, housing, jobs, and incomes creates a more balanced community. It is recommended that a development should have mixed uses, mixed housing, and a proper job-to housing balance (Nelessen 1994, 234). A balance of mixture will contribute to the success of the area. It is desirable to provide a mixture of compatible uses within a development. With a variety of uses, more opportunities are given for the provision of daily services, goods, and jobs for the residents (Nelessen 1994, 234).

Multimodality: Methods to encourage multimodal transportation include bike paths, sidewalks, and public transit access (Nelessen 1994, 153). Streets are important public spaces and should provide for different uses; not only the automobile. Multiple transportation options are also directly related to mixture, providing uses and places for people to go effectively within a relatively close proximity.

Street networks are critical public spaces and should be connected to the surrounding area.

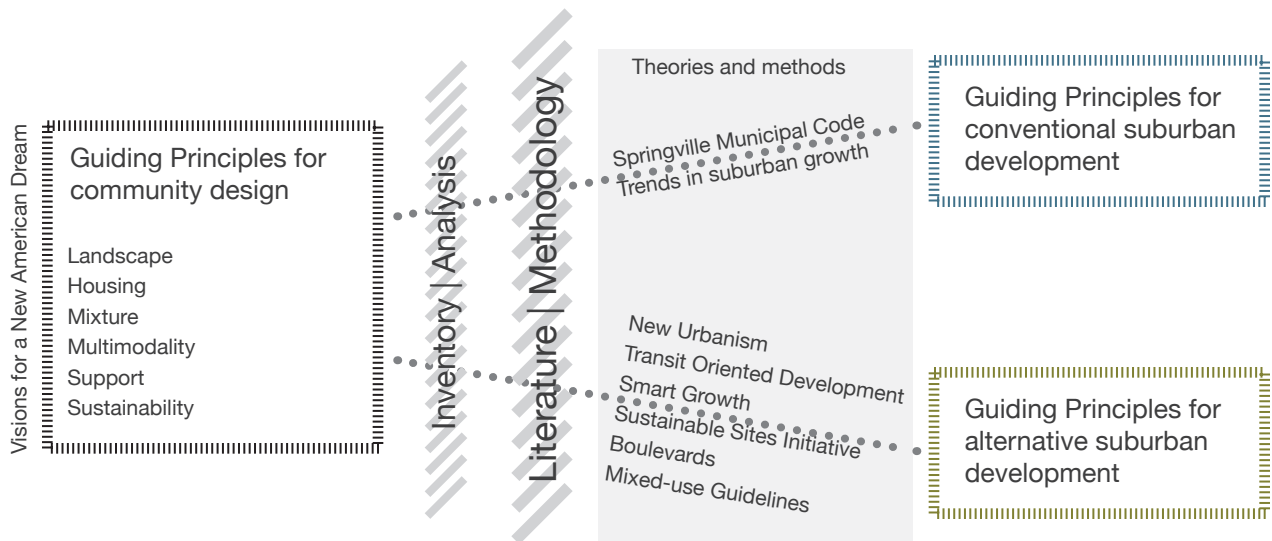


Figure 1.8 - Literature Diagram for guiding principles. author, 2010.

Considerations for creating connectivity are the layout of the street patterns, form of streets, and connections (Nelessen 1994, 191). Mixture of uses also is an important role to facilitating greater connectivity to the surrounding area. A balanced blend will provide places for people to go and connect with their surroundings.

Support: Consideration should be taken for the surrounding area in terms of existing uses, services, and amenities. A core should be located centrally in a development that can serve as the center and focal point for the area. Commercial space should be in proportion to the housing being provided. If a true core is going to be created, then there must be an appropriate balance between residents, commercial, and potential visitors (Nelessen 1994, 180).

Sustainability: Green alternatives and sustainable development have become increasingly important with developers and consumers. Incorporation of ecosystem services into new development provides critical functions for the environment. Some of the services provided include air and water cleaning, water supply and regulation, erosion and sediment control, and cultural and educational opportunities (Sustainable, 2009).

The application of guiding principles will be evaluated by the goals set forth by Envision Utah, the regional growth plan for the Utah. This evaluation between the conventional and alternative suburban development will determine the preferred development for the project site. This is done by determining which development meets or exceeds the goals established by Envision Utah (Envision 2000, 53). This analysis is found in the comparative analysis section. The goals for Envision Utah are:

- *Enhance air quality.*
- *Increase mobility and transportation choices.*
- *Preserve critical lands, including agricultural, sensitive, and strategic open lands and address the interaction between these lands and developed areas.*
- *Conserve and maintain availability of water resources.*
- *Provide housing opportunities for a range of family and income types; and maximize efficiency in public and infrastructure investments to promote the other goals.*

Literature Review

Critics of suburban sprawl have proposed alternatives to the conventional suburban development. Some alternatives include growth plans, New Urbanism, and Transit Oriented Develop-

ment. Although critics have scrutinized principles and feasibility of these alternatives, principles from them will be used in creating an alternative suburban development.

The Greater Wasatch Front Region of Utah created "Envision Utah," a regional growth plan. The study area consisted of 10 counties and 91 cities/towns. In 1995, the region was home to 1.6 million residents; almost 80% of the entire population of the state. The region was projected to grow to 2.7 million by 2020 and to five million by 2050. Through multiple community meetings and development scenarios, "Envision Utah" was created to guide the growth in the region (Envision 2000). This collaborative effort from multiple jurisdictions is one example of planning on a regional scale.

New Urbanism is an alternative that focuses on the importance of the community relationship to a larger regional and ecological context. This approach uses traditional neighborhood planning principles of neighborhood, block, and street (Lukez 2007, 15). New Urbanists believe that their methods stem from a traditional neighborhood development strategy.

Transit-Oriented Development (TOD) incorporated similar principles found in New Urbanism but is focused on transportation as the driving force of the region. Development surrounding transit stations is more popular as public transit becomes a viable alternative to the automobile (Dittmar 2004, 3). TODs can be described as simple, moderate, and high-density housing, with public uses, jobs, retail, and services all concentrated in a mixed-use development along a regional transportation system. Principles of TODs include organizing growth at a regional level, placing uses within walking distance of transit, pedestrian friendly streets, mixture of housing, preservation of sensitive habitats, public spaces, and infill along transit corridors (Calthorpe 1993, 41, 43). Transit should be either present or planned for the future. A new light and commuter rail system has been implemented in the Wasatch Front Region of Utah. This is intended to reinforce the regional quality growth pattern established by Envision Utah (Envision Utah 2002).

Alternatives are continually being discussed for suburban sprawl. This debate will continue, but for this study an alternative to conventional methods will be proposed to analyze the design feasibility.

“The world will not evolve past its current state of crisis by using the same thinking that created the situation.” - Albert Einstein

Design

Inventory | Analysis

Guiding Principles

Design

Design process

An overview of the entire design process for this project is illustrated in figure 2.1. This process has enabled two master plans to be created from using the same classification of design principles but applying two different approaches to achieve two different results.

Inventory and analysis were completed for the site to inform the program and design decisions. This analysis is included in the following sections. Guiding principles are then described in detail for each suburban development using literature from the research. Initial concepts were developed for both the Conventional Suburban Development (CSD) plan and the Alternative Suburban Development (ASD) plan. These initial concept sketches were then refined to complete a computer generated rendered master plan.

The developed concept plans along with the final master plans are located in the design section of this chapter. Key conclusions of each plan are also included to describe major concepts and highlight guiding principles achieved. The comparative analysis for both of the plans is provided in the following chapter.

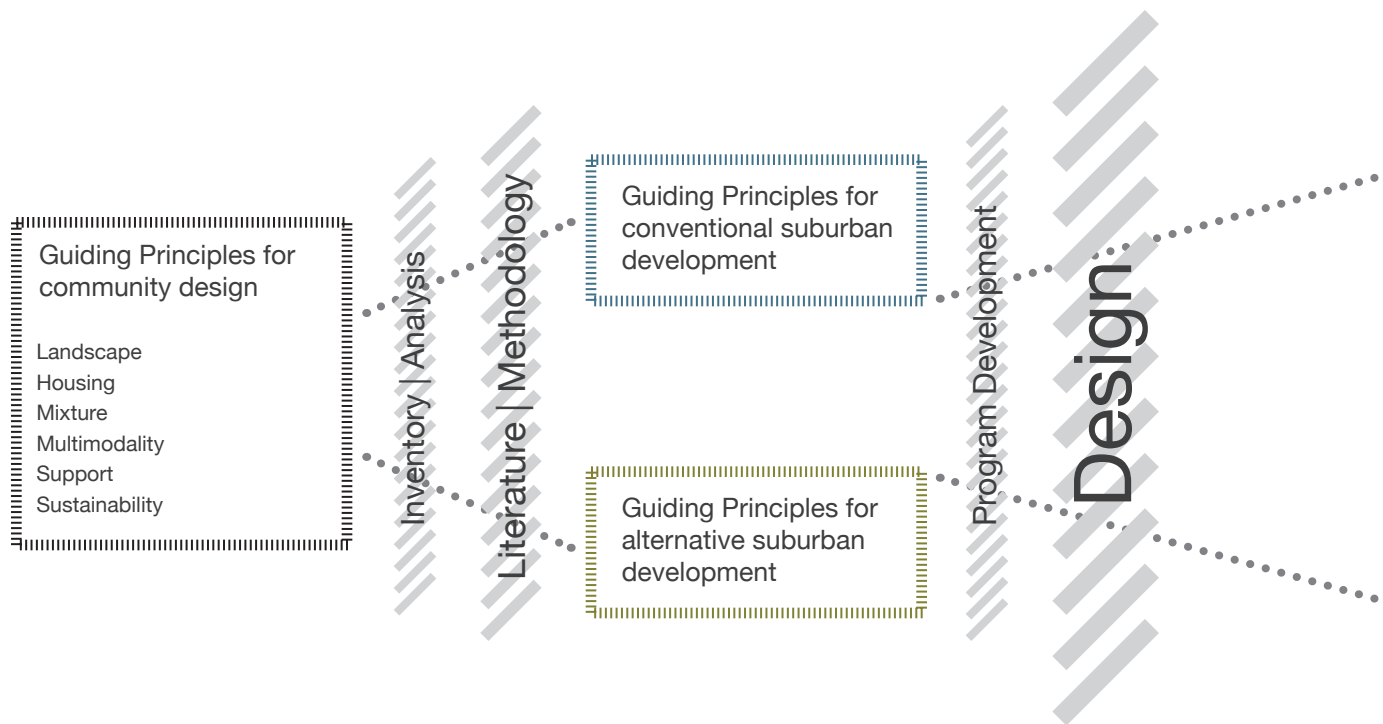
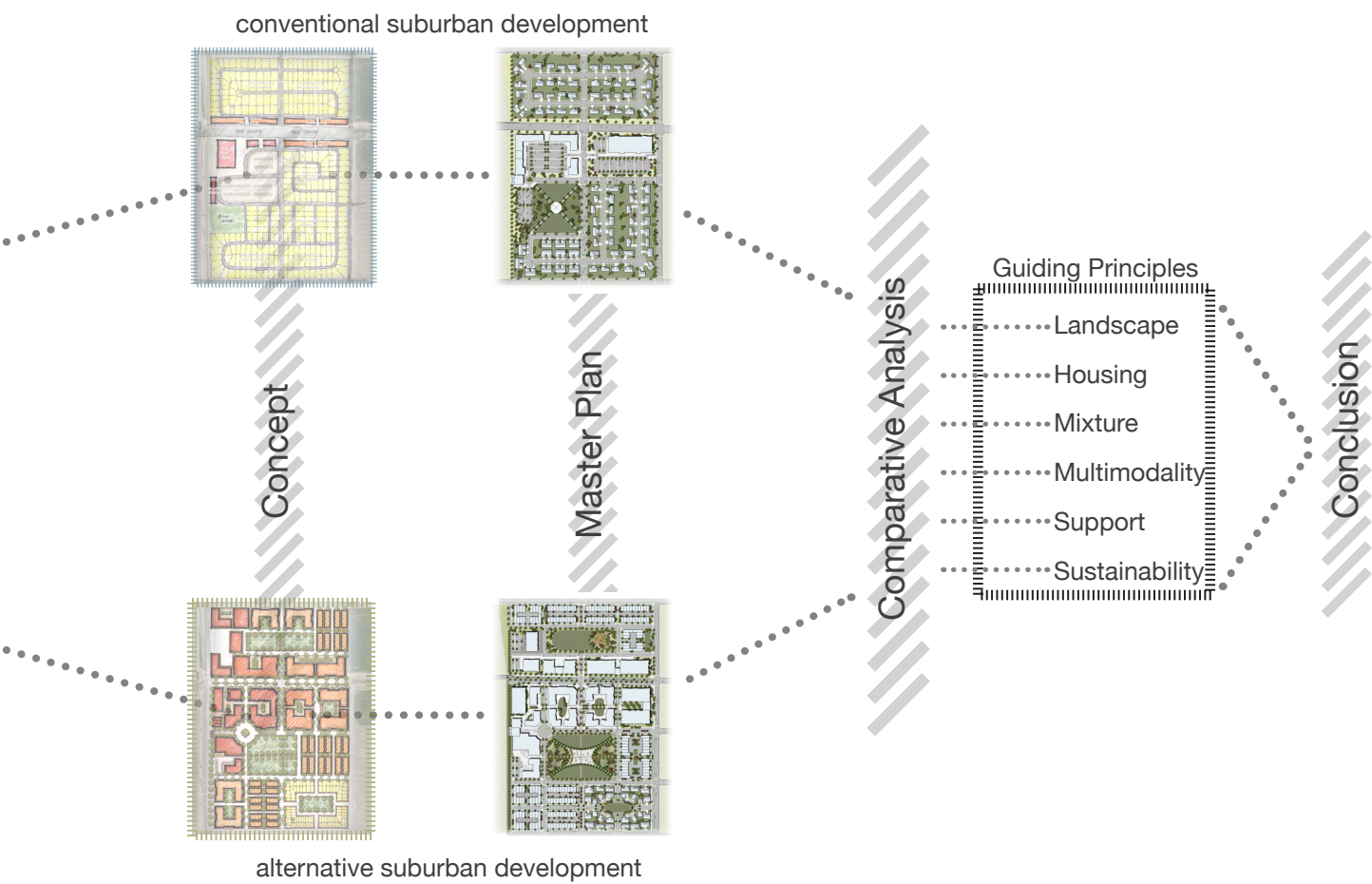
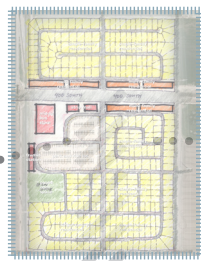


Figure 2.1 - Process diagram overview. author, 2010.



conventional suburban development



Concept

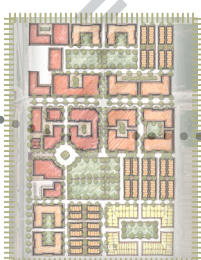
Master Plan

Comparative Analysis

Guiding Principles

- Landscape
- Housing
- Mixture
- Multimodality
- Support
- Sustainability

Conclusion



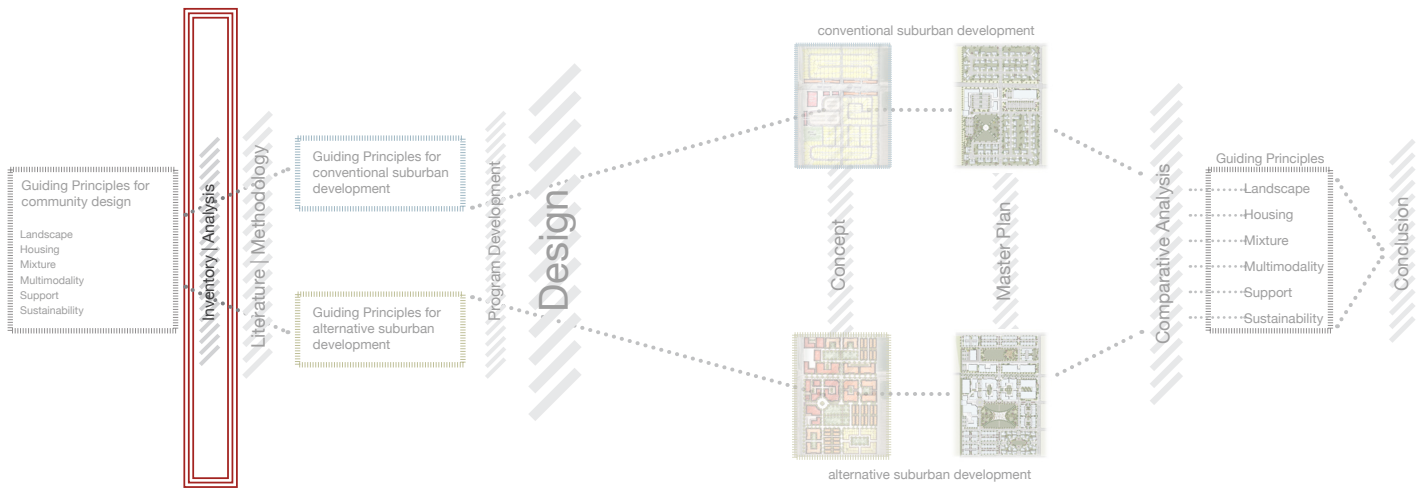
alternative suburban development

SOUTH



NORTH





Inventory | Analysis

To analyze inventoried data in a method that will produce usable information and conclusions, the process of crossmapping was used. Crossmapping includes overlaying data to discover possible relationships.

*Interstate 15 Springville, Utah.
author, 2009.*

Introduction

An inventory and analysis were conducted at a city scale to determine what factors should be considered and applied into the design phase. Specific conclusions are presented following each analysis map or diagram. General conclusions drawn from this process are illustrated in figure 2.2 and are as follows:

400 South is a major transportation element in the design that must be addressed properly so that the site will not be divided into two separate parts. Pedestrian safety must also be contemplated on the street because of the current design speed and street width.

Opportunities to connect the site to the existing city's park and trail system should be maximized. Trail connection to the north and south as well as trails to the east and west.

Since the site is currently farmland and will be developed, opportunities to provide sustainable alternatives should be considered.

The transit station is a new amenity for the city and should be celebrated as a public good. Consideration should be taken to provide transportation and visual access to the station.

The rail corridor created by the commuter rail provides a buffer on the west edge of the site. This should be screened from the development for visual aesthetics and safety.

Views of the mountains to the east are prominent all around the site and should be used as focal points from the transit station or entry into the site.

Since the site is farmland with little sense of place or history, it is important to consider the context of Springville and incorporate the history and cultural of the city into the site through design.

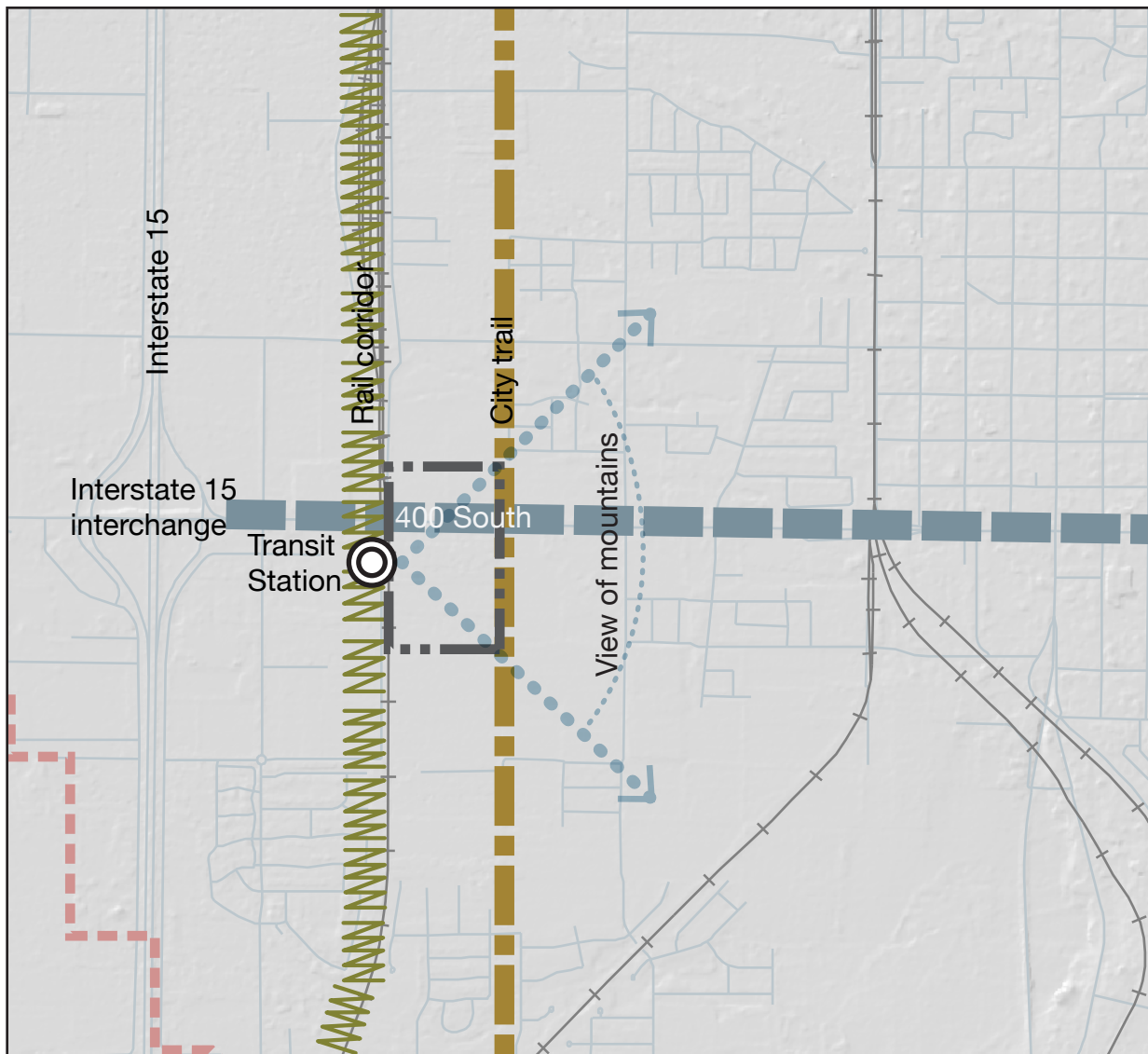


Figure 2.2 - Analysis conclusions. author, 2010.

Inventory

Individual factors were inventoried and illustrated on separate maps respectively. Conclusions were drawn for each map as they relate to the site. Individual factors are as follows:

Population Density Plan

General Development Plan

Accessibility Plan

Natural Plan

Open Space Plan

Cultural Plan

(Individual inventory maps are located in the appendix.)

Analysis

To analyze inventoried data in a method that produce usable information and conclusions, the process of crossmapping was utilized. The process of layering inventoried data to analyze a site has been made a common practice in design as discussed in Ian McHarg's book "Design with Nature." The process of crossmapping illustrates relationships between two or more systems, attributes, or phenomena. It is an effective method to understand problems, challenges, and opportunities that confront a site. Crossmaps can also illustrate the underlying framework and relationships found within the site. (Lukez 2007, 75). The selection of maps used was accomplished by analyzing relationships and potential outcomes, and these initial findings were then

tested to determine usable data. Crossmaps created are as follows:

Mix of housing

Accessibility of uses

Connectivity to the region

Connectivity to open space

Cultural opportunities

Sense of Community

Connectivity to Surroundings

Recreation connections

Crossmaps with conclusions informed the proposed design solutions and are found on the following pages.

Other Factors

Other factors that were inventoried and analyzed were considered to provide a contextual understanding of the city and the region. These factors include:

Block structure

Building styles

These factors are located following the crossmaps in this section.

Mix of housing

inventory maps included

population + land use

Conclusions

This map illustrates the density that surrounds the downtown area. The mountains to the east limited growth of the city. West of the city is low density where commercial and agriculture areas currently exist. The city has planned a mixed-use area relocated where the project site exists. As the city expands to the west, it is important to direct the density to this mixed-use area. Low density farmland still exist at the edge of the city. If growth can be controlled to strategic areas, the city can maximize the opportunity of expanding without wasting land and resources.

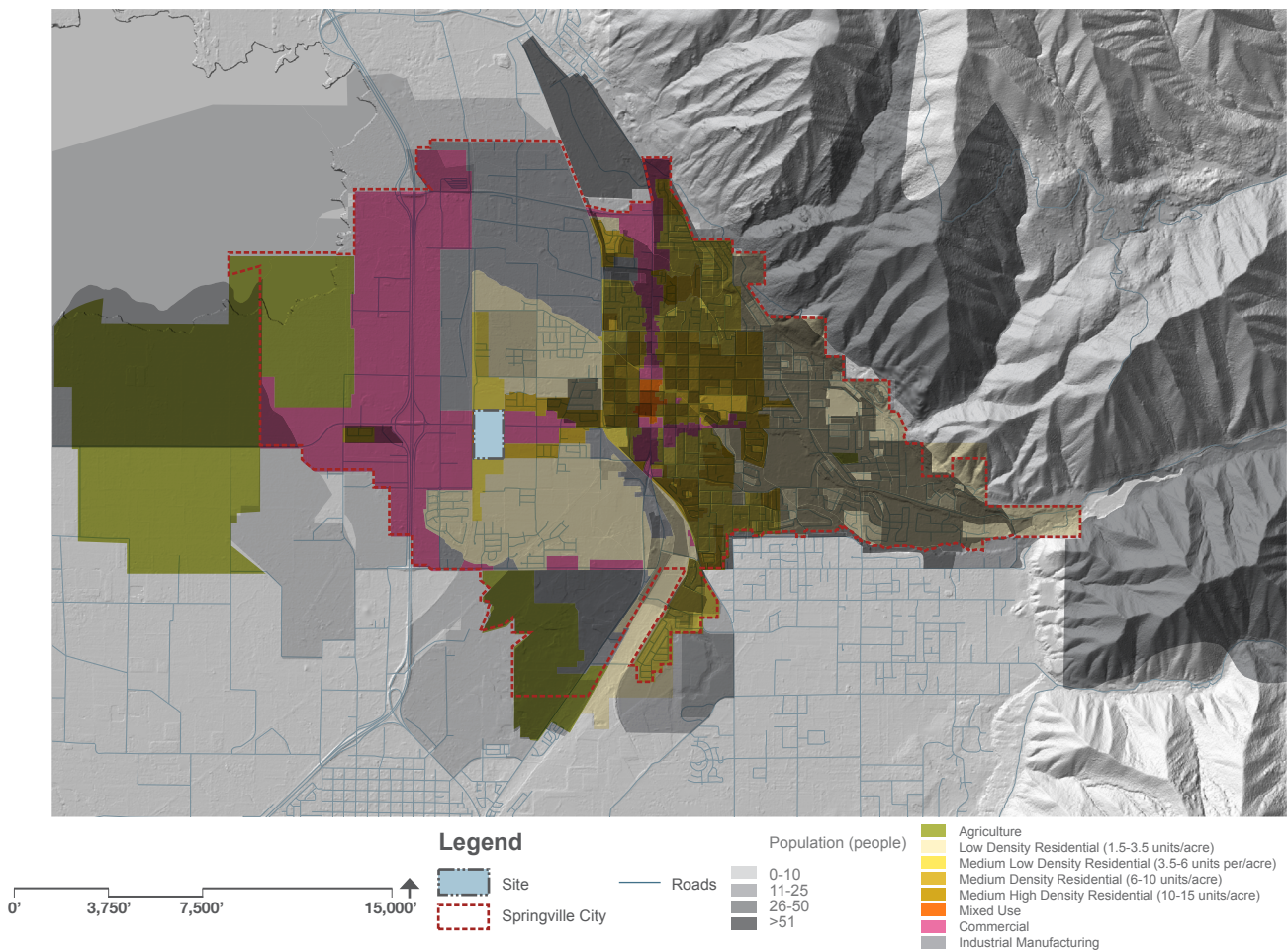


Figure 2.3 - Mix of housing. author, 2010.

Accessibility of uses

inventory maps included

land use + transit

Conclusions

The site and mixed-use area is located adjacent to the rail line. The current bus route runs through the populated section of the city. Opportunities to expand this system to the new growth area along 400 South are possible. Also, opportunities exist to provide other transit connections from the site to downtown. Since the current downtown has relatively high density with adequate access to various uses, this pattern should be extended to the proposed site continuing the growth pattern of downtown.

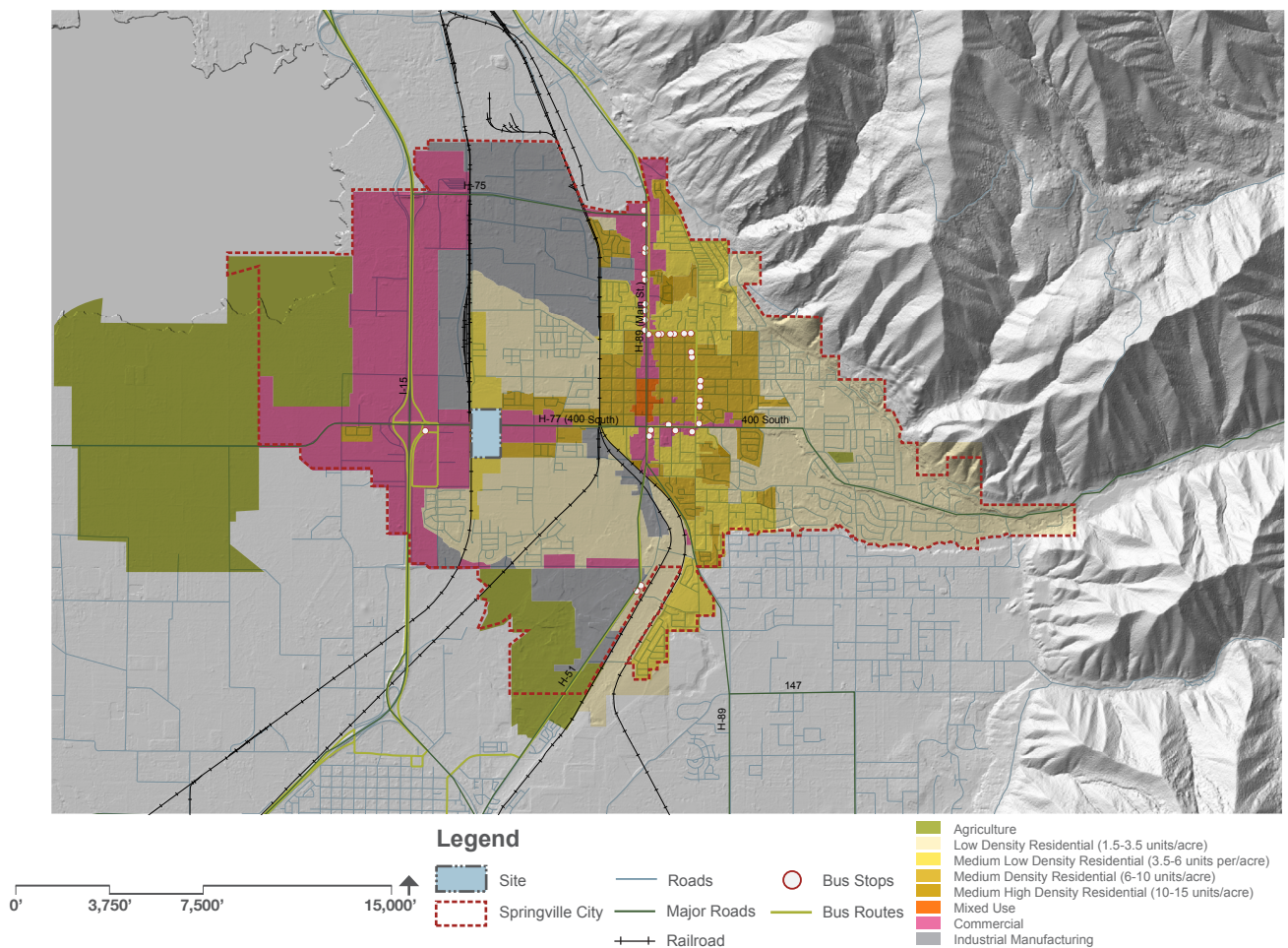


Figure 2.4 - Accessibility of uses. author, 2010.

Connectivity to the region

inventory maps included

transit + natural

Conclusions

Generally, roads were laid out in a grid system in populated areas. In some instances, this does not follow the natural drainage features of the land. Opportunities to connect people back to the region by using these natural features as methods of laying out roads could encourage closer interaction.

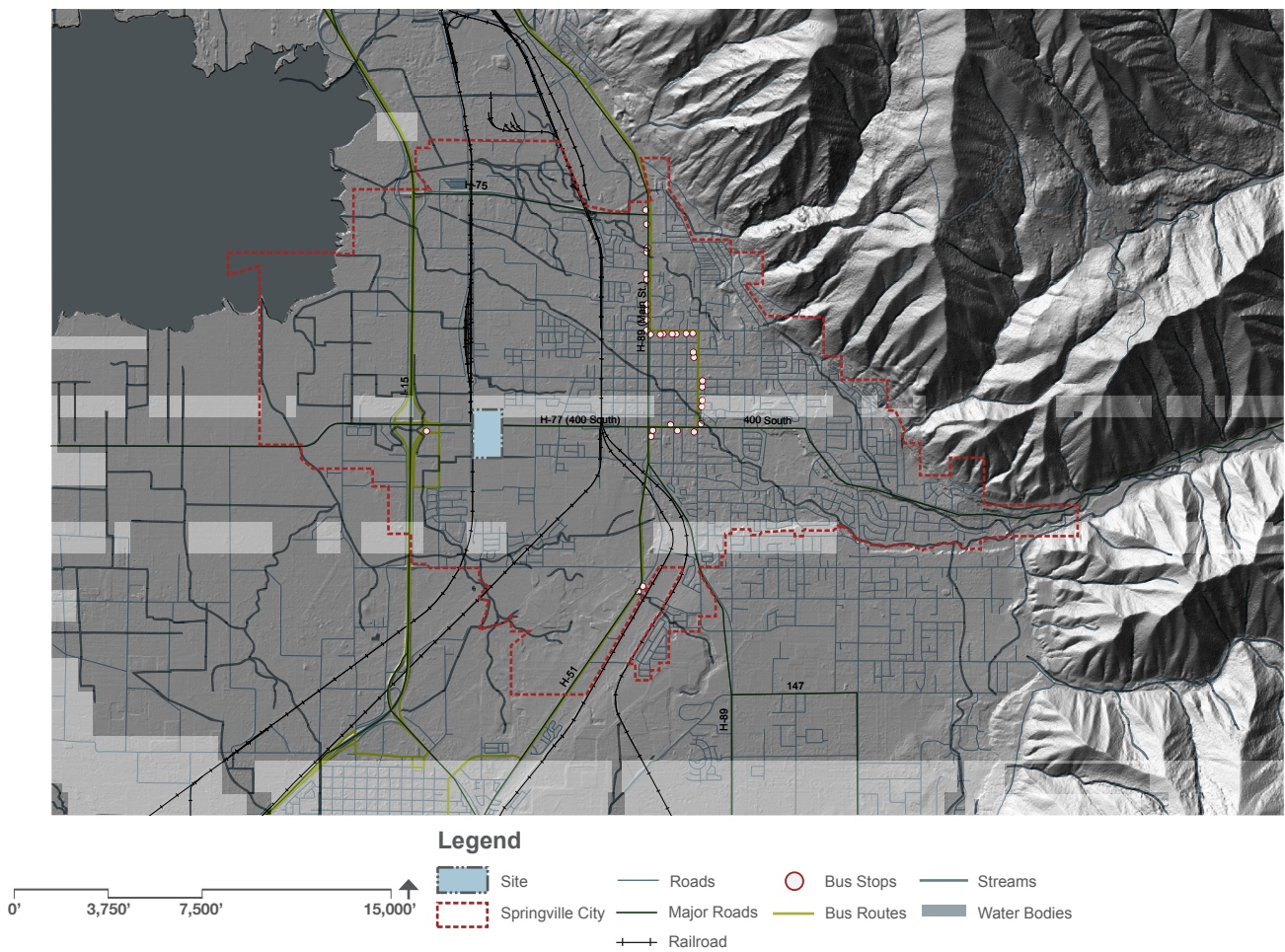


Figure 2.5 - Connectivity to the region. author 2010.

Connectivity to open space

inventory maps included

transit + open space

Conclusions

Roads and trails in the city connect the site well to open space opportunities. There is a lack of pedestrian-friendly connection from the site to downtown. Currently, only Highway 77 (400 South) allows the public to access Main Street a half of a mile to the east, but there are few pedestrian amenities such as sidewalks. The red circles on the figure 2.5 illustrate a quarter and a half mile walking radius. A proposed trail adjacent to the site connects the site to a new community park roughly one mile to the north. Within two and a half miles of the site, the majority of the parks are accessed either by automobile or trail.

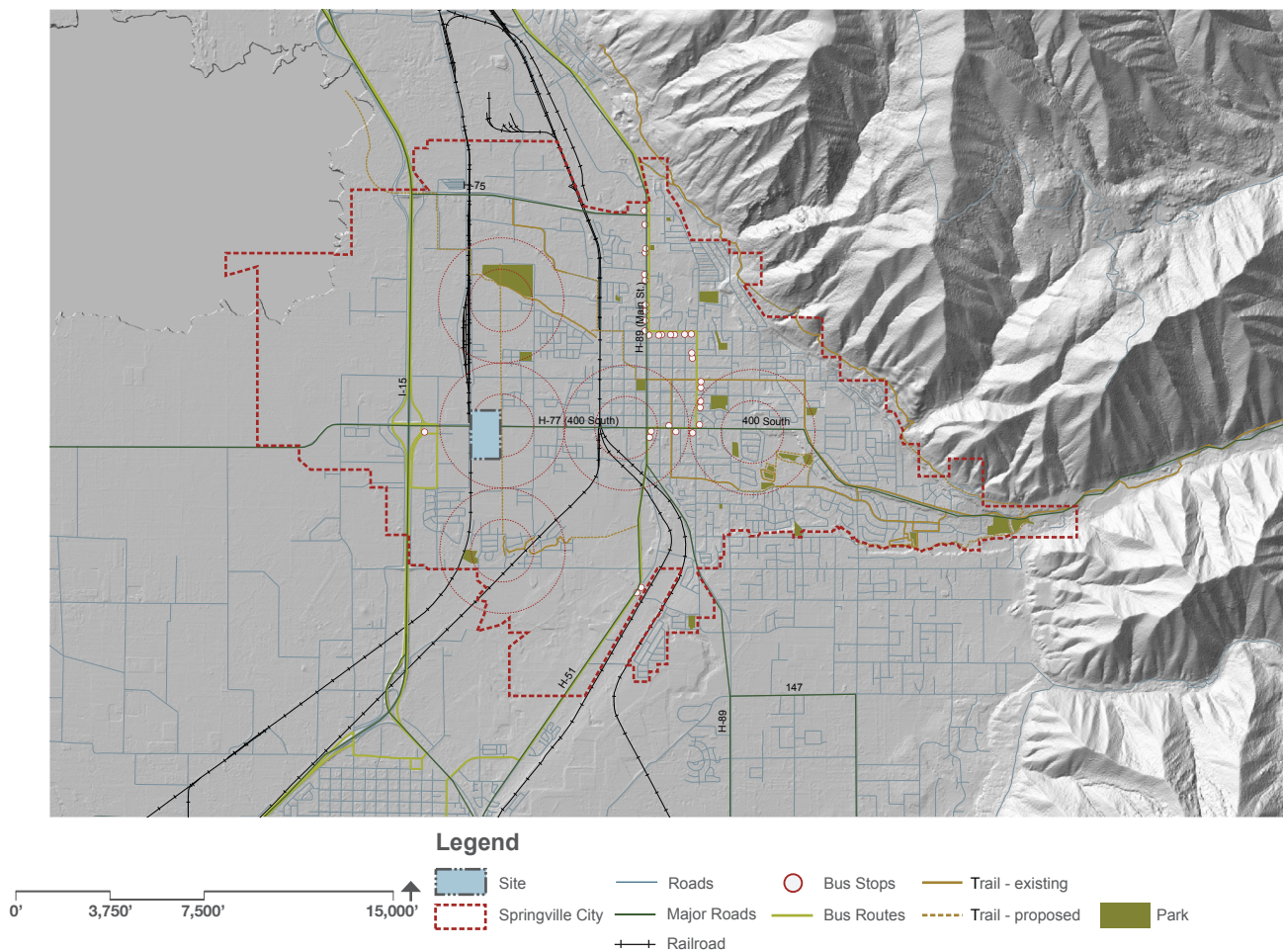


Figure 2.6 - Connectivity to open space. author, 2010.

Cultural opportunities

inventory maps included

transit + cultural

Conclusions

There are a number of schools located in the city. The majority of cultural services are located near downtown and are accessed by the grid system of roads. Within two miles of the site, multiple schools, churches, the library, and the post office are located. As traffic increases from future development, new opportunities to connect these places by more than automobile will be beneficial for the city.

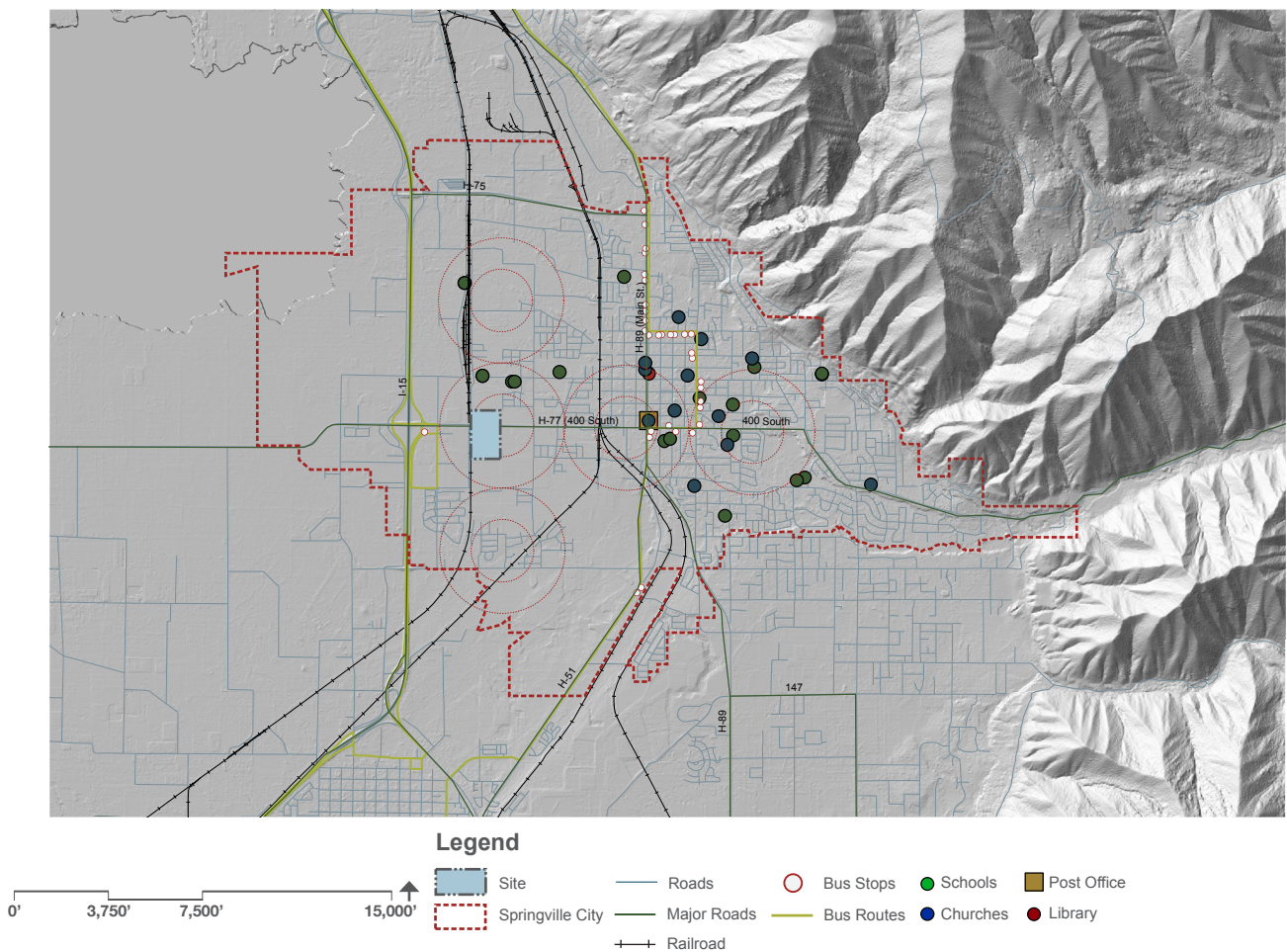


Figure 2.7 - Cultural opportunities. author, 2010.

Sense of community

inventory maps included

land use + natural

Conclusions

No streams or major water bodies run through the site. There are however, a few irrigation canals that service areas surrounding the site. Surrounding the site is mostly low density housing with little elevation change and therefore minimal water disturbance. These characteristics have made this land prime for farming and thus prime for development.

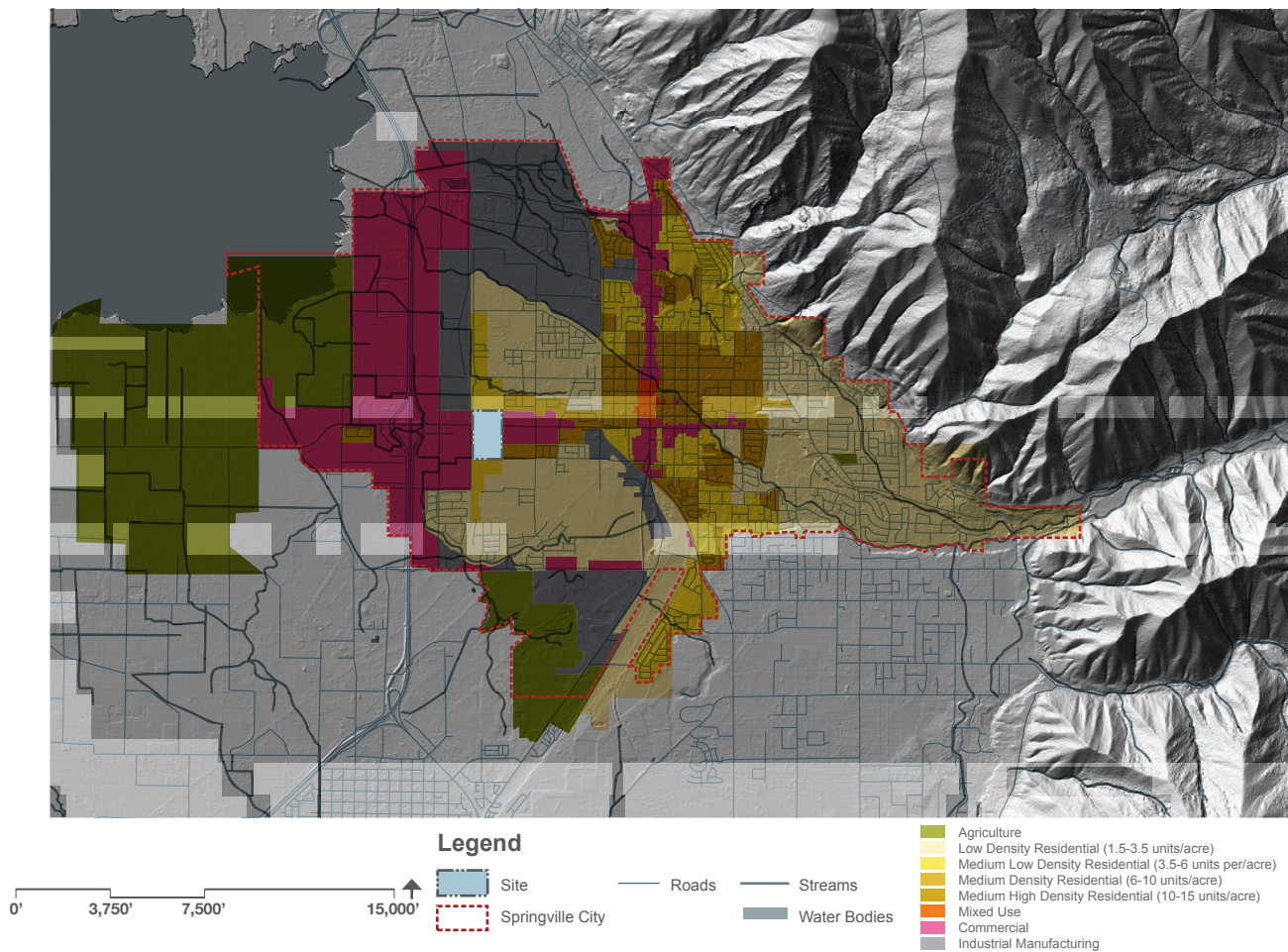


Figure 2.8 - Sense of community. author, 2010.

Connectivity to surroundings

inventory maps included

natural + cultural

Conclusions

Since little development has occurred near the site, there are no natural or cultural influences besides farming and agriculture. This provides a great opportunity to establish a sense of place as the site develops. Specific natural features and selected cultural services should be strategically used to enhance the site amenities and establish a sense of place.

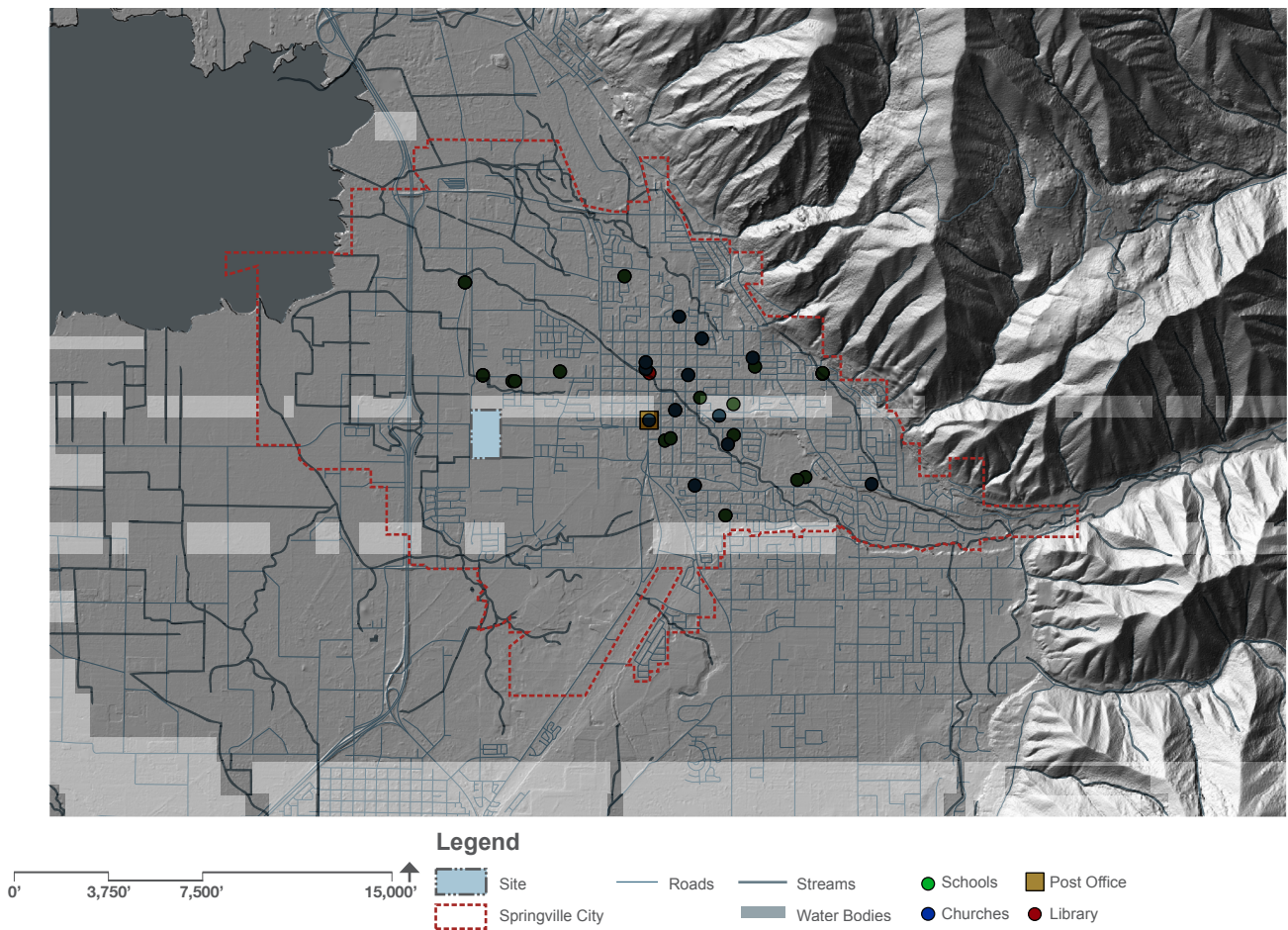


Figure 2.9 - Connectivity to surroundings. author, 2010.

Recreation connections

inventory maps included

open space + transit

Conclusions

Within one mile of the site, there are connections to major roadways: bus, rail, and trails. These transit connections allow users to access Utah Lake, Hobbie Creek Canyon, and various parks. This is one of the positive aspects for the city and should be capitalized on by providing sufficient access to local attractions.

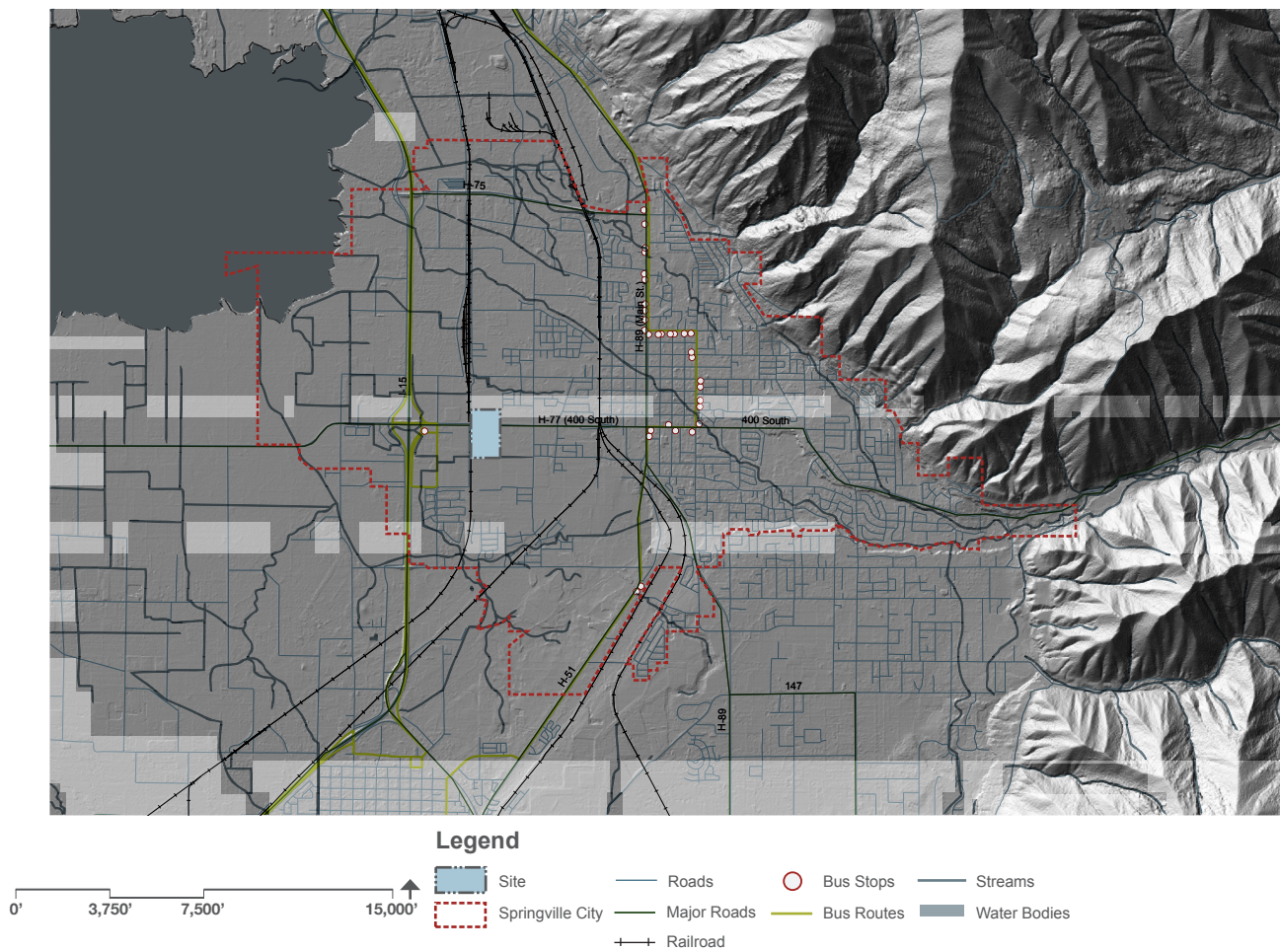


Figure 2.10 - Recreation connections. author, 2010.

Block structure

Old development

New development

Conclusions

Block and street development changed significantly from the existing downtown to the new development located west of town. Illustrations in figures 2.11-2.13 reflect the changes in street layout and block dimension seen on the western edge of the downtown of Springville. There is a distinct change in development patterns. The old development strategy provides more access, smaller lots, and a street wall created by the homes and buildings. The new development is limited in access, larger lots with more wasted space, and wider streets with more pavement area.

The pattern illustrated in Figure 2.13 is typical of development in the rest of the western part of the city. Block dimensions in the old development are approximately 200' x 200'. These block configurations should influence the final design in street configuration and block dimensions.



Figure 2.11 - Transition in block structure on the western edge of Springville. author, 2010.



Figure 2.12 - Old development pattern.
author, 2010.



Figure 2.13 - New development pattern.
author, 2010.

Building style

Old structures

New structures

Conclusions

Structures located in the new development of the city are typical to most suburban developments as illustrated in figure 2.14. No consideration is made for materials or the pedestrian realm. They are fronted with large surface parking lots that create no street wall, and an uncomfortable pedestrian experience. Structures in the old downtown are all different, but share the same proportions, scale, and materiality as illustrated in figure 2.15. Buildings range in height from one to two floors and create a distinctive street wall for a comfortable pedestrian experience.

The design should include a similar architectural style seen in downtown versus the retail shopping centers located in the western part of the city.





Figure 2.14 - New development west of downtown Springville, Utah.
author, 2010.



Figure 2.15 - Old development in downtown Springville, Utah.
author, 2010.



MOUNTAIN ROCK MUSIC

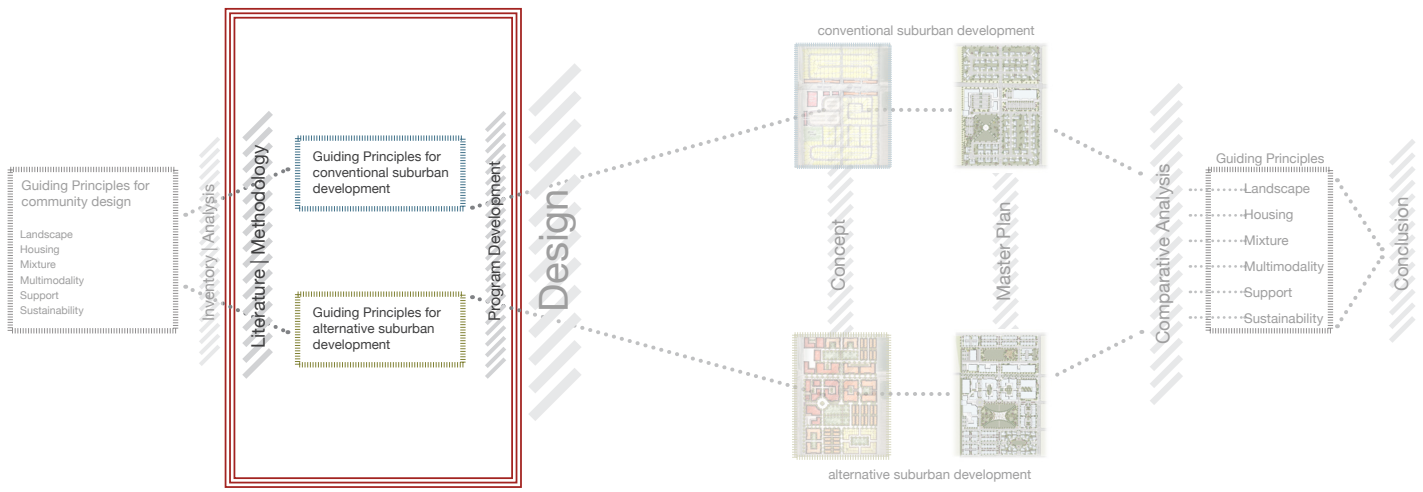


& ORCHESTRA

Open LATE
10am to 7pm
THRU DEC. 23

MON 6-8PM SAT 11 TO 3
PETS OK





Guiding Principles

The six guiding principles—Landscape, Housing, Mixture, Multimodality, Connectivity, Support—will be used in designing and comparing a conventional suburban development and an alternative suburban development.

*Downtown Springville, Utah.
author, 2009.*

Guiding principles

The same six categories of guiding principles for community design are used in explaining the guiding principles for the conventional and alternative suburban development. The categories for each guiding principle use the same category designation, but the application of each principle is different for each design. This is because the methodology for each plan is different. Conventional suburban development uses methods typically seen in suburbia and alternative suburban development uses new methods.

Figure 2.16 illustrates that the categories used for the guiding principles originate from ideas

in community design. These categories are then used in both the conventional and alternative suburban development guiding principles. The application of each guiding principle for each development proposal is different, depending on the theory used.

Table 2.1 summarizes the application of the guiding principles for both the conventional and alternative suburban development. A further explanation for the conventional and alternative suburban development guiding principles describes the literature and methods used is included on the following pages.

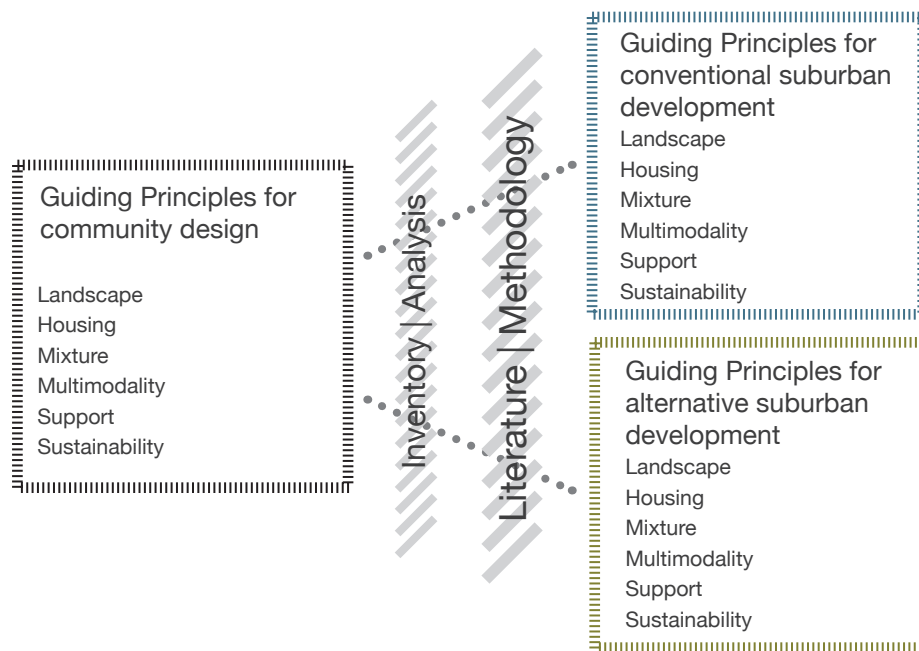


Figure 2.16 - Guiding Principles diagram. author, 2010.

	Conventional Suburban Development	Alternative Suburban Development
Landscape:	Consideration should be given for parks and public uses to serve as a focal points and should be located in one concentrated area.	A range of parks, village greens, and community gardens should be evenly distributed within the neighborhood and serve as a public element bringing people together.
Housing:	Residential lots should be concentrated on single-family detached dwelling units.	A variety of housing type, size, and cost promotes diversity with the development. Consideration should be taken to provide housing options and create dense living centers.
Mixture:	Single-use zoning is encouraged in the area to separate residential and commercial uses.	Different uses and densities create neighborhoods for different purposes.
Multimodality:	Streets should connect to others within the development and provide for alternative modes of transportation.	Streets should be safe, comfortable, and oriented to the pedestrian. They should encourage multi-modes of transportation. Ease of accessibility to daily activities including work, shopping, and recreation within a 1/4 mile radius.
Support:	Single-use zoning encourages new commercial areas to be separated from other uses on the site.	New developments should not overshadow or diminish existing developments in the area.
Sustainability:	Incorporate stormwater runoff into the existing city stormwater sewer system. Plant species should be from or adapted to the region.	Provide alternative methods to manage stormwater run-off through retention, rain gardens, and permeable paving. Consideration for water wise plant species should be taken.

Table 2.1 - Guiding Principles comparison. author, 2010.

Conventional Suburban Development explanation

For the purpose of designing a conventional suburban development, the existing zoning and subdivision regulations used by the city of Springville for neighborhood development are used. These regulations, found in the Springville Municipal Code, currently apply in the city and would require adherence to any new development within the city boundaries. Following the current regulations of the city validates the method of design in the conventional suburban development.

The current regulations for neighborhood development were used on other new developments located near the project site. As discussed in the analysis section of the project, the blocks of the new growth versus the old growth of the city contains larger lots, fewer roads, and are not organized on the grid of the city. This new pattern of growth, seen in various developments near the project site, was used to describe and inform the guiding principles for conventional suburban development.

The Springville Municipal Code and the current trends of development surrounding the project site are used to develop the guiding principles used in the design of the conventional suburban development. An explanation of the application of the guiding principles for conventional suburban development are provided to further explain each principle.

Conventional Suburban Development Guiding Principles

Landscape: Consideration should be given for parks and public uses to serve as a focal points.* Open space in the surrounding area is normally concentrated into one large location. The city has numerous parks similar to this found throughout the city. Smaller plazas and courtyards are typically located within larger parks and are not separated.

Housing: Residential lots should be similar in character to the surrounding developments. The surrounding context is primarily single-family detached housing located on lots ranging from 1/4 acre to 1/2 acre. There are some townhouses and duplexes located north of the site. This trend

focuses the development of similar character to be single-family residential housing.

Mixture: Single-use zoning is encouraged to separate residential and commercial uses. This is typical throughout the surrounding context. The shopping district located west of the site is all commercial space and there is no commercial space found in the residential areas surrounding the site.

Multimodality: The city has encouraged vehicular, rail, bike, and pedestrian access with wide streets, the trail system, and the future transit station. Attempts to include these transportation options should be included into a new development. Arrangement of streets should create connectivity and cul-de-sacs should be avoided, to connect to the surrounding street network. Streets should connect to others within the development. Traffic is typically directed to arterial streets avoiding access points onto major arterial roads.

Support: Single-use zoning encourages new commercial areas to be separated from other uses on the site. Associated parking for commercial space is required as 1 parking stall for every 300 sq. ft. of commercial space.

Sustainability: Incorporate stormwater runoff into the existing city stormwater sewer system. Plant species should be native to or adapted to the region.

Alternative Suburban Development explanation

Different theories and ideas for suburban development exist from architects, planners, developers, and residents. For the purpose of this project, no one suburban alternative was used, but ideas from various proposed theories were used. A particular theory was used as long as it supported the six guiding principles for community development. The purpose of this approach is not to limit the alternative suburban development to one theory but to provide a mix of ideas that support guidelines from the community development principles.

Different theories include ideas from New Urbanism, Transit Oriented Development, Smart growth, Envision Utah, Mixed-use Guidelines,

* Springville Municipal Code "CHAPTER 5 - REQUIREMENTS FOR SUBDIVISION IMPROVEMENTS, RESERVATIONS, DESIGN & LAYOUT" - January 29, 2009.

Boulevards, Sustainable Site Initiative, and precedent studies. Information on particular theories are further described in the literature review section.

Development practices that were used in the older parts of Springville were also studied and utilized to encourage design that would look and function like the existing city. Items researched included lot size, building type, building size, streets, and open space. An explanation of the guiding principles for alternative suburban development is provided to further explain each principle.

Alternative Suburban Development guiding principles

Landscape: Open public green spaces serve as an organizing element. Public space has become broken and fractured, separating one use from another, individual space from nobody's space (Calthorpe 1993, 23). A range of parks, village greens, and community gardens should be evenly distributed with the neighborhood (Duany 2000, 264). Parks and open space can serve as a public element bringing people together.

Public open space can also provide ecological considerations for the community. These services will not only assist in necessary ecological functions, but educate the public of management practices.

Housing: A variety of housing type, size, and cost promotes diversity with the development. Consideration should be taken to provide housing options and create dense living centers.

Mixture: Different uses and densities create neighborhoods for different purposes. A good mixture of uses along a transit line attracts an assortment of users throughout many hours of the day (Dunphy 2004, 177). A mix of uses and densities should be appropriate for the region in order to address context, market demand, topography, transit frequency, and freeway accessibility (Calthorpe 1993, 63).

Multimodality: Options in transportation methods with differentiated street hierarchy. Streets should be safe, comfortable, and oriented to the pedestrian. They should encourage multi-modes of transportation (Duany 2000, 264). Ease of accessibility to daily activities including

work, shopping, and recreation within a 1/4 mile radius. Connectivity to the surrounding context is important to bring people into the site to provide a center of activity.

Support: Understanding the surrounding context of the site is critical to not destroy the existing uses. New developments should not overshadow or diminish existing developments in the area. Proposed uses on a site should be cognizant of the surrounding uses.

Sustainability: Provide stormwater retention, rain gardens, and permeable pavement to reduce water runoff and clean water before it enters the city stormwater system. Utilize native plants to reduce water requirements and invasive plant species. Provide educational opportunities for the public with demonstration gardens.

Conclusions from guiding principles

The guiding principles for both design proposals were used as a guide to inform the design of a conventional and alternative suburban development. It is acknowledged that different design solutions could be derived from the same set of guiding principles. For the purpose of this project, if a design incorporates the guiding principles included in that form of development, the design is acceptable as that particular form of development. For example, if a design contains all of the principles described in the guiding principles for conventional suburban development, than that design is acceptable as a conventional suburban development. The focus of this project is more targeted on the analysis of the two design proposals from a perspective of guiding principles rather than specific and detailed design elements.

Development scenarios were completed to determine the program for the site, both for the conventional and alternative developments. Development scenarios were explored to determine the proper densities for each type of development.

Development scenarios

No program was provided for the development of the site. Therefore, information from the guiding principles for both the conventional and alternative suburban development were used to determine the program. Development scenarios were developed to illustrate three possibilities which include:

Retail focus

Residential focus

Regional attraction

The purpose of examining three separate possibilities was to determine what factors and principles would be the most beneficial for the project site for which development type.

Figures 2.17-2.19 describe each development scenario. The most appropriate scenario for a conventional suburban development is a residential focus. This is primarily because of single-use zoning, requiring a separation of uses. Also, as described in the guiding principles for conventional suburban development, this type of development will include mostly single-family detached housing.

A combination of both the retail and regional attraction focus is appropriate for the alternative suburban development. A regional attraction focus will draw more visitors and residents to the project site. This increase in users would allow for more retail and office space within the site.

The purpose of the development scenarios was to initially determine the relative densities and uses for the project site. This process was completed before any initial design decisions were made for either suburban development proposals. This type of initial study allows for a base program to be established for both suburban development proposals.

The program for each suburban development proposal is formed by both the inventory / analysis and the guiding principles, meaning that the guiding principles for the conventional suburban development informed the program for the conventional suburban development master plan.

Retail Focus: This program focuses on the development of retail uses to create a vibrant community. The Retail focus includes a mixture of densities with mixed-use retail/ residential opportunities. Housing is limited to multiple-family units. Office space is mixed with retail and residential areas.

This focus would not be appropriate for the conventional suburban development because this mixture of uses would not be permitted in Eucidean single-use zoning. The alternative suburban development would be appropriate for this density and mixture of uses.

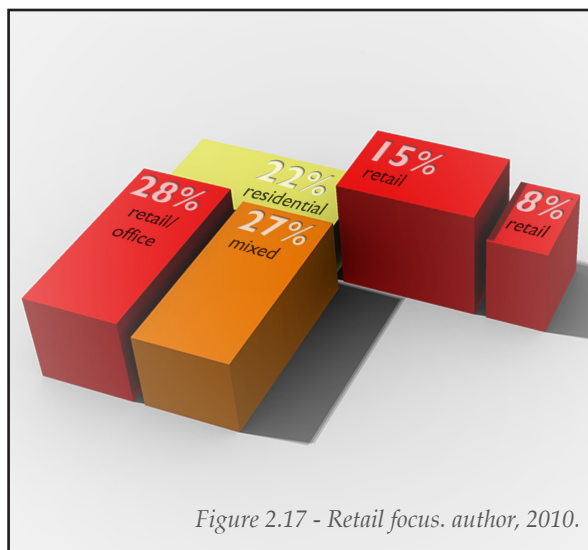


Figure 2.17 - Retail focus. author, 2010.

Residential Focus: This program focuses on residential development with limited retail/ office uses which are designed mostly for the residences. A residential focus will center on a variety of housing including single and multiple family housing units at various densities.

This focus would be appropriate to use for a conventional suburban development. The separation of residential from commercial uses would permit a lower density development, as commonly seen in conventional suburban development.

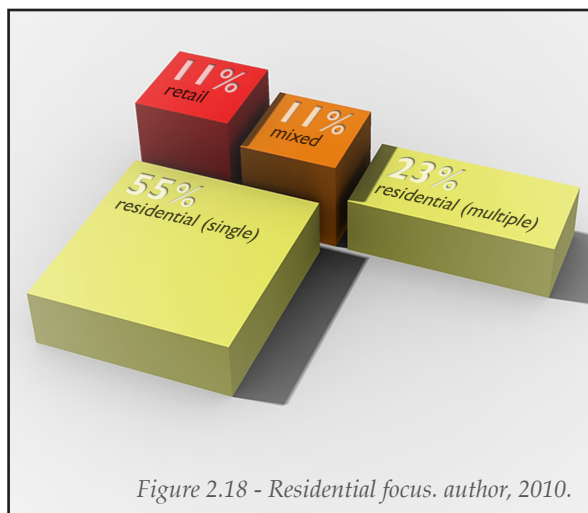


Figure 2.18 - Residential focus. author, 2010.

Regional Attraction: This focus would include major attractions including a shopping center, convention center, or movie theater. This development proposal will still include a mixture of residential and commercial uses.

This focus would attract more visitors to the site than the other two focuses. This could be an important factor especially because of the location of the transit station within the project site. This form of development would be appropriate for the alternative suburban development. The mix of uses and densities would not be permitted in the conventional suburban development.

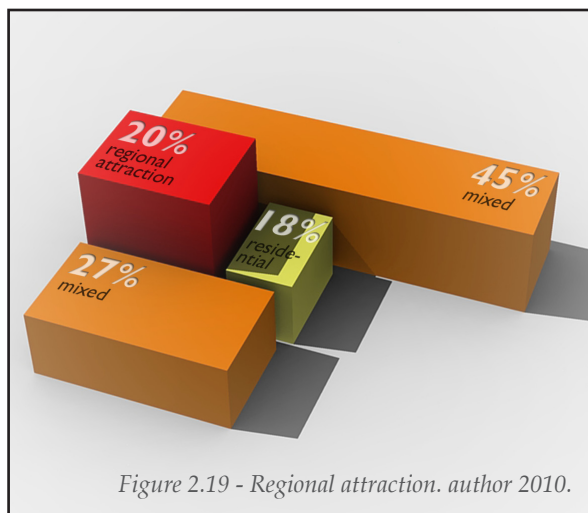


Figure 2.19 - Regional attraction. author 2010.

Program

Since there was no program given for the project site, a combination of guiding principles and development scenarios was used to produce a program for both the conventional and alternative suburban development proposals. This process was derived from the text "Problem Seeking: An Architectural Programming Primer" (Pena 2001). This is established by stating goals, having objectives, and then listing details about those objectives. A summary of the key points for the program are listed below.

Conventional Suburban Development Program

Goal: Create a development that is similar to other conventional suburban developments.

Objectives: Provide similar land use patterns as seen in the surrounding suburban context of Springville, Utah.

Detail: Homes should mostly consist of single-family residences on 1/4 to 1/2 acre lots

Goal: Create a new park for the new growth occurring in the city of Springville

Objectives: A large single park will provide open space for new residents.

Detail: A large park should be located near the transit station to serve as a focal point for the development.

Alternative Suburban Development Program

Goal: Create a development that has the appropriate density and mix of uses to accommodate some of the future 10,000 residents expected by 2020 in Springville, Utah (Springville City).

Objectives: Provide enough housing for at least 1,000 residents by 2020. This is accomplished by providing a variety of housing options in cost, style, and size.

Detail: Single-family homes should be smaller homes on lots not larger than 12,000 sq. ft.. Multi-family homes should be attached units with dimensions no larger than 50'x75'

Goal: Create a place that the city of Springville can demonstrate itself as "the Art City".

Objectives: A park/plaza that will demonstrate the importance of art to the city and create an identity.

Detail: A large park and plaza should be located near the transit station and have flexible green and hard space for various events. Opportunities for sustainable practices should exist.

Goal: Provide amenities / services for transit users

Objectives: Waiting, arrival/departure location with adequate space.

Details: Services for tickets, coffee, snacks, restaurant, and a welcoming center should be included. Location for vehicular drop-off should be located near the transit station.

Goal: Walkable site with multi-modal transportation options within and out of the site.

Objectives Create a pedestrian oriented site.

Details: Amenities include bicycle options, multi-modal streets, connection to existing trail system and connection to existing road network.

Conclusion

Guiding principles were established and defined for each suburban development proposal from existing categories of design found in community design. A program was then developed for both the conventional and alternative suburban development. This process leads to the creation of two master plans that implement the guiding principles for conventional and alternative suburban development. The next section illustrates the process that was completed to create both master plans.



Mark Anthony salon & day spa

Mark Anthony salon & day spa

Mark Anthony
salon & day spa
AVEDA



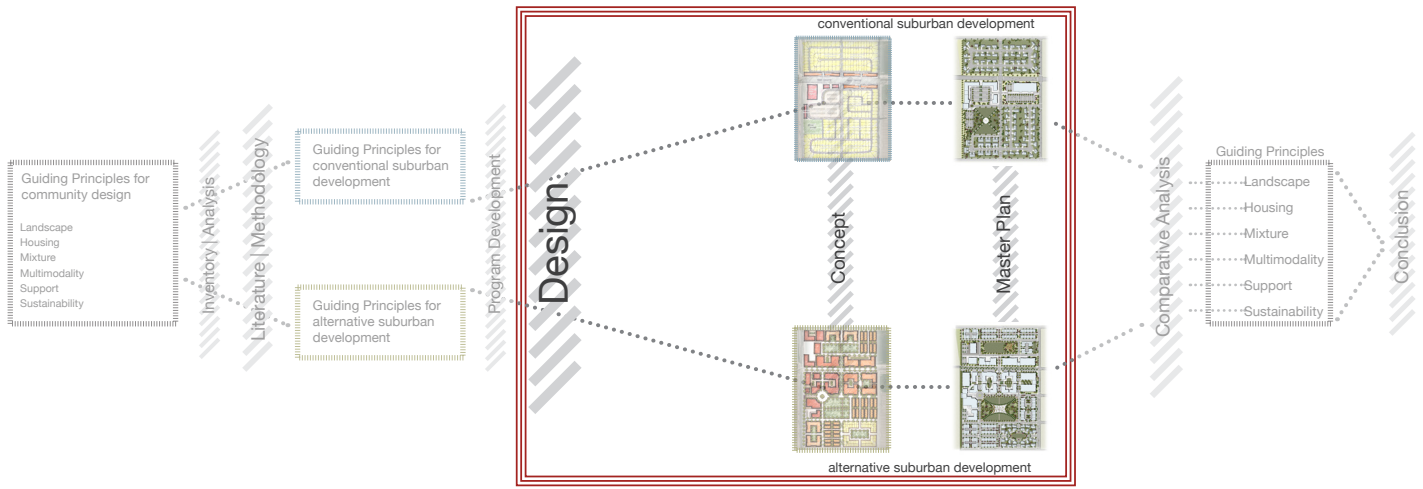
Mark Anthony
salon & day spa
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Mark Anthony
salon & day spa
AVEDA

197 SOUTH
Gift Certificates

AVEDA
NOW WHAT? GET YOUR HAIR DONE!

3
ONE WAY



Design

Conventional and alternative development strategies are used to design two master plan proposals for the site located in Springville, Utah

*Downtown Springville, Utah.
author, 2009.*

Conventional suburban development concept development

The important concept for this plan is the inclusion and incorporation of all guiding principles for conventional suburban development into the design. The incorporation of these principles is further discussed in the narrative for the conventional suburban development master plan and is located later on in this section. The concept development will focus more on conceptual ideas and standards used to create a concept plan.

Densities and uses as explored in the program development section were included in the concept plan to form spatial relationships between uses. This began with bubble diagramming possible locations for residential, commercial, and open space. Bubble diagrams were formed into definable spaces with lot lines placed on them to determine the average allowable size lot.

Main considerations were given to streets and lot dimensions. Standard street widths and dimensions as required by the city of Springville were used to initially determine the street layout. The layout of the streets was influenced by the dimensions and existing patterns of suburban streets that are in different developments surrounding the project site. Initial relationships were explored as illustrated in figure 2.20.

The conventional suburban development concept plan is illustrated in figure 2.21. Lot widths and dimensions were drawn roughly to scale to determine the best methods of double loading the residential streets. This was done to minimize the number of streets that only have one building fronting them. The city of Springville also discourages buildings fronting major arterial streets, including 400 South. Attempts to avoid this does created some streets that are single loaded.

Parking requirements were also considered for the commercial and transit station. Approximate percentages of space requirements determined the needed allocated space for parking.

400 South was maintained as a major arterial street because the street was already placed there in a conventional suburban setting. Efforts to screen the road were considered and further developed in the master plan.

Conceptual ideas were analyzed and further refined into a master plan that includes all six guiding principles for a conventional suburban development. The master plan and description is located on the following pages.

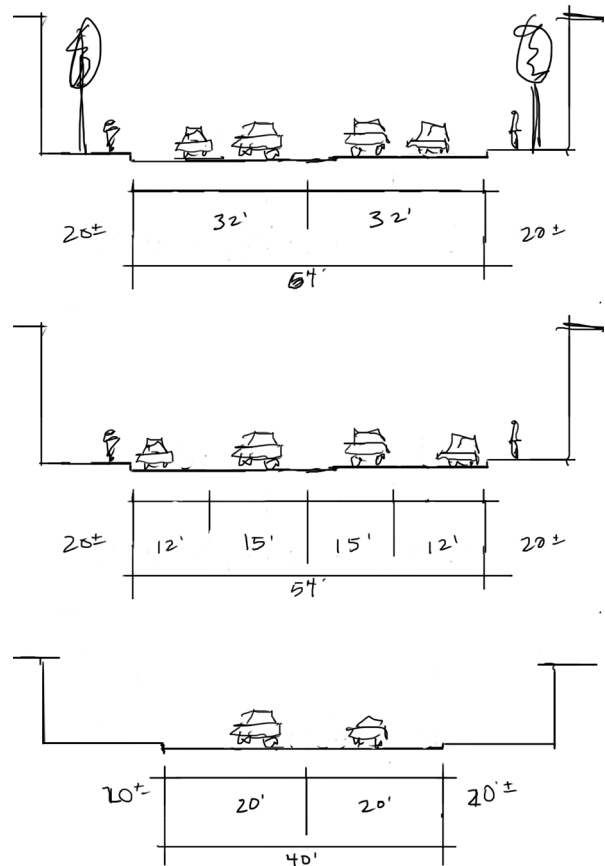
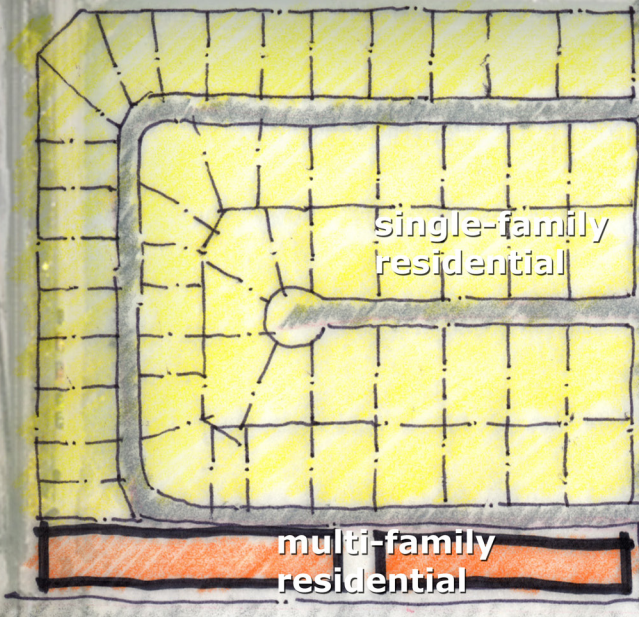


Figure 2.20 - Typical street dimensions for designing the conventional suburban development. author, 2010.

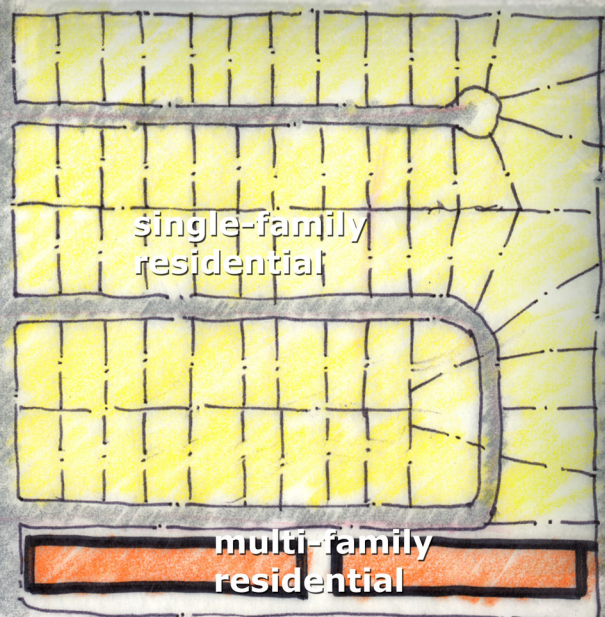
Figure 2.21 - Conventional Suburban Development Concept Plan. author, 2010. (adjacent page)



single-family residential

multi-family residential

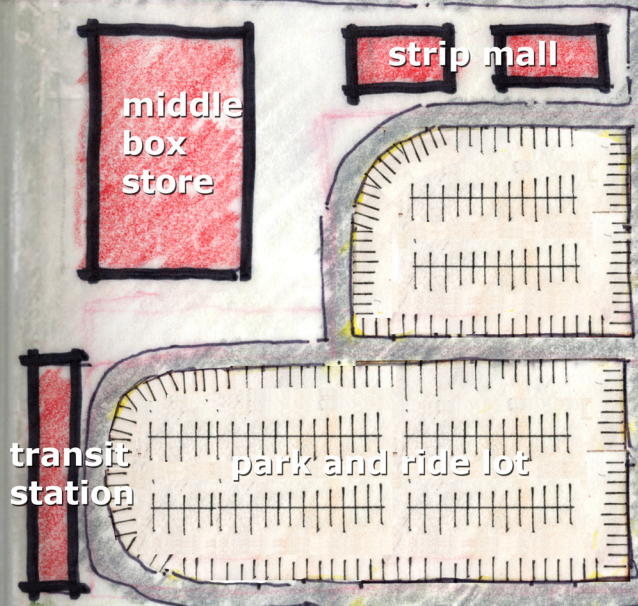
400 SOUTH



single-family residential

multi-family residential

400 SOUTH



middle box store

strip mall

park and ride lot

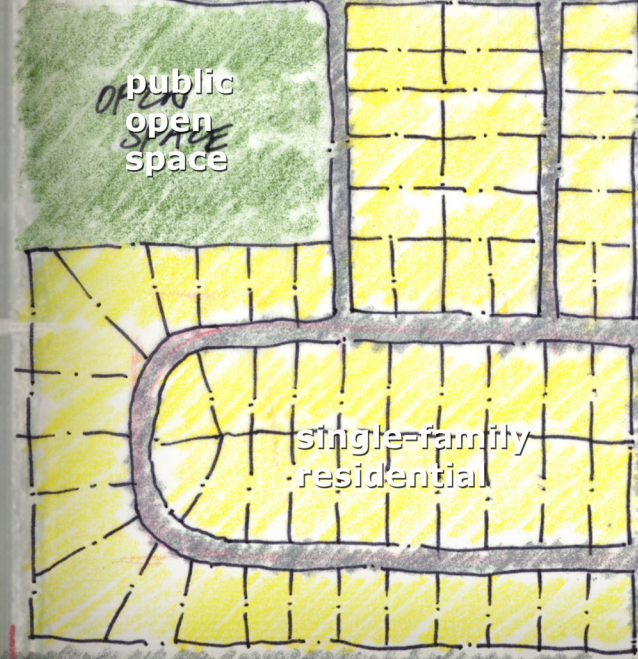
transit station

public open space

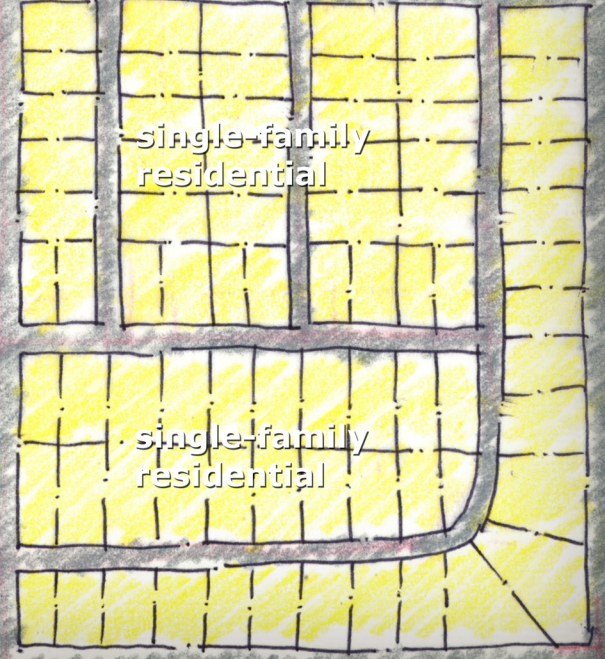


single-family residential

multi-family residential



single-family residential



single-family residential

Conventional suburban development master plan

The concept development plan for conventional suburban development was further refined to develop a master plan, which is illustrated in figure 2.22. Individual guiding principles included in the master plan are described below.

Landscape: A single large open space **3** is used as a focal point for the neighborhood. The majority of the open space in this plan is private space associated with single-family residential lots. Open space buffers the area surrounding 400 South as illustrated in number nine. This public open space is somewhat limited in use because of the speed allowance on 400 South **9**. Plantings are also used around parking lots to screen them from the rest of the development.

Housing: The majority of homes are single-family residences with some duplexes for multi-family residences as illustrated in **7 8**. The housing in this plan requires large amounts of land for a low density development.

Mixture: Uses are not mixed and separated by streets distinguishing retail/commercial from residential. The commercial centers **4 5** are located next to 400 South to maximize visual exposure and access. The uses are also separated by streets to maintain single-use zoning requirements.

Multimodality: Access is directed to larger public roads to minimize traffic on local streets. The city's trail system, street network, and transit station **1** connects the site to the surrounding region. A park and ride **2** is located next to the transit station to provide access for visitors and transit users.

Support: Big box and strip malls with appropriate parking are provided with visual access from 400 South. Parking lots **6** require the same area of footprint because they are single-story buildings. The sidewalks and planters are provided in the parking lots for a better pedestrian experience. Since there is a low density of residential use on the site, most of the traffic for the commercial uses will be from outside visitors, access is provided to minimize interference with the residential areas.

A comparative analysis for both suburban developments, including diagrams, sections, and perspectives is included in the comparative analysis section of the following chapter.

Legend

- 1** Transit Station
- 2** Park and Ride
- 3** Central Park
- 4** Retail Strip Mall
- 5** Big Box
- 6** Parking Lot
- 7** Single-Family Residential
- 8** Multi-Family Residential
- 9** 400 South

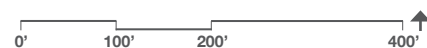


Figure 2.22 - Conventional Suburban Development Master Plan. author, 2010. (adjacent page)



7

7

9

4

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5

6

6

1

2

3

8

7

Alternative suburban development concept development

The important concept for this plan was to include and incorporate all guiding principles for alternative suburban development into the design. The inclusion of these principles is further discussed in the narrative for the alternative suburban development master plan and is located further in this section. The concept development will focus on more conceptual ideas and standards used to create a concept plan.

Just as with the conventional suburban development plan, densities and uses from the program development section were included in the concept plan. A combination of retail and regional attraction focus was used to create higher density with a mix of uses. Spatial relationships were explored through bubble diagrams and later refined into shapes for building locations. Similar sizes and densities were clustered together to form smaller districts within the neighborhood.

The street system was based in the grid pattern established in the older development of Springville. This grid was then intentionally broken where public open space was located to create a focal point and sense of place. Streets were also used as social public spaces. As illustrated in figure 2.23, a differentiated street hierarchy was used to create multi-use boulevards rather than single-use streets. The treatment of 400 South was also critical to this concept. As illustrated in the first example on figure 2.23, the pavement width was divided into two separate uses, one for thru traffic and the other for local traffic. By breaking up the pavement width, the street still serves thru traffic while still providing a comfortable pedestrian experience with on-street parking and store frontages.

Open space was placed throughout the site to provide multiple opportunities for stormwater management practices. Open space allows for stormwater filtration, small rain gardens, and plazas with permeable paving. Open spaces also were included to welcome visitors into the site through the city trail system, rather than around the site.

Conceptual ideas were analyzed and further refined into a master plan that includes all of the guiding principles for an alternative suburban development. The master plan and description is located on the following pages.

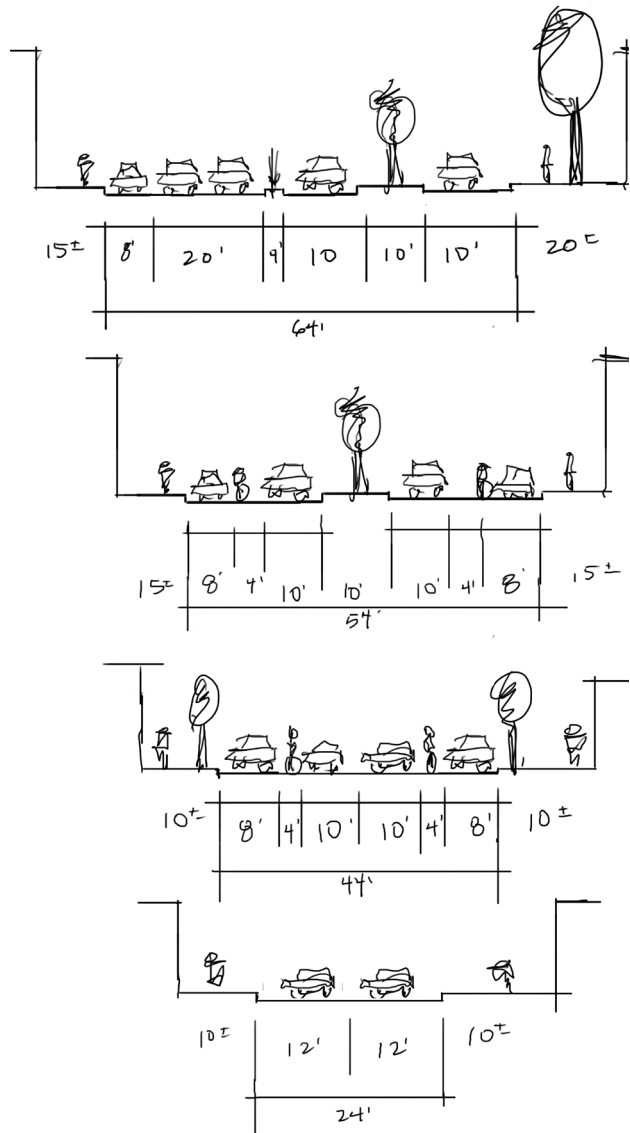


Figure 2.23 - Typical street dimensions for designing the alternative suburban development. author, 2010.

Figure 2.24 - Alternative Suburban Development Concept Development Plan. author, 2010. (adjacent page)



Alternative suburban development master plan

The concept development plan for alternative suburban development was further refined to develop a master plan, which is illustrated in figure 2.25. Individual guiding principles included in the master plan are described below.

Landscape: Series of open spaces are used as organizing elements for the neighborhoods with different levels of public and private access. Parks throughout the site are illustrated as ③ in figure 2.25. Plazas also surround most buildings, providing public open space with permeable paving and plantings.

Housing: A variety of housing is clustered together to promote a mixture of type, size, and cost. This mixture of housing ⑦ ⑧ provides distinct neighborhoods, but also promotes diversity within the site. Housing lots are small, but still provide private open space with a focus on public open space.

Mixture: Different districts are created within the site for mixed-use ①, office ④, and residential centers. The mixture of uses provides a variety of uses that are beneficial to each other. More residents equal more patrons for businesses. The inclusion of a theater for the performing arts ② will attract different group of visitors to the site than traditional commercial use.

Multimodality: Different street typologies are created to distinguish a hierarchy of usage. Arterial streets provide access for thru traffic, local streets are Multimodal boulevards, and neighborhood streets are designed for private access. The treatment of 400 South ⑨ provides a better pedestrian experience by breaking up the pavement width with medians and plantings. An extension of the trail system for the city is incorporated into the design bringing people into and out of the site.

Support: A theater for the performing arts is introduced to support the art museum downtown and not compete with it. The increase in density also provides more users to the site along with visitors. This density allows the site to have more commercial space.

Diagrams, sections, and perspectives further explaining the master plan are included in the comparative analysis section of the following chapter.

Legend

- ① Transit Station
- ② Theater
- ③ Parks
- ④ Mixed-use Center
- ⑤ Big Box
- ⑥ Parking Garage
- ⑦ Single-Family Residential
- ⑧ Multi-Family Residential
- ⑨ 400 South
- ⑩ Office

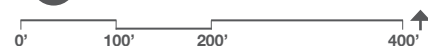


Figure 2.25 - Alternative Suburban Development Master Plan. author, 2010. (adjacent page)



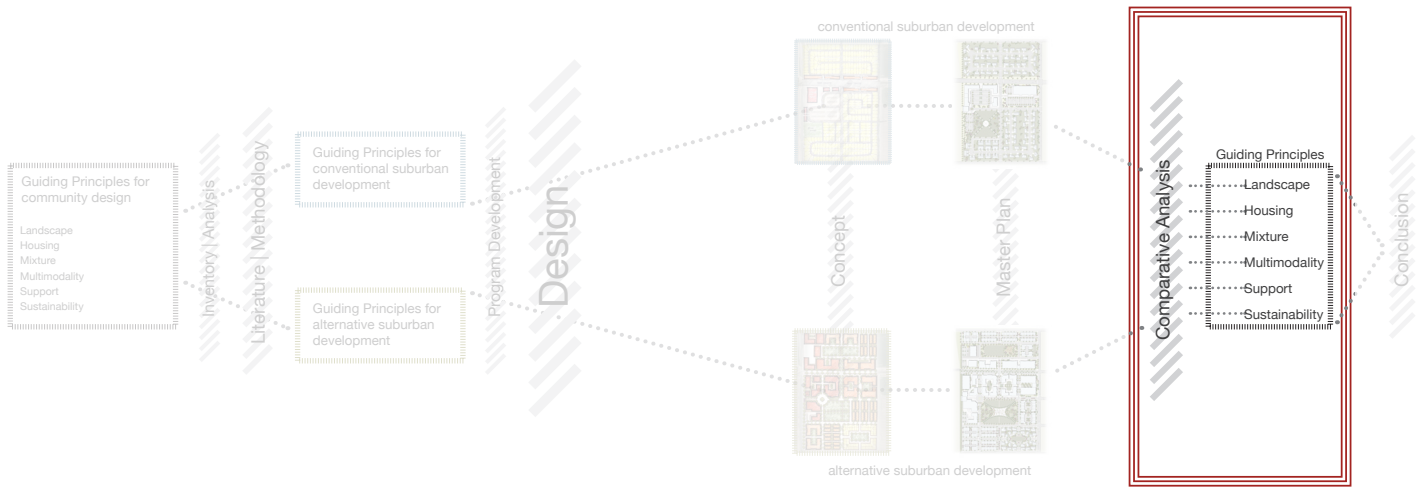
***“First they ignore you,
then they laugh at you,
then they fight you, then
you win.”*** - Mohandas Gandhi

Discovery

Comparative Analysis

Conclusions





Comparative Analysis

Comparing the usage of guiding principles from conventional suburban development and alternative suburban development provides insight into future possibilities for suburban development

*Wasatch mountain range
Springville, Utah. author, 2009.*

Introduction

The comparative analysis of the conventional suburban development plan and the alternative suburban development plan is completed by first, evaluating the incorporation of each guiding principle into the respective designs. Then, the principles are compared to each other, one design versus the other.

Density of both plans is important to include in the comparative analysis—the conventional suburban development with a lack of density, and the alternative suburban development with an increase of density. Using an estimated population in the analysis will better illustrate the comparison between both plans.

Appropriate population estimates for both plans are calculated by the average home size for the city of Springville, Utah, and then multiplied by the number of residential units. The estimated population for conventional suburban development is 365 persons and alternative suburban development is 777 persons. This calculation is illustrated in Table 3.1.

The method for presenting the comparative analysis is as follows. Generally, each guiding principle is compared by quantifiable data; this is illustrated in graphs or charts. Then, each principle is graphically illustrated through diagrams, sections, and perspectives. Text is then accompanied with each guiding principle to further compare and explain each principle. These findings for each of the six guiding principle are explained in further detail on the following pages. Conclusions for all of the six guiding principles are summarized in table 3.2.

The purpose of the comparative analysis is not to determine which plan is more desirable, but to inform citizens, developers, and city officials about two approaches for suburban development.

Conventional Suburban Development Plan (60 acres)

<i>Single Family (SF)</i>	78 units
<i>Multi Family (MF)</i>	24 units
<i>SF average</i>	3.75 person/household
<i>MF average</i>	3 person/household
<i>Est. Population</i>	365
<i>Est. Density</i>	6 DU/acre

Alternative Suburban Development Plan (60 acres)

<i>Single Family (SF)</i>	28 units
<i>Multi Family (MF)</i>	224 units
<i>SF average</i>	3.75 person/household
<i>MF average</i>	3 person/household
<i>Est. Population</i>	777
<i>Est. Density</i>	13 DU/acre

Table 3.1 - Population Calculation

	Conventional Suburban Development	Alternative Suburban Development
Landscape	More total open space both public and private. Segregated private open space limits the amount of public access to only one central public open space.	Public open space placed throughout the development provides better accessibility to residents and visitors.
Housing	Larger lots with more typical single-family housing that fits into the context of the city.	Provides more housing units in addition to a variety of type, size, and cost.
Mixture	Single-use zoning continues the separated land use patterns established in the area.	A new center with a mixture of uses that will serve the residents and the surrounding area.
Multimodality	Standard street widths and designs are used regardless of context. Separates thru traffic to outside streets and focuses local traffic within the site.	Street typologies provide for multiple modes of transportation and are not solely auto-dependent. Brings visitors into the site as apposed to around it through the sidewalk and street network.
Support	Competes with the surrounding retail on both sides of the site because of the lack of density to support new uses.	Does not compete, but support the city with new residents and new uses such as new office, retail, theater, and parks.
Sustainability	Provides typical stormwater management solutions, by conveying all stormwater into a city-wide system.	New alternatives for stormwater management include filtration, rain gardens, and permeable paving.

Table 3.2 - Comparative Analysis Summary Conclusions

Landscape data analysis

(table 3.3 and figure 3.1)

Access to open space is important in neighborhood development. The difference in public versus private open space is distinct between the two plans. The amount of open space for each plan is as follows: (numbers are in square feet)

CSD Plan	Total	Per Person
Public	543,077 ft. sq.	1,490 sq. ft.
Private	732,904 ft. sq.	2,011 sq. ft.
Total	1,275, 981 ft sq.	3,501 sq. ft.

ASD Plan	Total	Per Person
Public	794,500 ft. sq.	1,023 sq. ft.
Private	154,729 ft. sq.	199 sq. ft.
Total	949,229 ft. sq.	1,222 sq. ft.

Table 3.3 - Landscape comparison per person

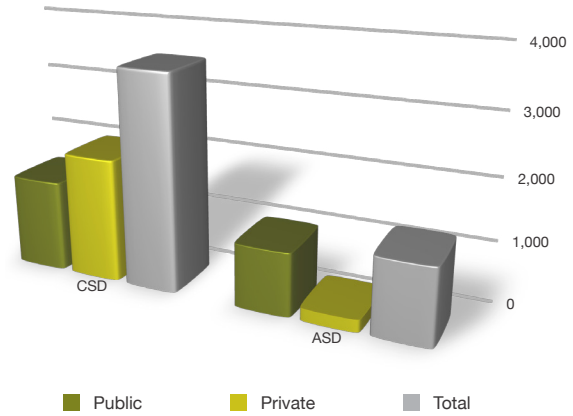


Figure 3.1 - Landscape comparison per person. author, 2010.

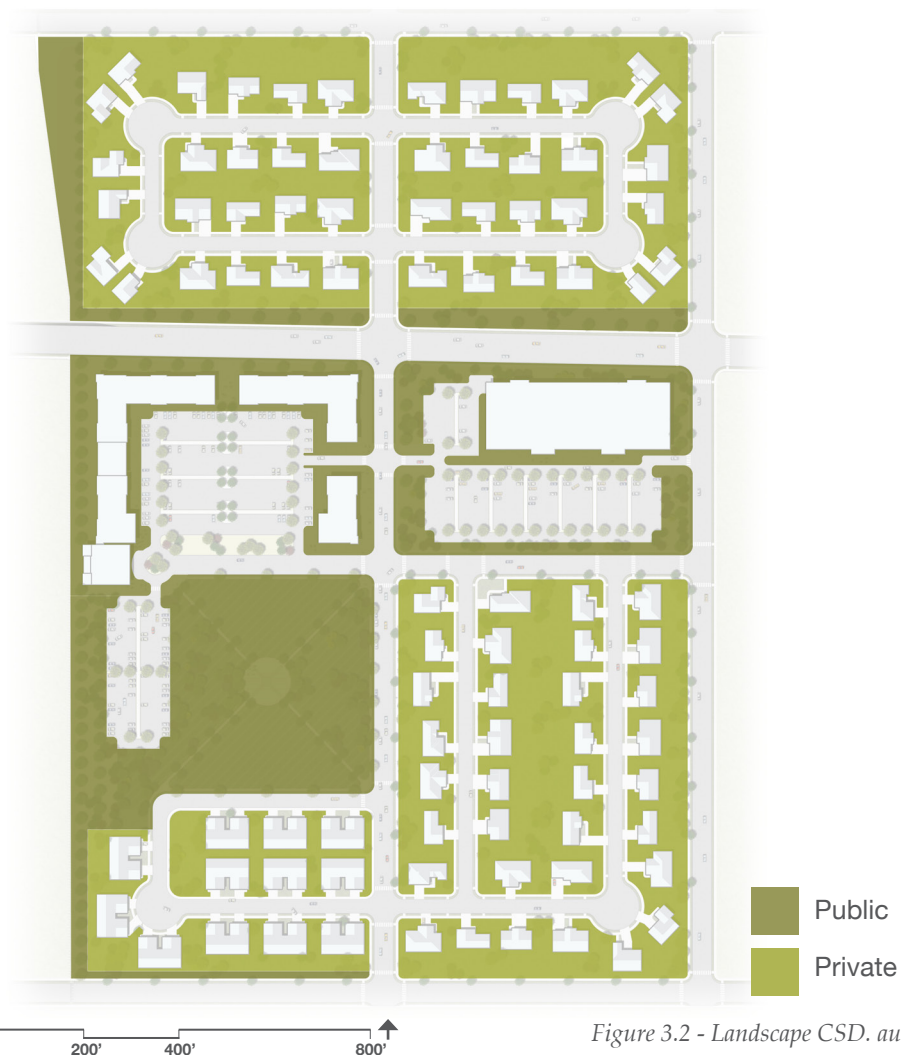


Figure 3.2 - Landscape CSD. author, 2010.

Landscape diagram analysis

(figure 3.2 and figure 3.3)

As illustrated in figure 3.1, The conventional suburban development has more total open space, and more open space per person. Also, being less densely populated in development, the conventional suburban development provides residents with more open space both private and public. Although the population density of the alternative suburban development brings more residents to the site, those residents have less open space per person.

The largest difference in amount of available open space is between private open space. Because of larger, single-family residential lots, the conventional suburban development has an average of 1,291 sq. ft. more per person than the alternative suburban development. With an increase of private segregated land, more land and resources

are wasted to manage them. It is common among single-family residential lots to use more water, fertilizers, and chemicals than would be traditionally used on larger managed landscapes.

The alternative suburban development plan has 467 sq. ft. less public open space per person, but is more evenly distributed throughout the site. As illustrated in figure 3.2 the public open space in the conventional suburban development is located primarily in one central location. The distribution of public open space in the alternative suburban development provides residents with more opportunities throughout the site to interact with public open space. This also provides more opportunities of connected green space for trails and stormwater management.

The balance between open space and population density becomes an important deciding factor in which design is appropriate.

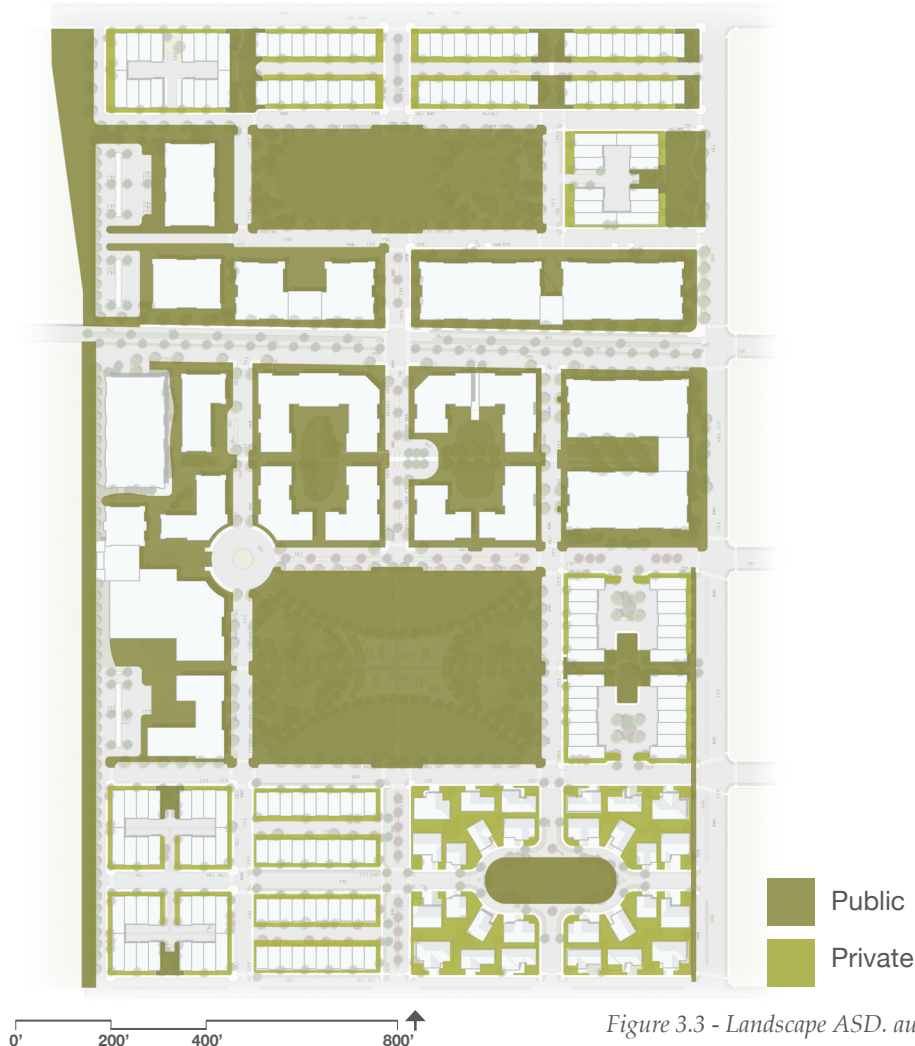


Figure 3.3 - Landscape ASD. author, 2010.

Housing data analysis
(table 3.4 and figure 3.4)

Mixture of single-family and multi-family residential dwelling units are important in creating population density and diversity. The amount of dwelling units for each plan are illustrated in table 3.4 and figure 3.4.

CSD Plan	Total
Single-family	78
Multi-family	24
Total	102

ASD Plan	Total
Single-family	28
Multi-family	224
Total	252

Table 3.4 - Housing data

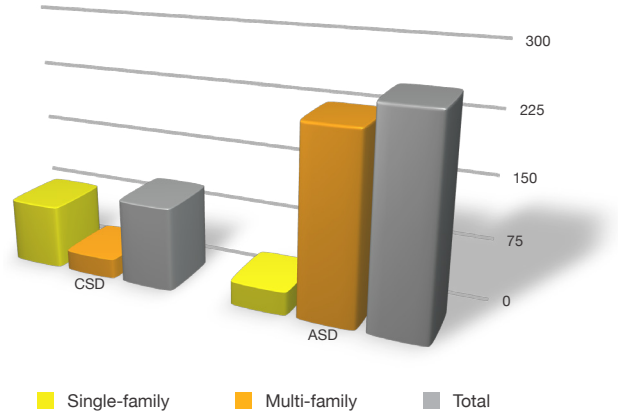


Figure 3.4 - Housing comparison. author, 2010.



Figure 3.5 - Housing CSD. author, 2010.

Housing diagram analysis

(figure 3.5 and figure 3.6)

The alternative suburban development has 150 more residential dwelling units than the conventional suburban development. The density that is created provides more opportunity for people to live near all of the amenities of the site including the transit station. Therefore, residents are faced with the lifestyle choice of a more dense, urban style versus a more open, separated rural style.

Alternatives are more than just a choice of a living situation preference, population growth is critical at the city level. As the city of Springville continues to grow to the west, more farmland continues to be consumed with residential density as seen in the conventional suburban development. It would require almost 80 more acres, or 140 total

acres for the entire development in comparison to the original project site of 60 acres. This level of density will build out the city of Springville 1.5 times faster than the progress of the alternative suburban development.

With faster growth, farmland and fragile ecosystems that are vital to the city will be lost at some point to allow for growth. Denser growth as seen in the alternative suburban development allows for farmland and ecosystems to be saved or preserved while still accommodating population growth.

The alternative suburban development provides a variety of housing in type, size, and cost. This mixture allows for a diversity of residents and more opportunity for people to live in this area with different interests and income levels.



Figure 3.6 - Housing ASD. author, 2010.

Mixture data analysis

(table 3.5 and figure 3.7)

A diverse mix of land use establishes the activity of the development. Commercial and residential land uses are used to determine the relative balance between them for each development. The amount of land use for each plan is as follows:

CSD Plan	Total
Commercial	105,541 ft. sq.
Multi-family	38,400 ft. sq.
Single-family	195,000 ft. sq.
Mixture	31% commercial
ASD Plan	Total
Commercial	305,916 sq. ft.
Multi-family	358,400 sq. ft.
Single-family	70,000 sq. ft.
Mixture	42% commercial

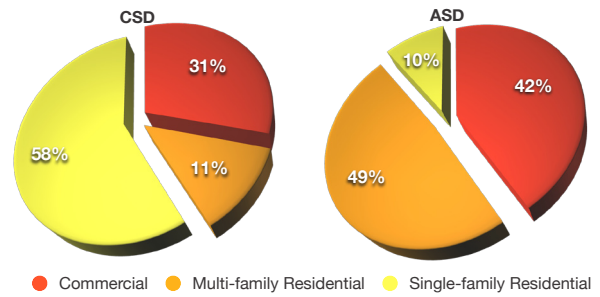


Figure 3.7 - Land use comparison. author, 2010.

Table 3.5 - Land-use data



Figure 3.8 - Mixture CSD. author, 2010.

Mixture diagram analysis (figure 3.8 and figure 3.9)

Although there is more residential in the alternative suburban development, there still is a higher percentage of commercial to residential than found in the conventional suburban development. This finding depends on the anticipated amount of residents and visitors. Since the site is located at a transit station, it can be assumed that more visitors will visit than otherwise would if there was no transit station. Therefore, a higher percentage of commercial space is desirable to serve both residents and visitors.

The conventional suburban development plan does offer a higher percentage of commercial area than found in typical suburban sprawl, but this could still be too little to serve the future demand

in this area for commercial services. The location of a transit station plays a critical role in the future demand for commercial services on this site. The conventional suburban development still has a lower overall population density and would be competing with nearby big box stores located near the freeway interchange. The alternative suburban development offers a higher population density and a variety of commercial uses that encourage more opportunities for businesses to work off of each others successes.

Associated parking requirements for the conventional suburban development impacts the site with large surface parking lots. This space requires more land and is wasted for the parking requirements for the conventional suburban development.



Figure 3.9 - Mixture ASD. author, 2010.

Multimodality section analysis (figure 3.10 and figure 3.11)

Transportation options provide residents more opportunity for interaction on public streets, sidewalks, and trails. Cross sections of different streets used in both plans are presented below.

CSD Plan

Arterial

City

Local

ASD Plan

Arterial

Boulevard

Neighborhood

Local

Cross-sections for the conventional suburban development were derived from typical streets in neighborhood guidelines for the city of Springville. These streets are used regardless of the

surrounding context and frontage. This could encourage the same speed of traffic in a commercial area versus a residential area because of similar street widths.

The arterial street of 400 South in the conventional suburban development provides ample room for automobile traffic and speed, but does not consider the pedestrian realm surrounding the street. The alternative suburban development allows flexibility in the treatment of 400 south by breaking up the pavement width with medians and side streets. This encourages thru traffic to continue, while allowing pedestrians to enjoy the space created by the side street and store frontages.

Boulevard and neighborhood streets in the alternative suburban development provide different levels of activity at the neighborhood and local level. Street widths are determined by the context and not simply a the standard.

Streets play a critical role in developments by creating public space for travelers. Effective multimodal streets will encourage different transportation methods and contribute to the diversity in the development.

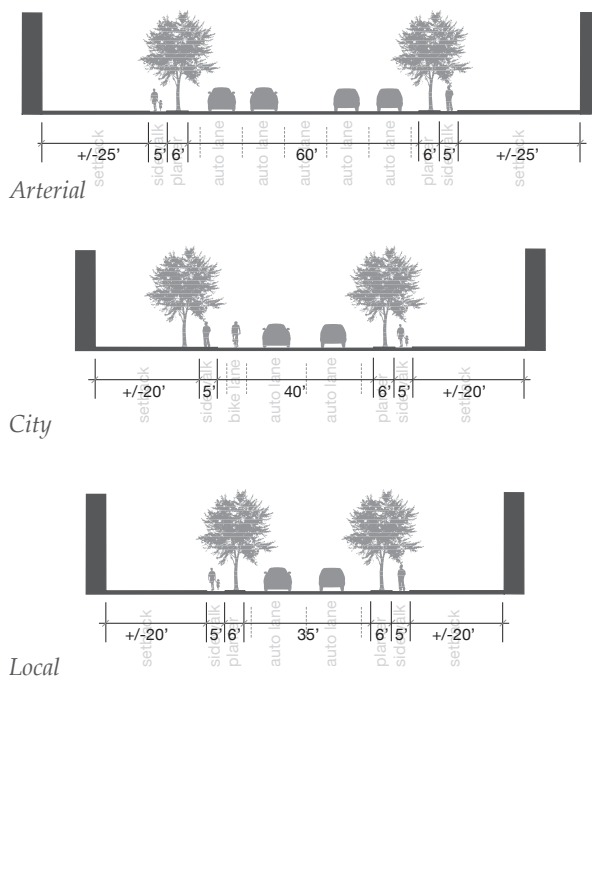


Figure 3.10 - CSD Street Cross-Sections. author, 2010.

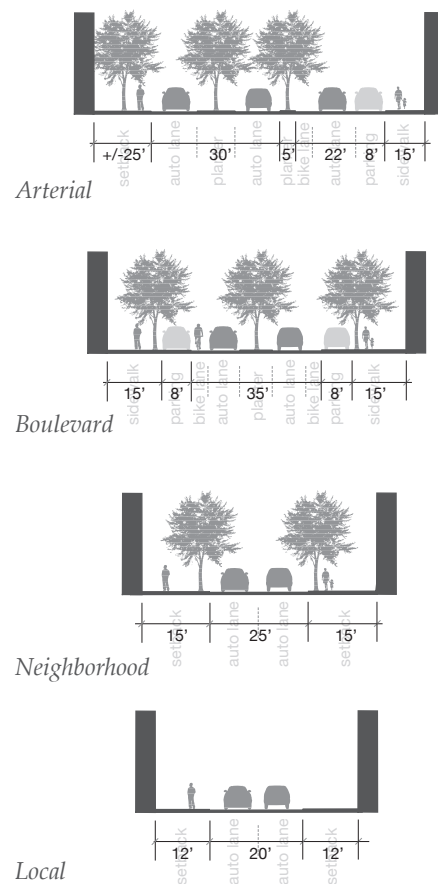


Figure 3.11 - ASD Street Cross-Sections. author, 2010.

Multimodality diagram analysis

(figure 3.12 and figure 3.13)

Both proposals incorporate 400 South, the proposed north/south city trail, and the commuter rail. These elements are treated differently in each design.

The conventional suburban development treats 400 South as the main west/east arterial, directing traffic thru the site and not into it. More access locations into the alternative suburban development connect the site to the surrounding arterial streets. This treatment decreases traffic on the arterial roads and connects people into the site rather than around it.

There is a proposed trail adjacent to the site connecting it to other city parks to the north and south. The conventional suburban development

continues this trail adjacent to the site, while the alternative suburban development draws people into the site with linked green spaces and trails.

The transit station is located in the same location on both designs to objectively evaluate the connection to the site. The conventional suburban development provides parking for park and ride opportunities. This space encourages people to drive to the station and occupies precious land within the site.

Connectivity to the site improves the vibrancy of the area by bringing people into the site. By providing more access points, the alternative suburban development will bring more traffic into the site, better connecting people with destinations. Slower design speeds, on-street parking, and tree lined streets will create a better pedestrian experience on the streets throughout the site.

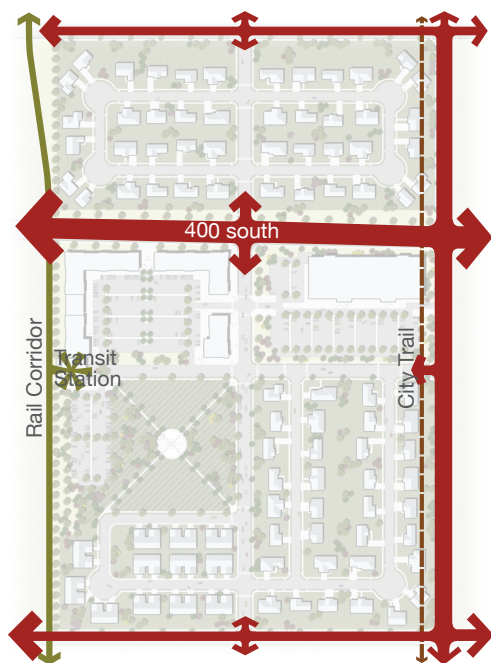


Figure 3.12 - Conventional suburban development: The conventional suburban development only provide access into the site from major intersections. This isolates the site from outside visitors and disconnects the site from the surrounding context. author, 2010.

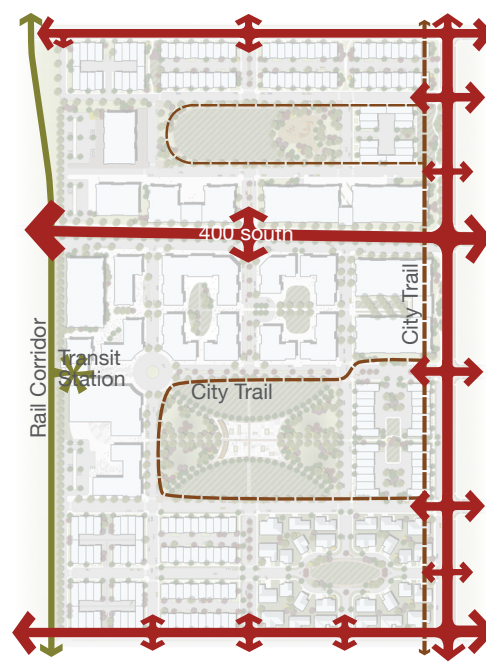


Figure 3.13 - Alternative Suburban Development: More connection opportunities are available in the alternative suburban development to the surrounding street network. Also the city trail brings visitors into the site, not around it. author, 2010.

Support context analysis

(figure 3.14)

The conventional suburban development includes similar big box retail and strip mall shopping as found in the shopping center west of the site and the Provo Town Centre Mall north of the site as illustrated in figure 3.14. Since the population density created in the conventional suburban plan is low, it would not be adequate to support new retail space. This would then compete with the existing retail space downtown and to the west and north of the site.

The alternative suburban development provides both retail, office and event space. The increase in population density and variety of commercial space would not compete with the surrounding area, but support it by providing new needed services and uses created by new residents and visitors.

The alternative suburban development provides a new theater for the performing arts to complement the existing museum of art located downtown. This also supports the city by contributing to “the Art City”, but not competing with the art museum. A sense of place would be created for the site that would follow the existing character and style of the city.

Adequate uses and amenities in the site will support the city and not compete with the existing success of downtown. The amount of commercial space depends on the amount of residents and visitors expected at the site. New uses should not compete with existing surrounding uses but contribute the overall success of the region. Population density is also critical in determining the size, location, and frequency of uses such as retail, office, and event space.

Support aerial analysis

(figure 3.15 and figure 3.16)

The uses placed in sites also have an impact on the visual quality of the place. Figures 3.15 and 3.16 illustrate an aerial perspective for each development from the transit station looking east. The conventional suburban development welcomes visitors with parking lots, a park and houses in the distance. The alternative suburban development has a highly active mixed-use center with parks, plazas, and a variety of commercial uses. Density plays an important role here for the space to work as a vibrant mixed-use center. This density is created with more housing and more commercial space.

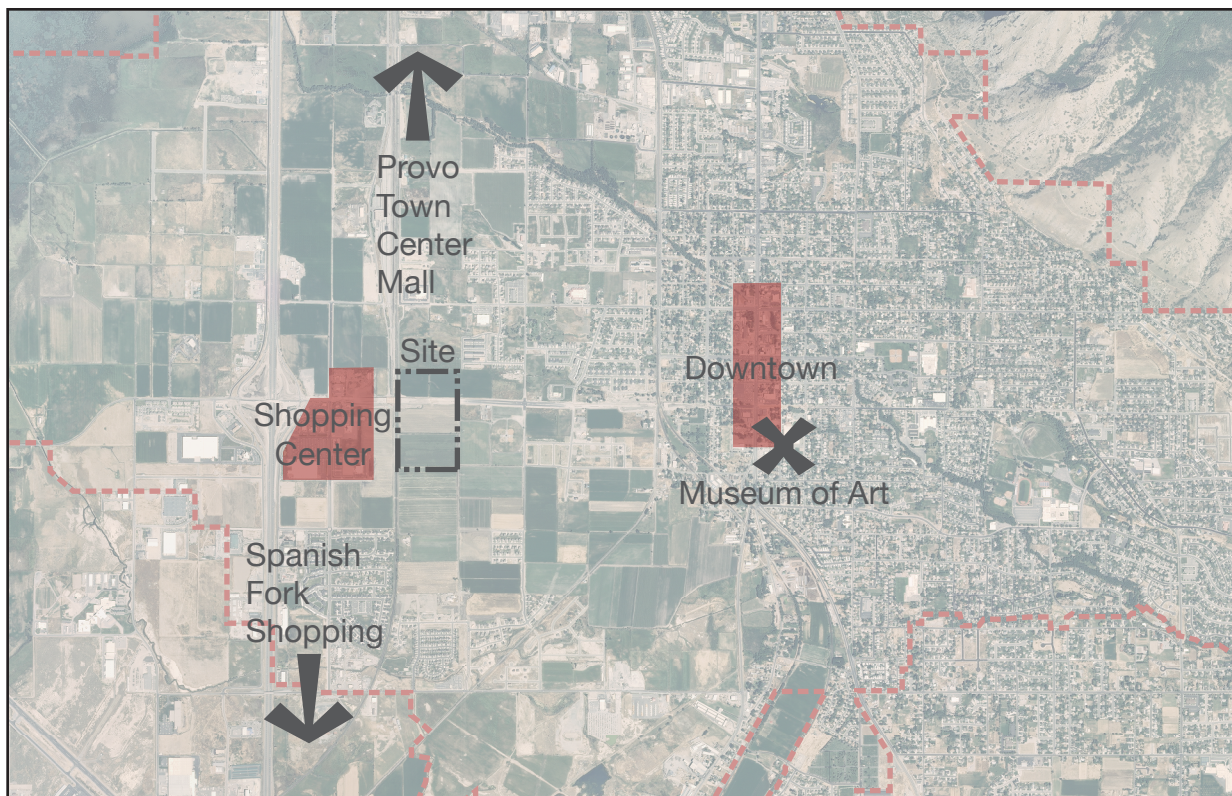


Figure 3.14 - Support Diagram. author, 2010.



Figure 3.15 - CSD Aerial perspective. author, 2010.



Figure 3.16 - ASD Aerial perspective. author, 2010.

Sustainability analysis
(figure 3.17 and figure 3.18)

Incorporating green practices will provide ecosystem services. Practices incorporated into the design of the plans are illustrated in figures 3.17 and 3.18 and include the following:

- Stormwater sewer system **1**
- Stormwater retention **2**
- Rain gardens **3**
- Permeable pavement **4**
- Water wise and native plants **5**

The conventional suburban development follows the guidelines for neighborhood development which requires conforming to the existing city stormwater sewer system. Stormwater run-off is directed to the street gutter system and into the stormwater sewer system. This method of stormwater management will require the city to expand the current sewer system to facilitate more storm run-off.

Large public open spaces provide more opportunities for green alternatives. The alternative suburban development provides multiple parks at various sizes that allow for stormwater retention.



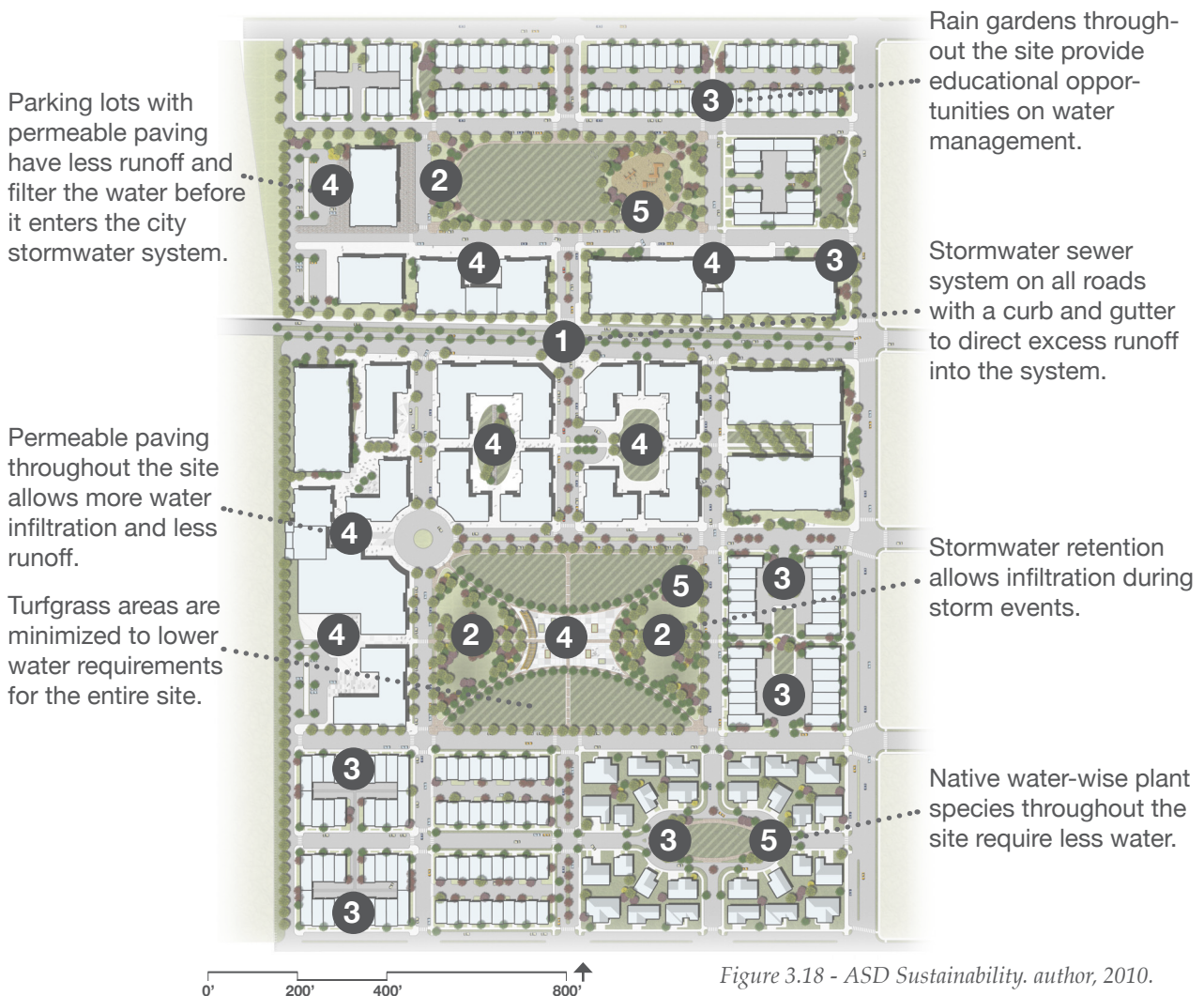
Figure 3.17 - CSD Sustainability. author, 2010.

tion and water filtration. These parks help to filter stormwater run-off before it enters into the city stormwater system.

The alternative suburban development utilizes permeable pavement throughout the paved areas. This reduces run-off from these areas and decreases the demand needed for the city stormwater sewer system. This plan also provides rain gardens throughout the site. These reduce stormwater run-off, filter water, and provides educational opportunities for residents and visitors.

Vegetated areas adjacent to paved areas also provide places for stormwater run-off to drain and filter before entering the city stormwater system.

The alternative suburban development utilizes native and water-wise plant species. These plants will reduce the need for irrigation and chemicals. The conventional suburban development has large turf grass areas, which require large amounts of water and management.



Recommendations

The purpose of this project was to provide a resource to educate the public about alternatives for suburban development. The methodology was to provide recommendations for developers, city officials, and residents. Recommendations for each of these groups are as follows:

Developers: An understanding of the design possibilities for suburban development provides viable new products in housing and commercial markets that developers can explore. By providing consumers with different options, developers could diversify offerings to their clientele.

Sustainability has also become a marketing feature for developers. By providing a more dense living situation with sustainable practices incorporated into the design, developers can market their products to a broader demographic that is concerned with these factors.

City Officials: New methods for suburban development will help to manage the growth of cities in a financially and environmentally responsible manner. That is to say that infrastructure cost for suburban development will be less because of the increased density of developments. Open space can also be preserved within the city limits for natural areas and agriculture because more people can live in a smaller area.

Residents: There is a large amount of responsibility placed on the residents who are consumers of products provided by developers and city officials. If new alternative suburban develop-

ments are built and no one will live there, then developers and cities will stop building them. On the other hand, if consumers demand this type of living situation, more of them will be built.

Recommendations from this project will help to inform the region of alternative suburban developments. Envision Utah, a regional growth plan for the state, has established benchmarks and development scenarios for the region.

Envision Utah

This regional growth plan was initiated by providing the region, through numerous community meetings, four different growth scenarios. These scenarios ranged from more sprawled than current trends to dense urban in-fill as illustrated in figure 3.19. The citizens ultimately chose a growth scenario that encouraged dense development (Envision 2000, 50).

The alternative suburban development better supports the initiatives of Envision Utah than the conventional suburban development. This is accomplished by a more compact and dense development, promoting the goals and objectives set forth in Envision Utah. Also, by providing green alternatives into the suburban development, more opportunities to better manage growth exist and add to the goals of Envision Utah. For these reasons, it is recommended that the alternative suburban development be used as an example of growth in the region rather than the conventional suburban development.

Envision Utah Goals	Alternative suburban development
Enhance air quality.	Air quality is increased by less automobile dependence, smaller residential units, and fewer wasted resources.
Increase mobility and transportation choices.	Multi-modal street and trail networks increase accessibility and mobility.
Preserve critical lands, including agricultural, sensitive, and strategic open lands and address the interaction between these lands and developed areas.	Provides a compact development that will preserve more open space for the city by having more people live in a densely populated environment.
Conserve and maintain availability of water resources.	Stormwater management practices will conserve and maintain water availability.
Provide housing opportunities for a range of family and income types; and maximize efficiency in public and infrastructure investments to promote the other goals.	More housing options with a smaller development footprint will decrease infrastructure costs per person while still providing a great community to live in.

Table 3.6 - Summary of how alternative suburban development meets the goals of Envision Utah.

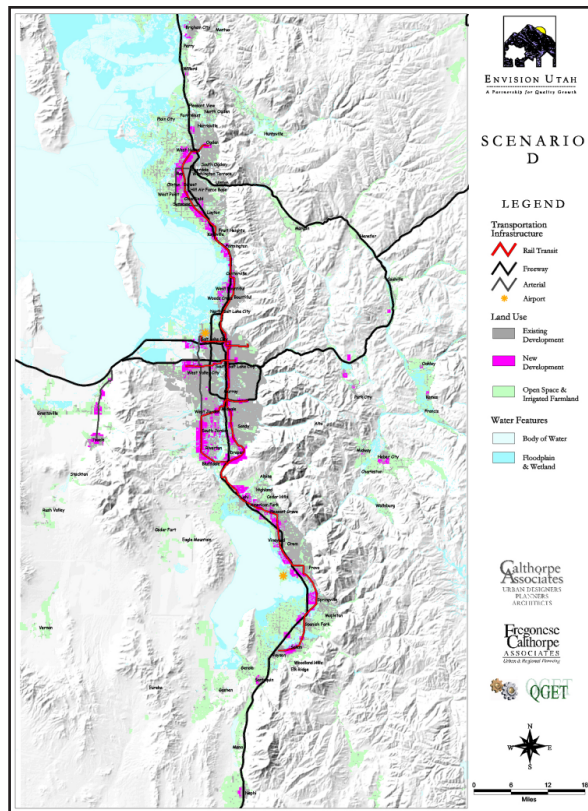
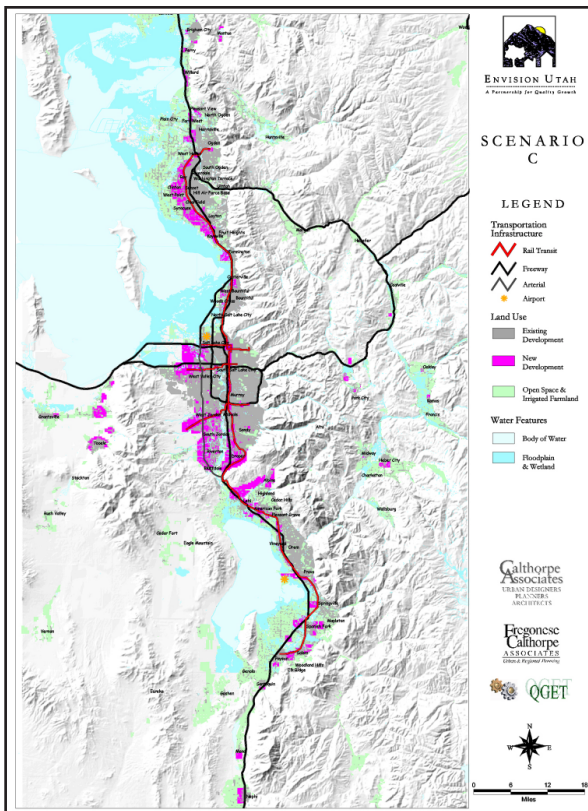
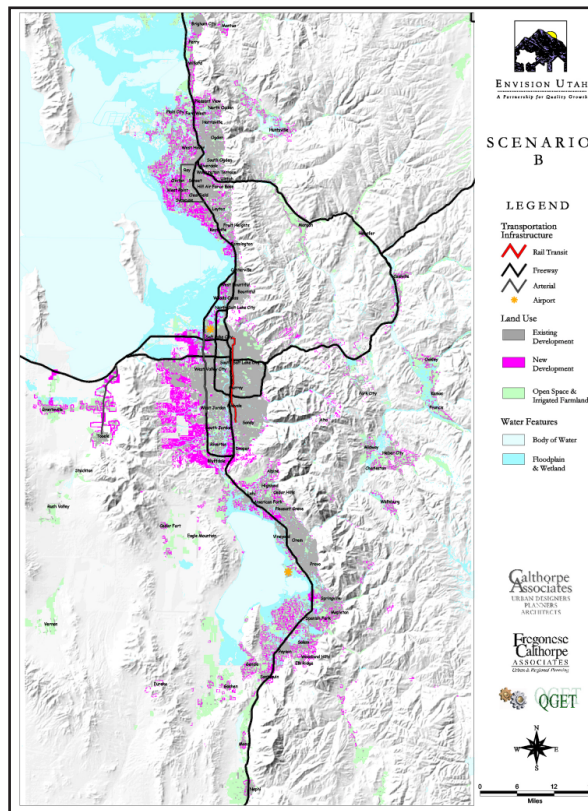
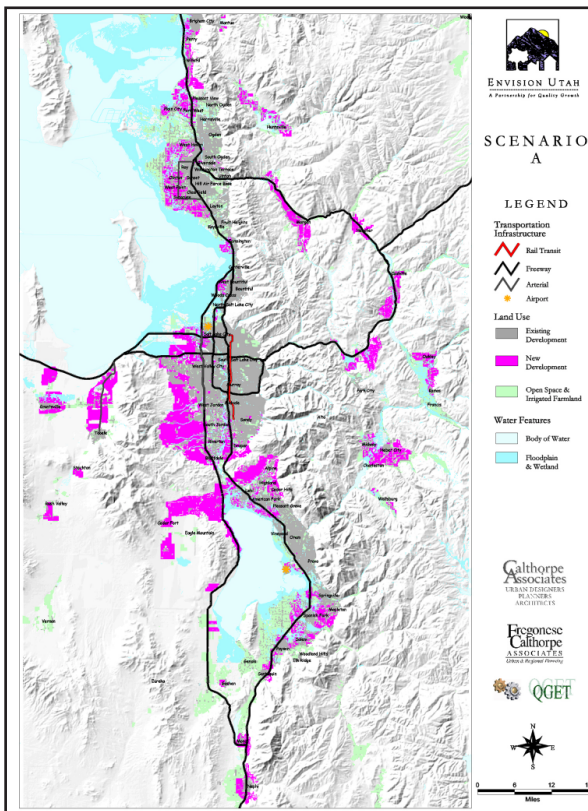
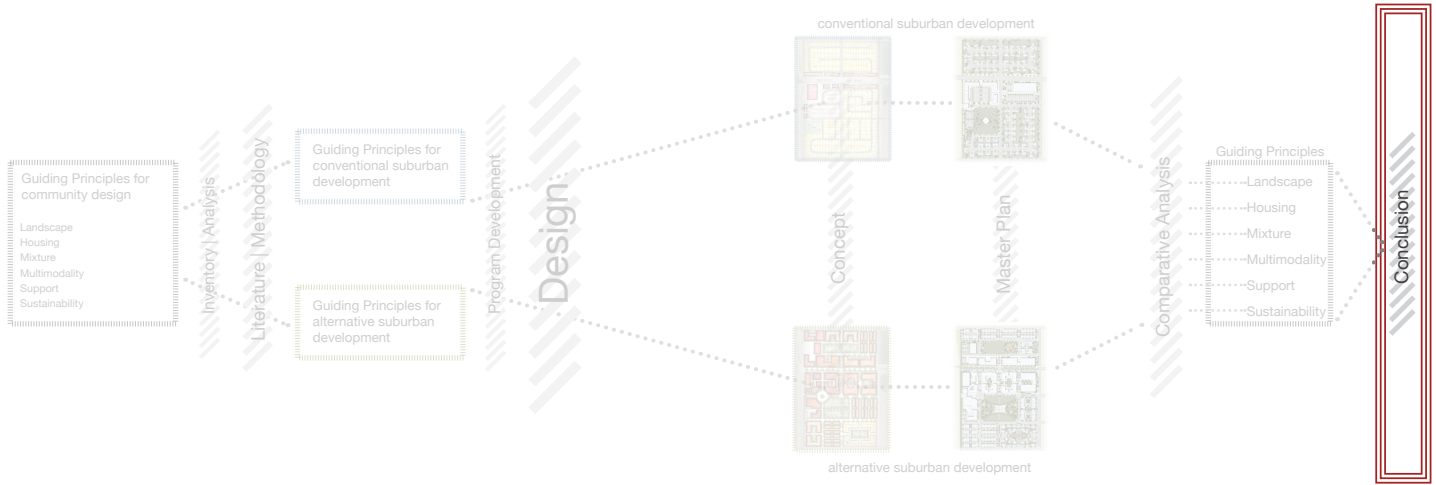


Figure 3.19 - Envision Utah Growth Scenarios: Through surveys, newspapers, and community meetings, citizens of the Wasatch Front Region selected a growth scenario between scenario C and D, which represent the most dense development (Envision Utah, 2000).





Conclusion

Will suburbia continue on as normal? People are beginning to recognize that a different approach of development is needed.

Conclusion

This project provides one example of an alternative for suburban growth. When development occurs in suburban areas, planners and developers must work together to create a place that will benefit the community and not exacerbate the already existing issues and problems associated with suburban sprawl.

Guiding principles allow for designs to be compared using similar criteria. Methods for this analysis include using the existing standards for neighborhood development, alternative methods for suburban design, and new sustainable practices. The guiding principles include:

Landscape

Housing

Mixture

Multimodality

Support

Sustainability

Educating the public and recommending alternatives to sprawl will be effective as residences are provided with great communities to live in. Alternative methods also require residents to accept a different form of suburbia. This shift in thinking has begun to take an effect in some areas of the United States.

Recently, in the Wasatch Front region of Utah, a new development known as Daybreak has become extremely successful despite a downturn in the housing market. Daybreak, located in southern Salt Lake County, is known for incorporating similar principles found in the alternative suburban development plan proposal in this project. The site features public open space throughout the site, diversity of housing, mixture of uses, connectivity, support to the surrounding context with dense housing, and sustainable ecosystem services with large native areas, water wise plant species, and alternative stormwater management practices as seen in figure 3.20 and figure 3.21.



Figure 3.20 - Daybreak, Utah, entry native plantings. author, 2009.

Daybreak was made possible after the establishment of Envision Utah, a regional effort to promote green benchmarks for new development. Envision Utah has had a positive impact in the region, both with educating the community and promoting alternatives to conventional suburban development.

Envision Utah has laid the groundwork for a development like the proposed alternative suburban development in this project to become a reality. As more of these developments are built and more evaluation is undertaken, suburbia could begin to change.

Future

Suburbia was created as a refuge and a retreat from dense urban living. It was magnified and

boomed after the Second World War. Policies such as the Federal Housing Administration and Veterans Administration loan programs offered mortgages for over eleven million new homes. Sprawl development patterns were also made easier with the creation of an interstate system that included 41,000 miles of new roadway and neglected mass transit systems. People enjoyed moving further from the city in less expensive homes, and commuting to places of employment. Places of shopping and employment soon followed people from the city center to the suburbs (Duany 2000, 8). Just as this problem was not created overnight, the solution will take time.

“James Howard Kunstler, the acerbic urban commentator and novelist, says we are at the end of the suburban phase of the American lifestyle



Figure 3.21 - Daybreak, Utah, demonstration garden. author, 2009.

and suggests there are three possible destinies for suburbs: slums, salvage yards, or ruins. Christopher Leinberger says that a “mid-20th century structural change converted real estate development into a modular, formula-driven industry, based upon access and parking of automobiles and trucks” which he refers to as ‘drivable sub-urbanism.’ And that’s not a good thing.” (Berens 2010). Although some critics believe that the suburbia era is over, people continue to move to the suburbs to enjoy less expensive homes and more land.

Others in recent articles and presentations continue to argue about the future of suburban development in America. Developers are seeing a change in market trends for more energy efficient buildings with the increased popularity of the LEED evaluating system. The Sustainable Sites Initiative, modeled after the LEED system, is currently going through case study evaluations. This system is designed to evaluate individual sites and developments regardless of buildings (Sustainable, 2009).

It is apparent that suburbia needs to transform and adapt if it will continue to be the prime location for residential development. All of these changes taking place are setting the stage for changes in the way of the suburban America lifestyle. New design alternatives will contribute to the mending of suburban sprawl. It is an exciting time to be a Landscape Architect and only time will tell the future of suburban America.

Lessons

I decided to study landscape architecture after growing up in the home building business and working in the land development industry. Naturally, I was attracted to the study of land planning and suburban development. This interest led me to further research this topic. I have learned more about the complexities involved

in suburban development. It has become more apparent to me that developers build suburban developments in a way that is most cost-efficient and marketable. After all, developers are in the position to make money, not to waste it on things that are not marketable.

When this study started, I was convinced everything that was done in conventional suburban development was bad and evil. However, through my research and countless hours of contemplating these issues, I have come to a better understanding of why things are done and that maybe not all of them are harmful. I am not saying that everything that is done is perfect and great, but I have a new understanding of the practices of suburban land development. The information that has been gained and documented through this analysis will be beneficial not only to Landscape Architects but to those interested in land development. Although I originally intended on solving all of the problems in suburbia, I have learned that there is not one correct answer but multiple opportunities to mend suburban sprawl.

There are opportunities for people to further the research that I have performed. One option I feel that would be beneficial is to conduct a financial analysis on the actual cost of these two development scenarios. This would further validate or shed new light on whether these forms of development are a viable option for developers. Other possibilities would be to apply the same guiding principles to a variety of sites of different sizes and regions. Again, the purpose would be to analyze them as viable options for developers.

I am thankful for the opportunity that I had to work with my committee, especially my major professor William (Chip) Winslow, on my project. I hope to continue this research and knowledge into my career in landscape architecture.

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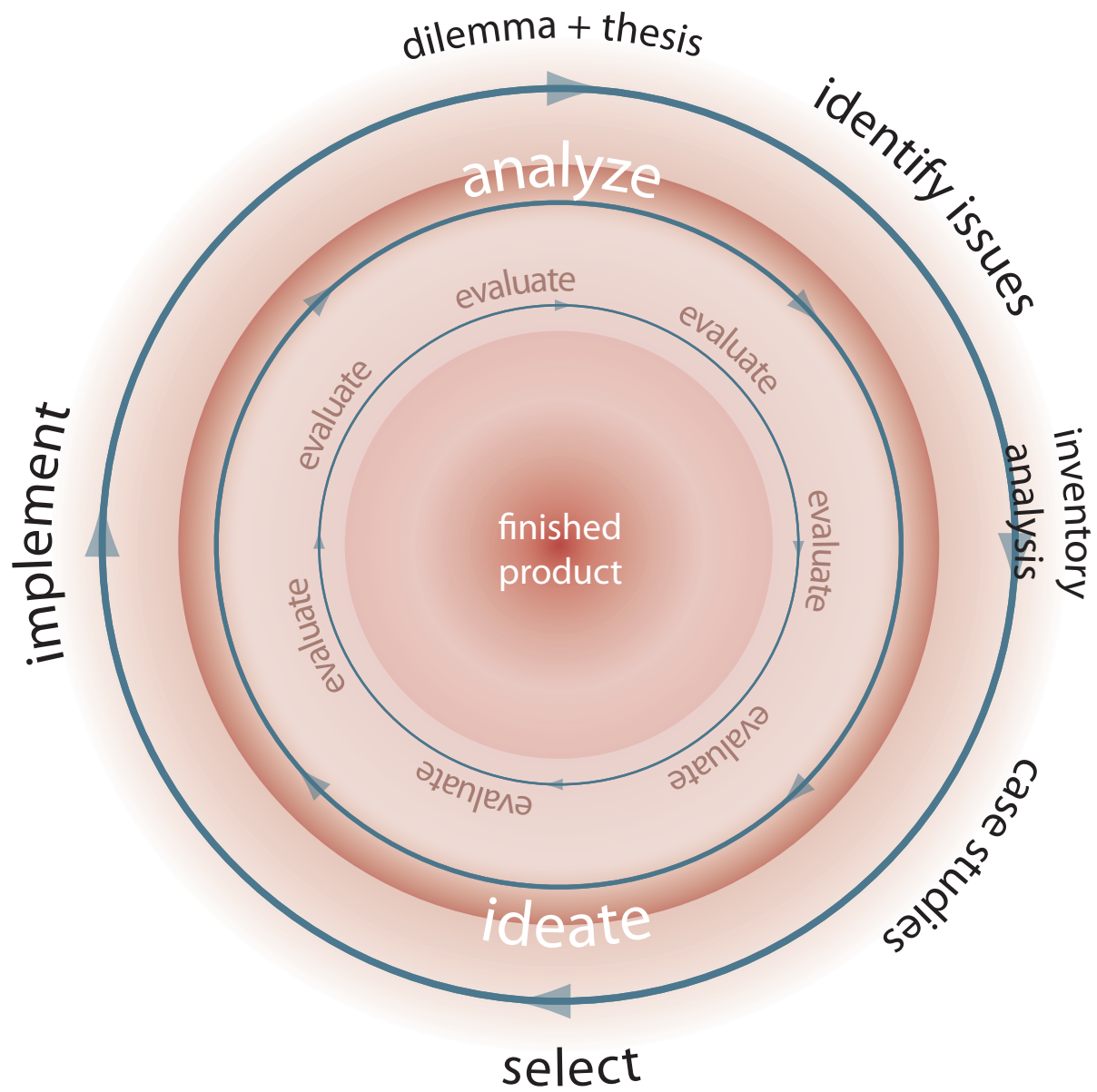
Appendices

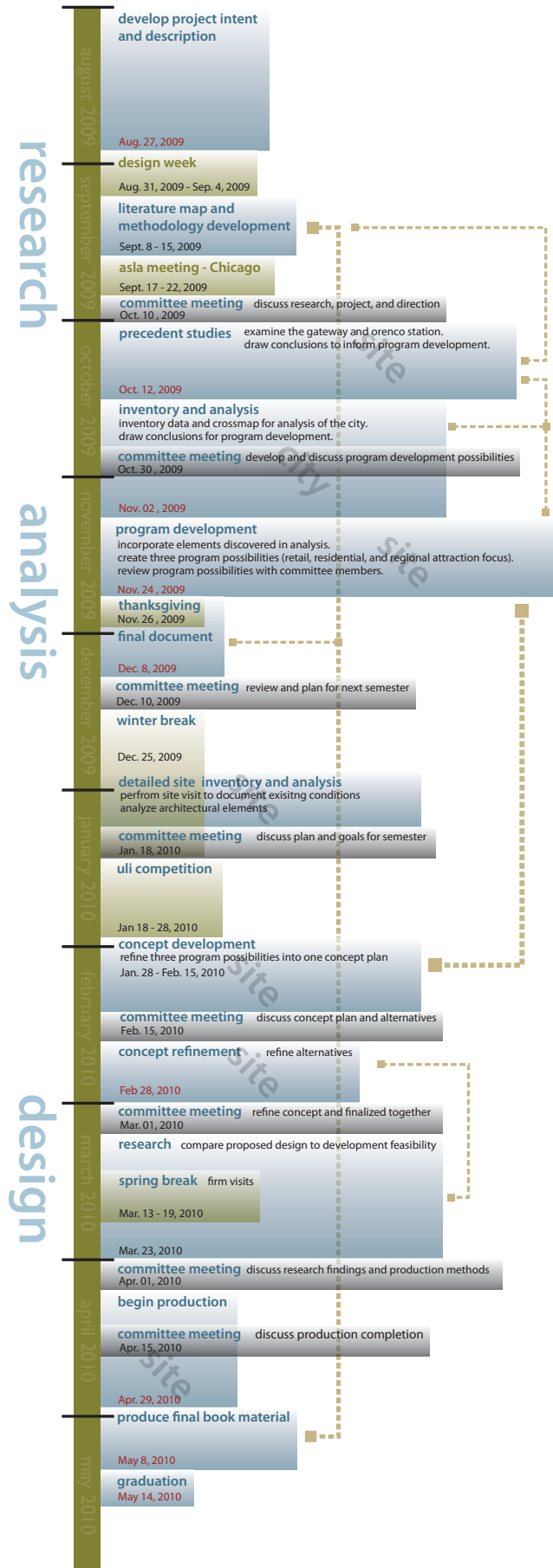
Appendix A: Process Diagram

Appendix B: Precedent Studies

Appendix C: Inventory Maps

Appendix A:
Process diagram and timeline





Appendix B: Precedent Studies

Precedent studies for the purpose of analyzing development techniques and practices were conducted to understand program possibilities and design opportunities. Studies are analyzed according to the success of the goals of this project.

- *Connect Suburban Areas*

- *Create an Entrance*

- *Establish a Sense of Place*

The following projects were selected for similar regional context, objectives, and outcomes. Although the projects differ in development focus, both of them provide valuable insight into program possibilities for mending suburban sprawl.

Both projects provide different perspectives into methods and principles used in creating livable centers. The Gateway, although in an urban context, maximized retail usage as its main attraction and anchor. In contrast, Orenco Station is mainly a residential community, mixing densities creating a livable center.

Also, both projects are located in close proximity to rail connections. This important similarity provides insight into development patterns to be used at transit oriented communities.

the gateway

location: salt lake city, utah

completed: 2001

size: 30 acres

prominent uses: retail, office, residential

project background

The Gateway is a 30-acre brownfield site that has been transformed into a downtown mixed-use development. The site is part of a redevelopment project of 650 acres called the Gateway District (EPA).

The Gateway was completed in November of 2001. The site was developed by Boyer Company who invested \$375 million. When completed the site included two million square feet of shops, restaurants, office space, and housing. Major attractions include 12-screen movie theater, children's museum, and a planetarium (EPA). The site is also adjacent to the Energy Solutions Arena, home to the Utah Jazz NBA basketball team.

The Gateway is home to numerous events and activities including the 2002 Winter Olympic Games. The redevelopment of this area has changed the area in a positive way and has

become a catalyst for future mixed-use projects.

transit connection

Multiple modes of transportations to access the Gateway are one of the reasons that this site is successful. As illustrated in figure 4.2, the site is located in close proximity to major transit options. Pedestrians can access the site by foot, bike, bus, car, or rail. Located in downtown Salt Lake City, the Gateway is conveniently accessible to visitors.

The gateway has one light rail stop called TRAX that directly serves the site. Other stops are located within a few city blocks that serve the downtown area. The transit hub which serves both the commuter rail line called Frontrunner, TRAX, and buses is located within two city blocks from the site. The rail connection for the Gateway is an asset as it serves visitors from the entire downtown area and other communities to the north.

Visitors and residences have close access to interstate 15 which connects the site to the region to both the north and the south. This close proximity to a major interstate system makes the Gateway easily accessible for vehicular traffic.



Figure 4.1 - The Gateway ↑

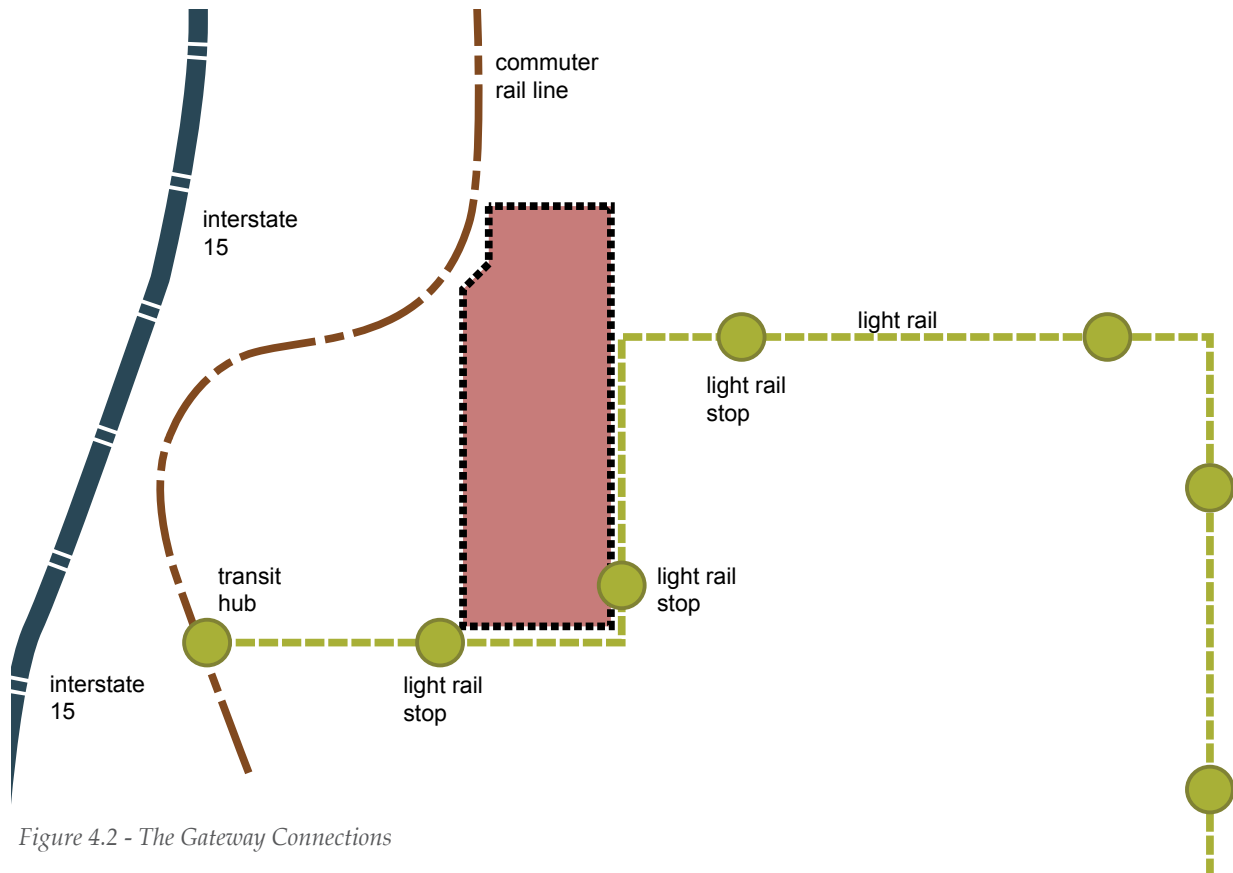


Figure 4.2 - The Gateway Connections

uses

General site uses are illustrated in figure 4.3. The first two levels of most buildings are retail, even on the office and residential buildings. Most of the uses take place on two levels, the main level and the promenade level. Retail and restaurants are mostly centered around the Olympic Legacy Plaza. The plaza is the heart of activity for the site. A fountain spray park in the center is used throughout the summer and the outdoor gas powered firepits are used in the winter. During the day and night the retail shops are busy with customers and in the night the restaurants come to life with activity. The dynamic of usage in this dense of a place keeps the plaza vibrant throughout the day.

Residential towers are complimented with retail and office on the first floors. There are 350 apartments and 150 condominiums adjacent to retail and office. Of the 500 units, 156 of them are designated for low to moderate incomes (EPA). The mix of housing options attempts to make housing available for a range of residences. The success of the housing is proved by minimal units available for rent or purchase.

The anchor of the Movie Theater and office space

also helps to keep a flow of activity into the site. During the business day, offices are busy and the lunch hour provides many opportunities for dining and shopping. The Movie Theater provides a steady flow of customers which also helps the retail shops and restaurants with activity.

pedestrian connection

Circulation is illustrated in figure 4.5. The site is easily accessible by vehicle with a large amount of underground and open parking. Tree lined streets, wide sidewalks, narrow streets and on street parking focus the attention in the site to the pedestrian. Rio Grande Street bisects the site but it's impact is minimized by a narrow street width, on street parking, cross walks, and a change in material. This street is used mainly for service access and passenger drop-off.

The Rio Grande Promenade provides 2nd floor access over the street level to shops and restaurants as shown in figure 3.8. The promenade helps to minimize pedestrian and vehicular interaction when crossing the street. It also provides more street front retail for the shops on the second floor. This provides another level of pedestrian interaction.



Figure 4.3 - The Gateway uses →



Figure 4.4 - The Gateway circulation →

conclusion

The Gateway has been a successful mixed-use development for downtown Salt Lake City. Factors that contribute to its success are:

- Accessibility by multiple modes of transportation.
- Pedestrian oriented site features.
- Mix of diverse uses.
- Created identity with architecture and land use.

orengo station

location: hillsboro, oregon

completed: begun in 1999

size: 190 acres

prominent uses: residential, office, retail

project background

Orengo Station is located in Hillsboro, a suburb of Portland, Oregon. It is connected to downtown Portland via the Light Rail Transit System (known as MAX). It was developed by Pacific Realty Associates and a multidisciplinary team. The team consisted of Fletcher Farr Ayotte (architecture and planning), Costa Pacific Homes (residential developer), Walker & Macy (landscape architects), Lee Iverson (residential architect), and Alpha Engineering (civil engineers). The master plan was created for the 190 acre parcel of land adjacent to the light rail stop (Fletcher, 2008). The concept or “backbone” as mentioned by FFA, is the Main Street Promenade leading from the station platform to the town center core. Pedestrian friendly design and amenities were included to create a pedestrian

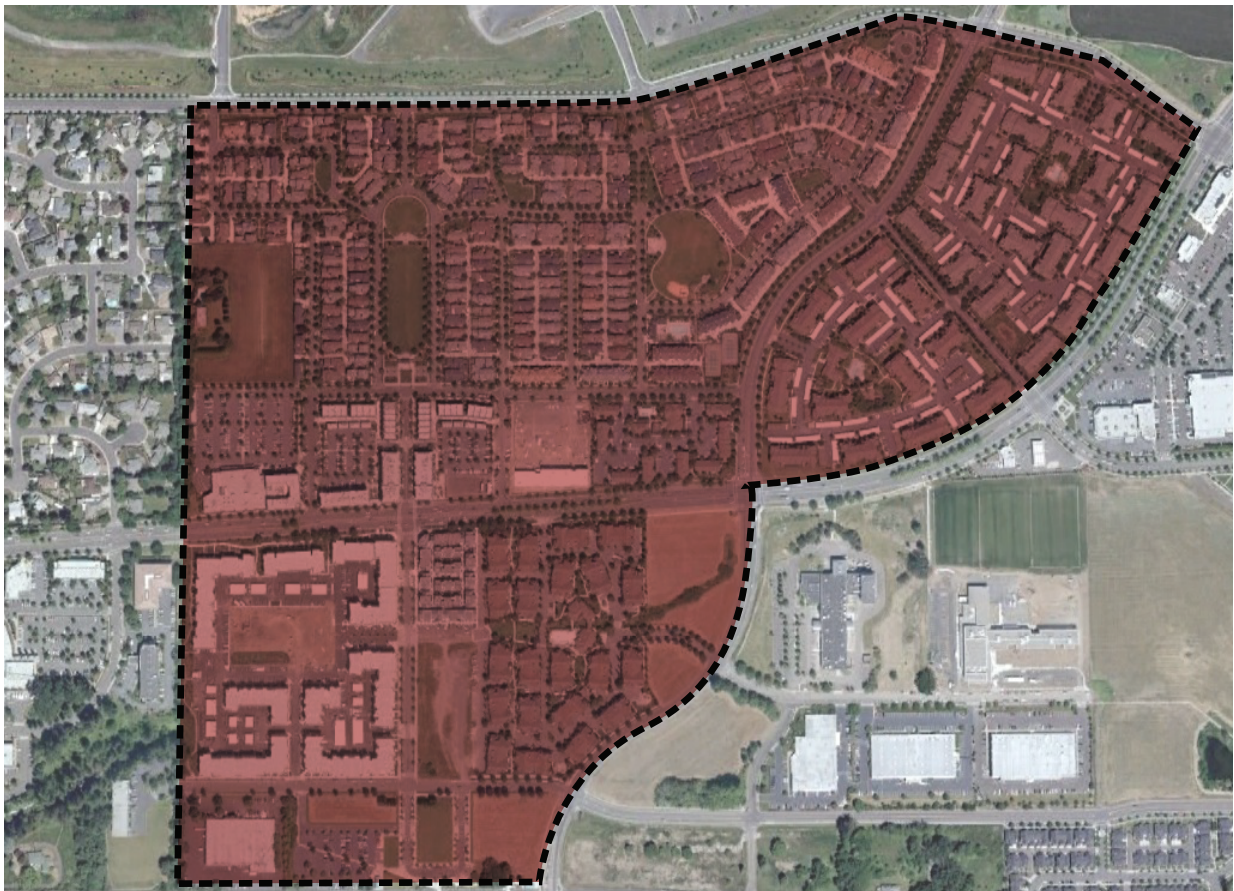


Figure 4.5 - Orengo Station

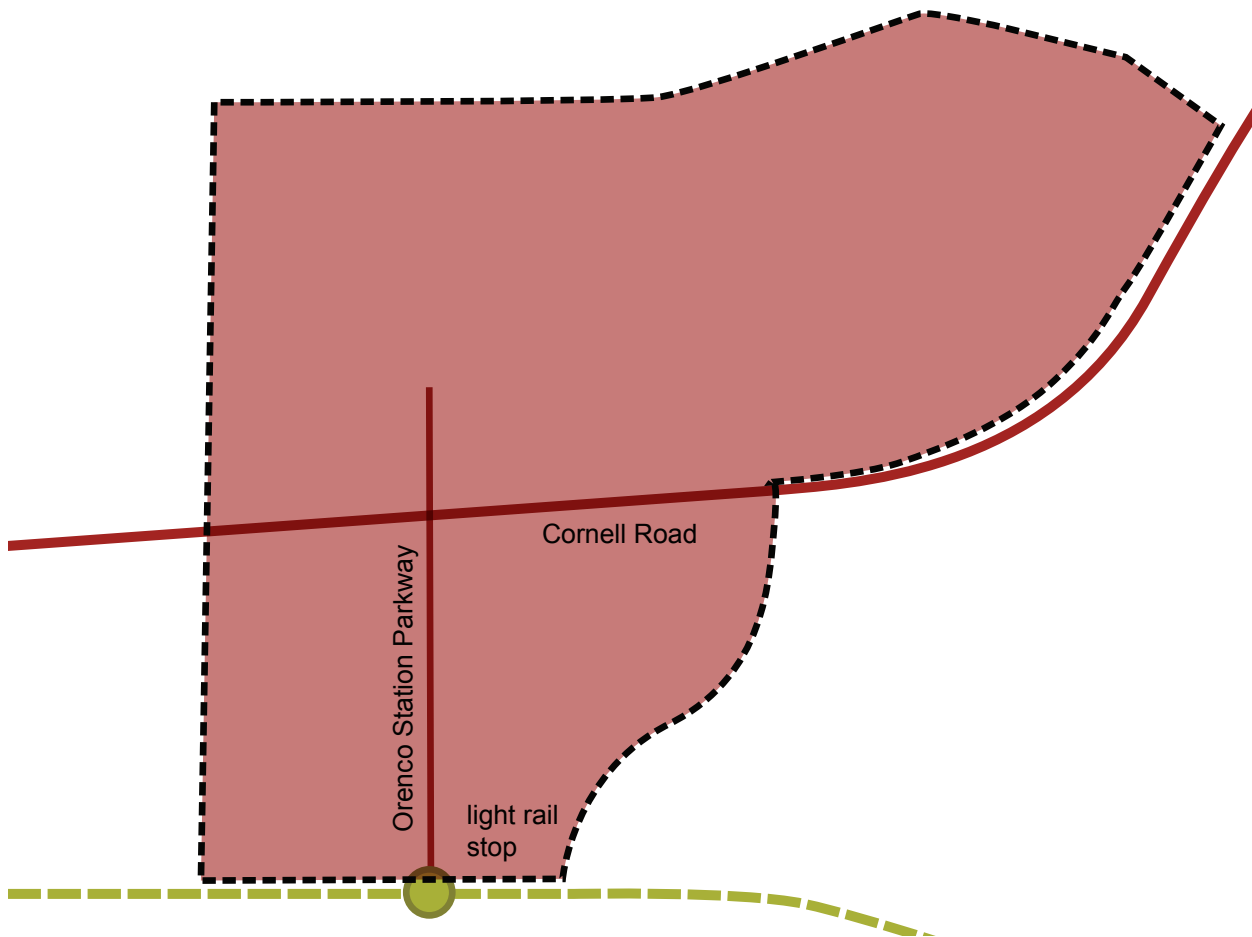


dominated environment (Fletcher, 2008). In contrast to the Gatewat development in Utah, Orenco station is primarily focused on residential living with limited office and retail amenities. Attractions at Orenco Station are focused on suburban living in a more dense than usual setting.

transit connection

The site is conveniently located just off of a MAX commuter rail station that connects to downtown Portland, Oregon and the majority of the region. This feature is a major success factor for this site, since it ties together apparent positive aspects of suburban living with the accessibility of urban living. This is illustrated in figure 4.6

There is a major intersection of Cornell Road and Orenco Station Parkway in the center of the site. This vehicular connection allows easy access to the site for residences and visitors. But, the major intersection does bisect the site and negatively effect the pedestrian experience at street level as shown in figure 4.6.



↑ Figure 4.6 - Orenco Station circulation

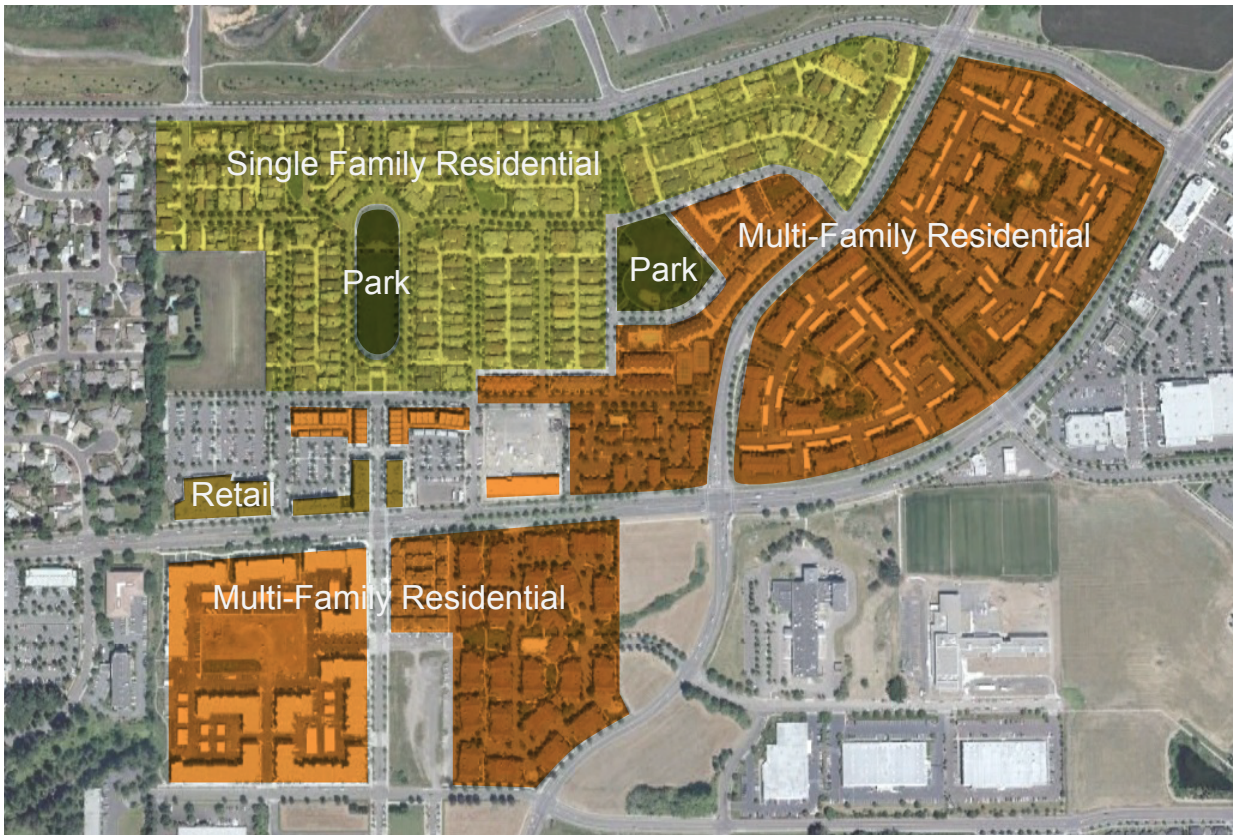


Figure 4.7 - Orenco Station uses ↑

uses

As illustrated in figure 4.7 the primary uses on the site are residential with a mix of single and multi-family structures. The single family homes are placed on small lots and placed close together. Mixed-family units are comprised of townhouses, condos, and apartments. Different housing types were built by different builders therefore each type has unique characteristics.

At the intersection of Cornell Road and Orenco Station Parkway retail and office space is located. Although there is minimal retail space on the site. There are other retail options located in close proximity via automobile or rail.

pedestrian connection

On site pedestrians are the focus with wide sidewalks, narrow roads and on street parking. although the intersection of Cornell Road and Orenco Station Parkway is a negative pedestrian experience, the majority of the site accommodates the pedestrian well

conclusion

Orenco Station is a successful center in a suburban area. Factors that contribute to its success are:

- Close proximity to a commuter rail line.
- Organization of residential housing into neighborhoods of density.
- Optimum open space both in parks and on sidewalks contribute the pedestrian experience.
- Small retail center that provides minimum needs for residences.

Appendix C: Inventory maps

Population Density Plan

General Development Plan

Accessibility Plan

Natural Plan

Open Space Plan

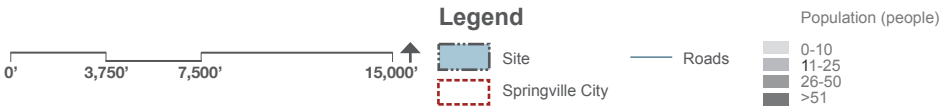
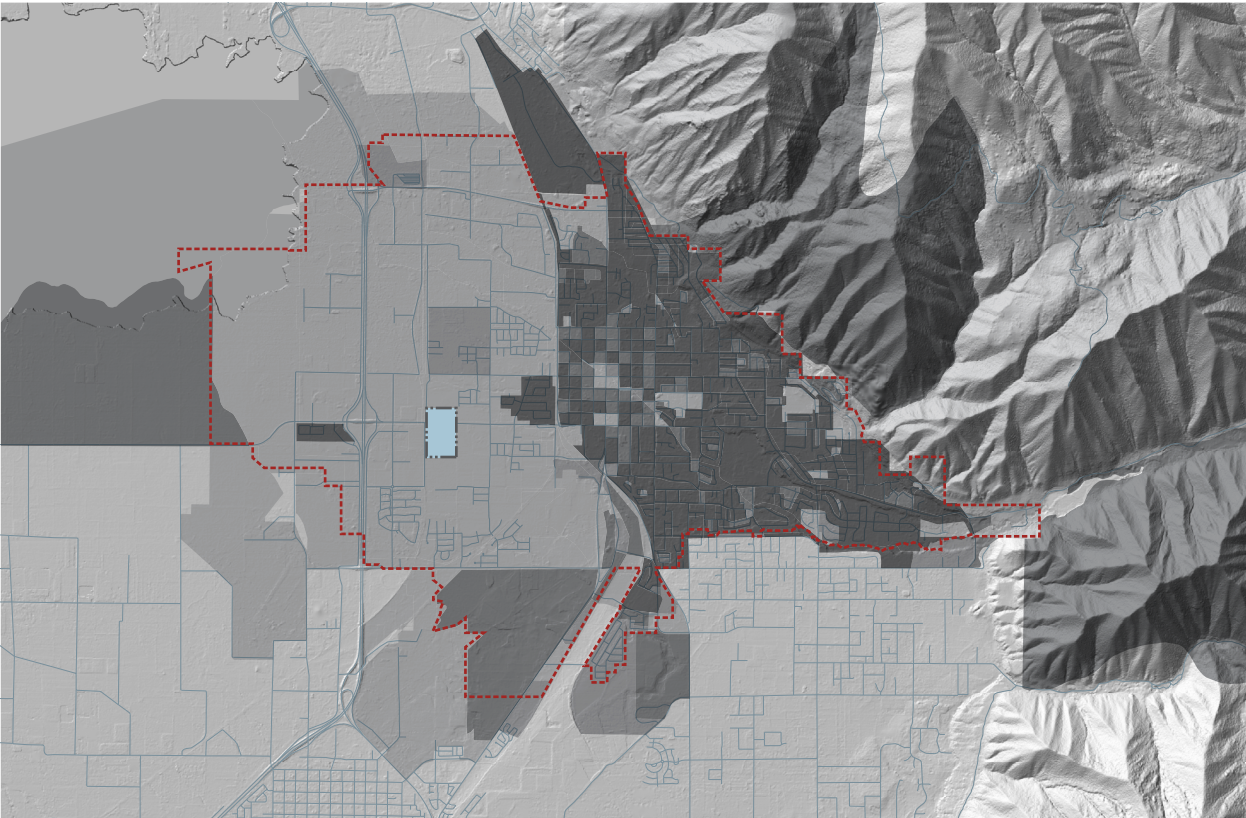
Cultural Plan

Population density plan

- Low (0-10)*
- Medium (11-25)*
- High (26-50)*
- Dense (>51)*

Conclusions

Dense, single family residential development is focused near the historic core of the city. Sprawled and disconnected single family residential developments are occurring in close proximity of the site.



General development plan

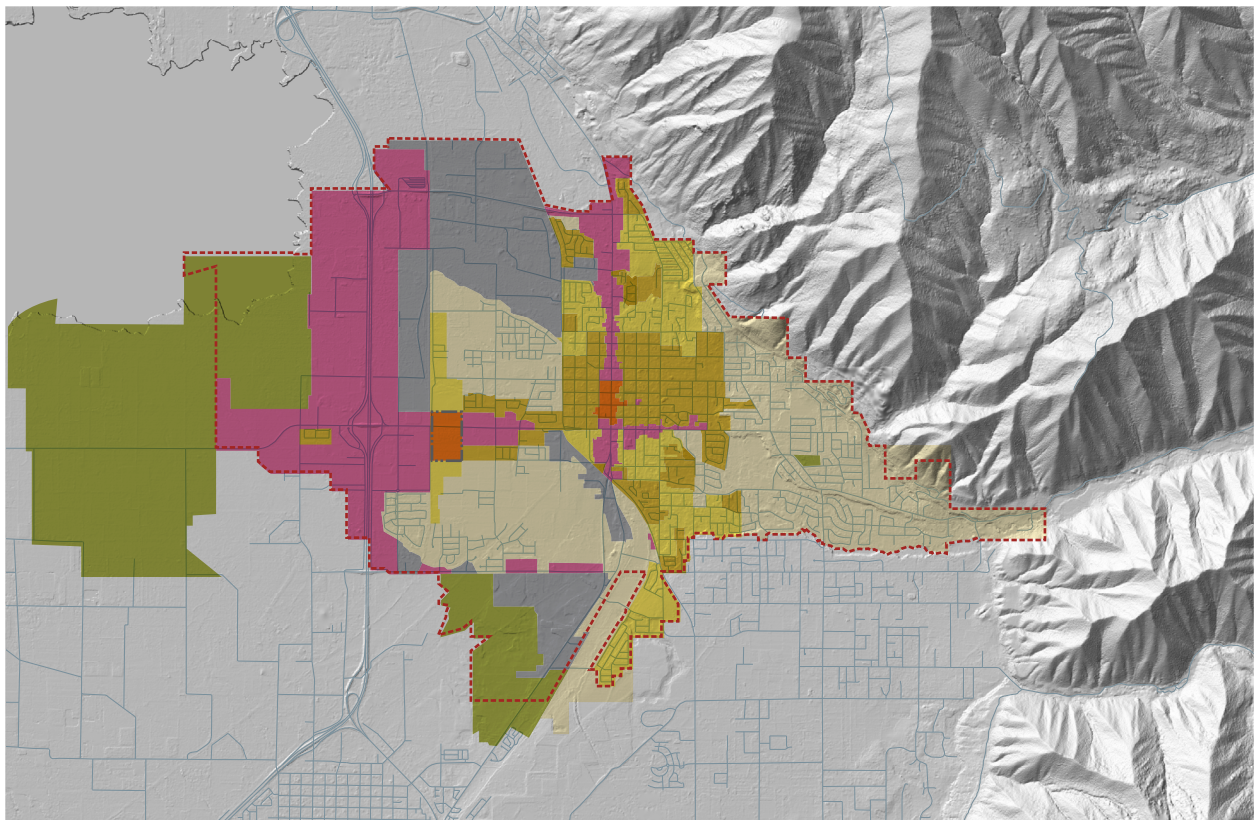
agriculture

residential

commercial/retail

Conclusions

The city provides an example of what has happened to small towns. There is a dense downtown with converted farmland into sprawled development. As expected the most dense areas are located near the historic downtown, adjacent to commercial areas. There are large commercial areas surrounding the interstate corridor. The site is proposed for mixed-use development. This provides an opportunity to extend the same development patterns of downtown to the site.



Accessibility plan

roadways

interstates

public transit

Conclusions

Multiple modes of transportation are present in or near the site. Opportunities include close proximity to the interstate, a highway, and a future commuter rail station.

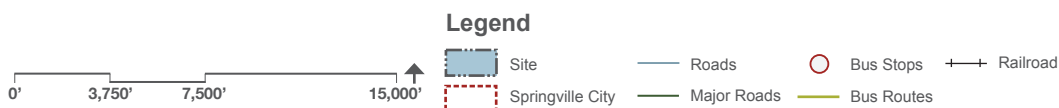
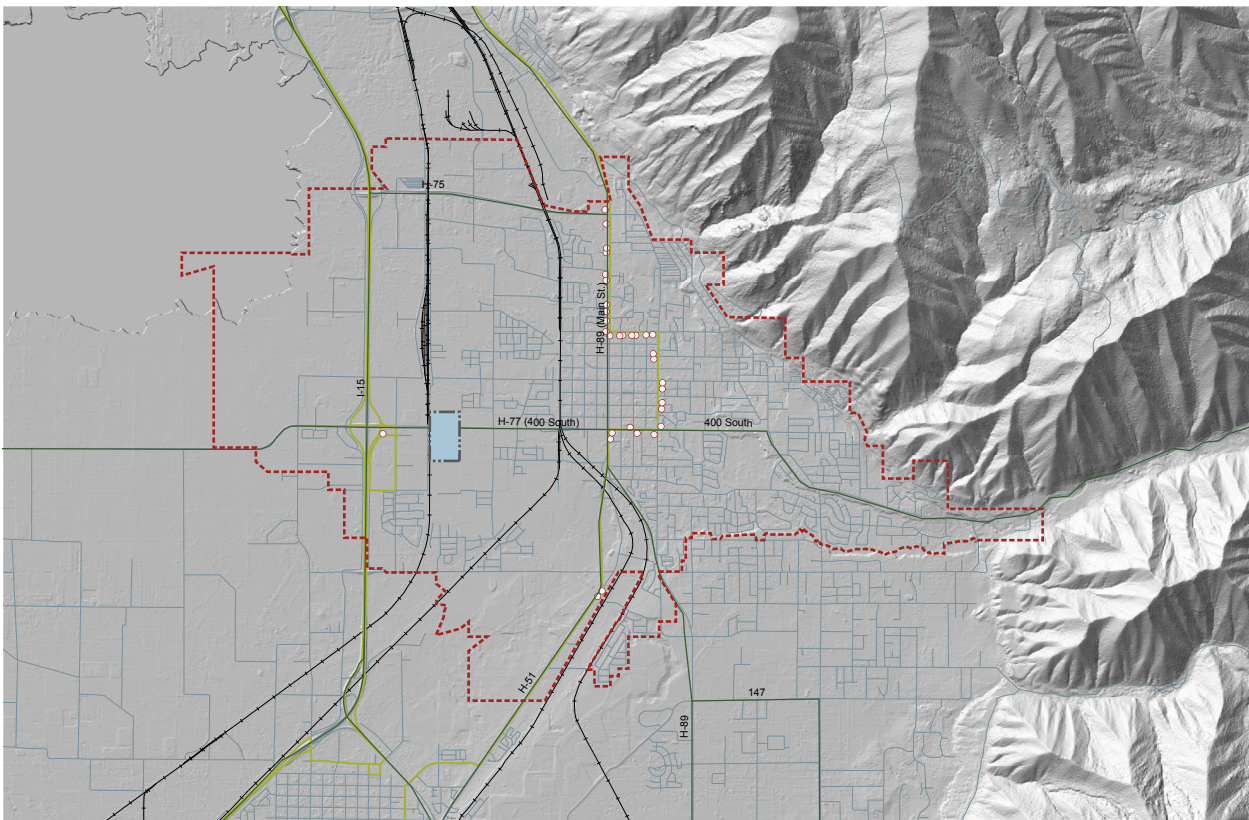
The site is located near an on/off ramp to Interstate 15. Close proximity to the interstate provides convenient access to the region.

Highway 77 (400 South) runs through the site providing access to the downtown. Highway 77 is the main entrance into the city from Interstate 15. Most

residences and visitors will use this corridor as the means of access into the city. This corridor is important in setting the identity for the city.

Existing rail adjacent to the site provides future opportunities for commuter rail access and a transit stop. This connection to the region will allow for more residences and visitors to experience this site.

An existing bus route system is near the site and could be expanded to provide more access to the future transit stop.



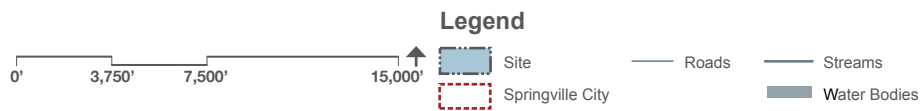
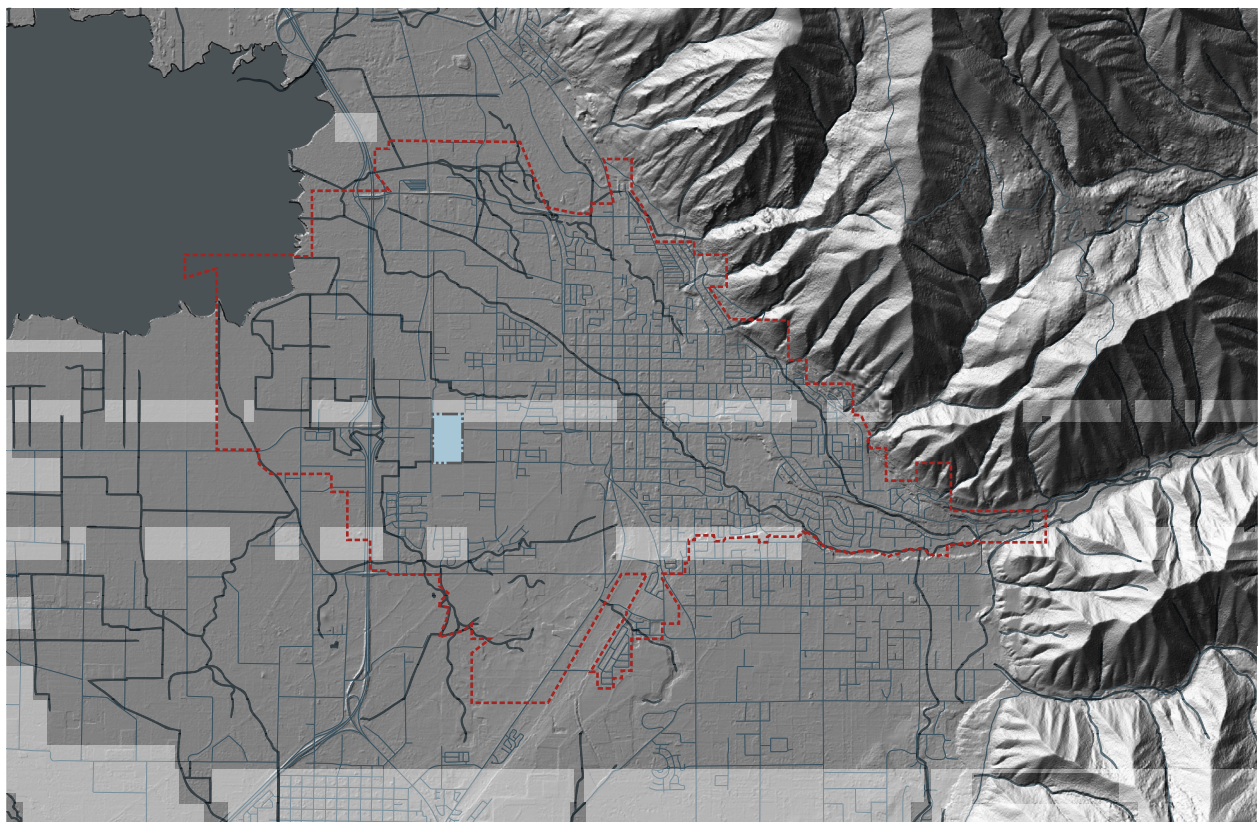
Natural plan

streams

waterbodies

Conclusions

Provo Bay, which is part of Utah Lake, is located to the northeast of Springville city. Streams and creeks all drain to this water body. Although no streams intersect the site, there are multiple opportunities to connect people to these via trails and roadways.



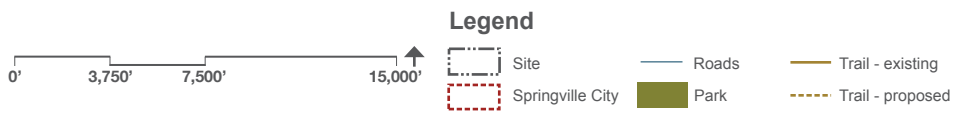
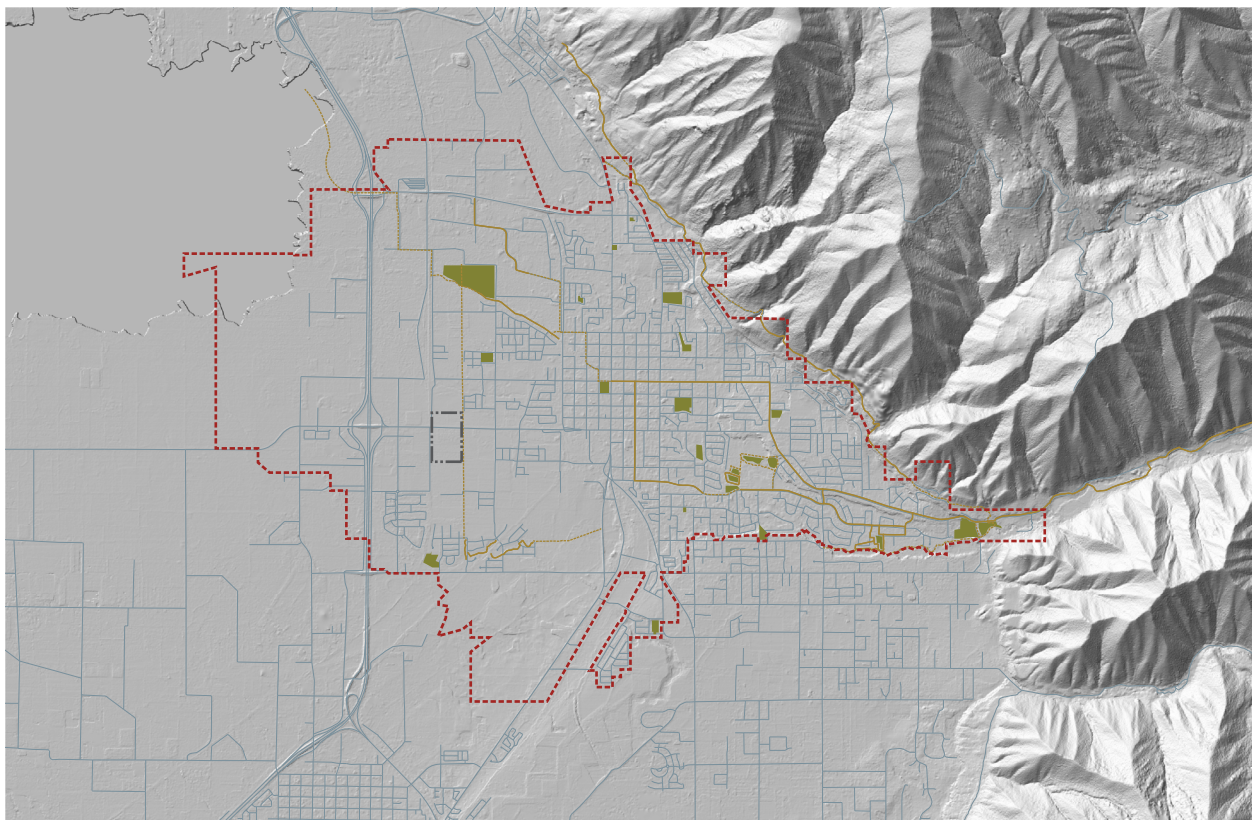
Open space plan

parks

trails

Conclusions

There are a number of many small parks throughout the city. Most of these parks are located near the established, dense part of the city. New parks and open space are lacking near the proposed site and are needed for newly added residential areas. Existing and proposed trails connect the majority of parks together. There is a proposed trail that bisects the site running in a north south direction. This is a great opportunity to connect the site to other parks in the city.



Cultural Plan

buildings

schools

religious

Conclusions

There currently is a large number of schools located in close proximity to downtown along with many churches. Also the library and post office are located downtown. These findings were typical for the density of the city.

