Salt Lake City

STREET AND INTERSECTION TYPOLOGIES DESIGN GUIDE

CONTENTS

INTRODUCTION

DESIGN DICTATES BEHAVIOR.

Whether someone chooses to walk, ride a bike, drive, or ride transit; where one lives; how fast one drives; how accessible jobs are; and where businesses choose to invest are determined by the built environment. However, the urban environment is not naturally-occurring. Our individual and collective habits and behaviors are the cumulative result of the past and ongoing political, engineering, planning, and design policies and decisions that are manifest in the design of everything around us.

People in Salt Lake City want streets that are safe for all users and are an asset to neighborhoods and the community at large. Smaller, safer, and slower streets are better for everyone. Moreover, the design of a street communicates to drivers the speed at which they should be traveling. Consider sections of 900 East and 2100 South in Salt Lake City: both have posted speed limits of 30 miles per hour, but the design of 900 East is more likely to encourage a slower travel speed than the design of 2100 South. The implementation of this Guide will result in communities that are safer, more comfortable, more resilient, less reliant on motor vehicles, and more focused on the needs of all people.

ELEVATING PEOPLE AND PLACE

People are the most important asset of any community. Indeed, without people, there is no community. According to the National Association of City Transportation Officials, streets often occupy roughly 80% of a city's developed public space. However, streets frequently lack safe spaces for people to walk, ride a bicycle, take transit, sit, dine, socialize, or otherwise participate in life outside of an automobile[1].

1. *National Association of City Transportation Officials Urban Street Design Guide, 2013*

I. INTRODUCTION

The Salt Lake City Street and Intersection Typologies Guide ("Guide") incorporates recommendations from Salt Lake City master plans, zoning ordinances, design guides, and policies that currently guide the design of the built environment. It also relies on best practices and research in transportation planning, urban design, and street life from around the world. This Guide proposes changes to the look and feel of streets in Salt Lake City to better align them with the community contexts that surround them.

These proposed changes may involve some tradeoffs. For instance, the Guide may recommend lane reductions on some streets. With fewer travel lanes, people may drive more slowly, may choose alternative routes, or may choose not to drive. The Guide may recommend repurposing some on-street parking to create more green spaces or places for people to sit. With less parking, people often opt to use different transportation options, to look more carefully for a spot, or to pay for more convenient parking. These behavioral changes often take time, and this Guide includes intentional designs, policies, and outcomes that can help make these changes a reality, based on the overarching goal of safer and more just communities.

The recommendations in this Guide reflect thousands of comments and requests made by City residents over several decades. For many years, people in Salt Lake City have asked for safer and slower streets, more transportation choices, and a better quality of life. This Guide recognizes these many years of public feedback, and acknowledges the changes and tradeoffs that will be necessary in order to achieve more livable streets. It should also be noted that there is currently no implementation schedule or budget.

BENEFITS OF PEOPLE-FRIENDLY STREETS

Creating people-friendly streets results in a wide range of economic, health, and community benefits. Streets designed for people can result in higher retail sales compared to less walkable areas. When people can easily and safely walk to everyday destinations and to transit, they have better access to job and education opportunities, which improves the overall economy. Redesigning streets to prioritize people can result in improved safety for people walking and bicycling by reducing vehicle speeds and the severity of crashes, and encouraging even more walking and bicycling, which improves social, physical, and mental health. Implementing the typology designs found in this Guide can help Salt Lake City achieve these positive outcomes.

PURPOSE

The Salt Lake City Street and Intersection Typologies Design Guide marries transportation and land use and refocuses the design of streets on people. The Guide creates new definitions and designs for 17 distinct kinds (or typologies) of streets, provided in Chapter 2, improving on traditional street classifications (such as "arterial" or "collector" streets). The Guide assigns a typology to each of the 8,400 public street segments within city limits (see Salt Lake City's Typologies webpage for a map of the typologies). Design guidance for safer intersections is included in Chapter 3.

The designs proposed in this Guide identify opportunities for reassigning the existing space within the city's rights-of-way and achieving the highest and best use of these critical public assets. For example, the space that is currently dedicated for parking or travel lanes could become wider park strips and healthier trees, transit stops, light rail and bus lanes, bicycle lanes and parking areas, wider sidewalks, seating areas, and other essential street features. Depending on land use, transportation needs, and public demand, some streets may be focused on sitting and staying, while others may prioritize moving people and goods. The goal is that all streets will include space for all people and all needs.

CONTEXT AND FUNCTION

All 17 street typologies are designed based on three critical criteria:

1. Land use (five generalized place types);
2. Transportation demand; and,
3. Five critical functions of every public right-of-way.

PLACE TYPES

Streets and intersections should look and function differently depending on whether they are downtown, near a neighborhood grocery store, or close to schools or homes. This approach is like "zoning for streets" — setting up the framework for the right street design in the right place, but not prescribing or requiring construction within a certain amount of time.

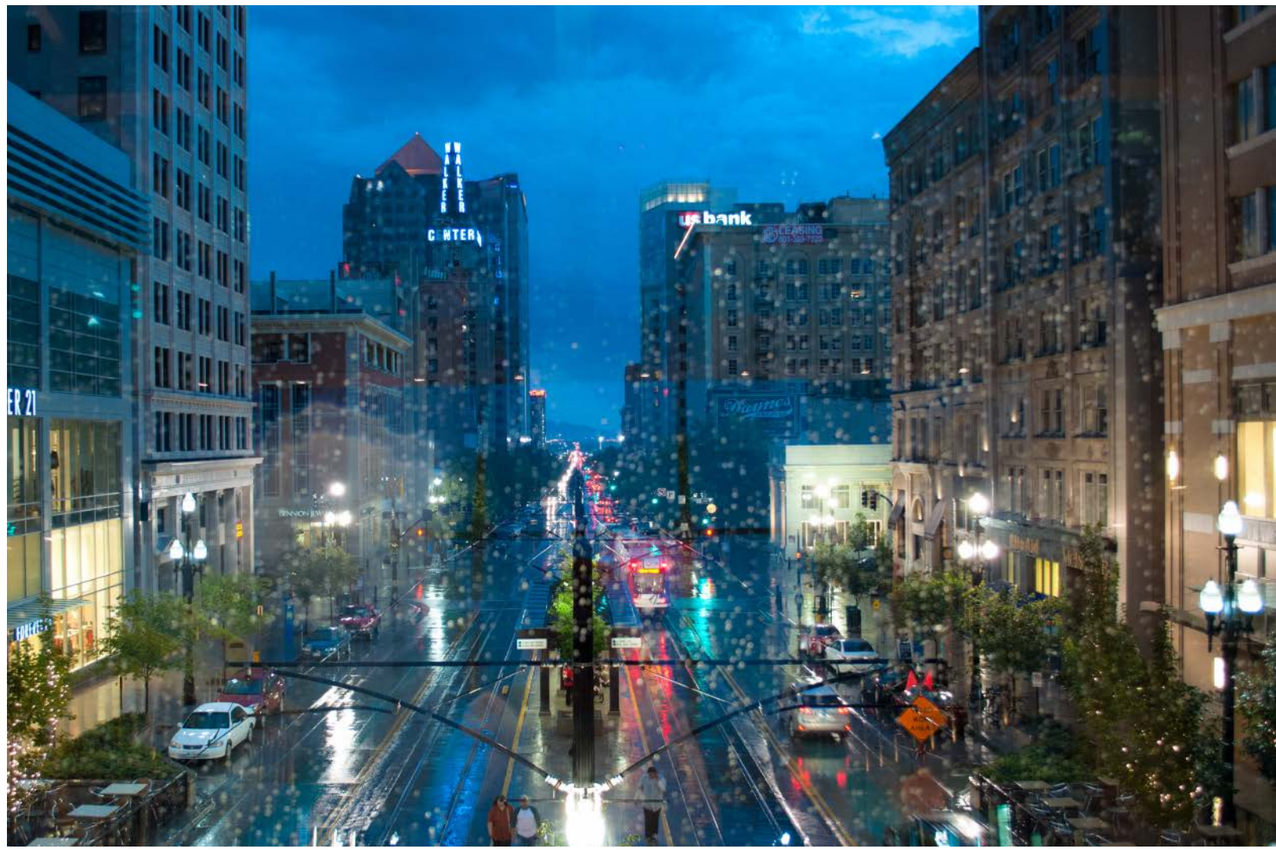
The place types described here are the foundations for the typologies. They are based on existing and proposed zoning, as well as community master plans. The place types were developed collaboratively by the project's Steering Committee, based on language developed by the Salt Lake City Planning Division.

DESTINATION DISTRICT

Destination districts, such as Downtown or the Sugar House Business District, attract people locally and from across the region. They are where jobs, homes, entertainment, restaurants, bars, and public spaces are often co-located in great abundance. They are also where people walk, bike, and ride transit most. The West Side Master Plan also identifies several new destination districts near Redwood Road that may grow in the future.

URBAN VILLAGE

Urban villages, such as the commercial core of the 9th & 9th area, are mixed-use, compact, walkable areas that meet most residents' typical needs. Land uses could include a mix of grocery stores, child care, medical offices, parks, hardware stores, and restaurants. Urban villages offer a high quality of life, are primarily local, and sometimes local and regional, attractions, serve as transportation crossroads, and are generally no more than a ten-minute walk from edge to center.

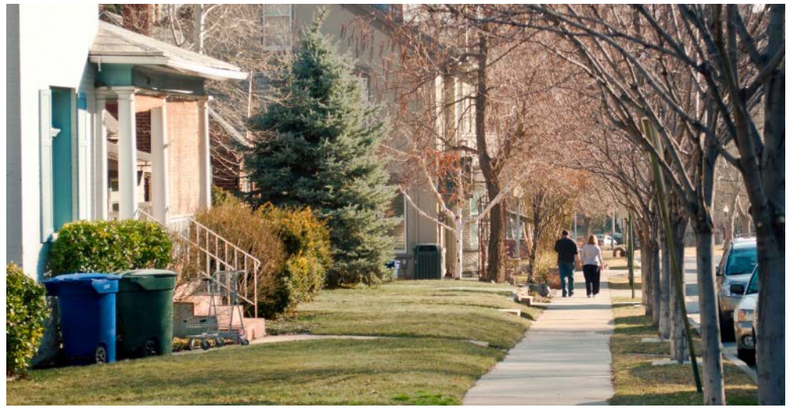


NEIGHBORHOOD

Neighborhoods are the most common place type in Salt Lake City. They are communities where people live, play, attend school, and socialize. Their predominant land uses are low or medium density homes. These areas typically do not meet all residents' daily needs. Small and local streets with frequent driveways are common. These place types were built over many decades and represent a range of architectural styles and development trends.

NEIGHBORHOOD NODE

Neighborhood nodes are small commercial areas within neighborhoods. They are typically focused at one intersection and may include coffee shops, a restaurant or two, a laundromat, and/or a small store, but not all daily needs. Many people reach them by walking and bicycling, and they provide a chance for socializing between neighbors. In Salt Lake City, examples include Oakley Street & 500 North, 1300 South & 1700 East, and 1700 South & 400 East.



INDUSTRIAL DISTRICTS AND BUSINESS PARKS

Industrial districts serve light and heavy industrial uses, typically on the west side of Salt Lake City. Business parks are primarily focused on white collar jobs and tend to be designed for people in cars rather than people walking or bicycling. They are both typically made up of large-footprint, low-lying buildings sited far away from the street, and located along major transportation corridors. These districts are frequently designed for access by large vehicles, with heavy traffic volumes during some hours of the day, and often lack infrastructure for people walking or bicycling. In some parts of the City, such as the Granary District or Research Park, these place types are gradually transitioning to urban villages or destination districts.


"YOUR DOW

TRANSPORTATION DEMAND

The typologies were designed and assigned according to the recommendations of existing transportation and land use plans, including the City's transit, walking, and bicycling master plans (see Chapter 7). The designs provide safe and comfortable space for all transportation modes so that there are real choices for every person, regardless of their age or ability.

The 17 typologies were loosely based on the traditional street classification framework of arterials (larger streets), collectors (medium-sized streets), and local (smaller streets). This ensures that an efficient transportation network of different street sizes and purposes is present. Larger streets, like the Thoroughfare typologies, tend to have fewer access points or driveways. Medium-sized streets, like Destination Streets, Urban Village Main Streets, and Neighborhood Corridors and Centers, serve people shopping, socializing, and moving through an area all at the same time. Smaller, local streets such as the Neighborhood Street typologies have more connections between the street and adjacent land uses, where people walking, bicycling, and driving may interact. This Guide's typologies were not applied to interstate highways, also known as freeways, because no properties are accessible directly from freeways. They are also designed solely to move as many people and vehicles as quickly as possible.

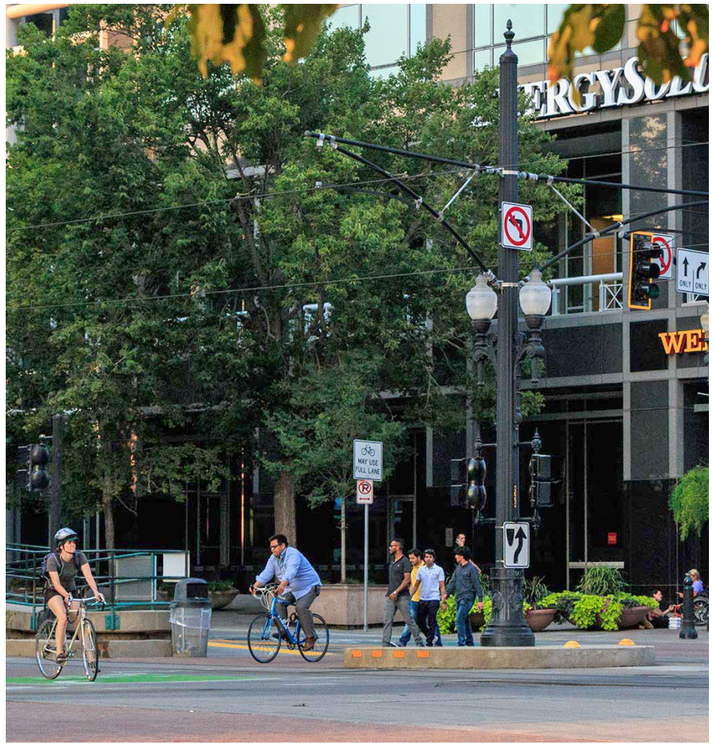
RIGHT-OF-WAY FUNCTIONS AND PRIORITIES

ALL STREETS, AS PUBLIC SPACES, SHOULD SERVE MANY FUNCTIONS.

In some places, the public right-of-way needs to prioritize vibrant and comfortable places for people to play, eat, and travel. In other places, the right-of-way may prioritize moving people and goods, whether that means people in buses and trains, people in their own cars, or goods and materials in freight vehicles. Each typology includes safe spaces intended to serve all five of the critical functions of the public right-of-way listed on these pages.

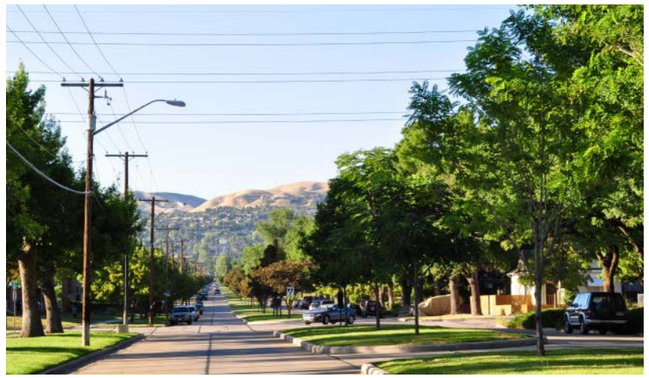
PERSON MOBILITY:

The movement of people walking, using mobility devices (wheelchairs, scooters, walkers, canes), and bicycling. When streets prioritize person mobility, they have more space dedicated to sidewalks, corners, bicycle lanes and trails, opportunities for crossing the street, and accessible routes. According to public surveys performed as this Guide was developed, this is the most important function of the public right-of-way.



GREENING:

Livability, shade, and environmental sustainability through street trees and vegetation. Streets that prioritize greening typically have more and wider landscaped park strips and medians, more street trees, planter boxes, and green stormwater infrastructure (which cleans water and reduces demand on the stormwater system).

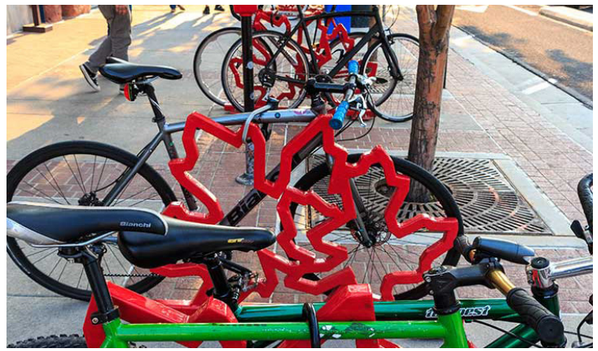


PLACEMAKING:

Creating places where people want to sit, stay, observe, participate, eat, drink, and other activities. Prioritizing placemaking focuses on activity and vibrancy. This approach redefines streets as places to be rather than just places to travel through. Features may include seating, tables, play spaces, food, and art.

CURBSIDE USES:

Spaces in the public right-of-way where people transition from moving to staying, and vice versa. This may include vehicle or bicycle parking, electric vehicle charging, bike share, bus stops, pick up and drop off zones, and freight delivery. Diverse curbside uses make the most out of right-of-way space typically dedicated only to storing motor vehicles.



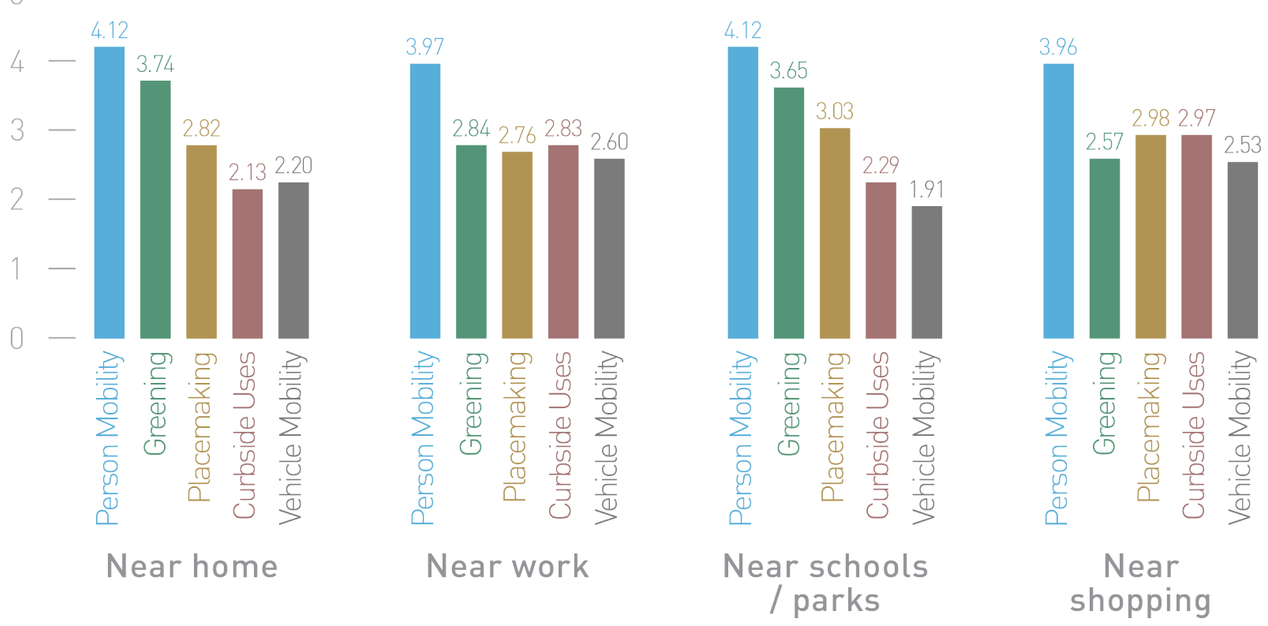
VEHICLE MOBILITY:

The movement of people and goods in vehicles, whether those vehicles are operated by a transit agency, private citizens, or delivery companies. Streets that prioritize vehicle mobility through space for travel lanes, bus lanes, light rail, and turn lanes should not sacrifice the safety of and utility for any other uses.

Some of these functions are higher priorities than others depending on the typology (and its place type and transportation demand). For example, in a Destination District that draws people from around the region (e.g., downtown Salt Lake City), people and businesses prioritize activities like sidewalk dining, people-watching, experiencing public art, and walking above driving quickly. It is a place to stay. Therefore, placemaking and person mobility are high priorities on streets in these districts. In contrast, an Industrial District is intended to serve land uses that require more freight and vehicle access, so vehicle mobility is a high priority in these areas.

Salt Lake City surveyed the public in mid-2019 to hear how they would prioritize the five right-of-way functions in different place types. A summary of which is provided on pages 82 and 83. The public prioritized person mobility above all other functions, across place types – near their homes, their place of work, shopping, or near schools or parks, person mobility was the highest priority. The chart below illustrates how the public prioritized each of the right-of-way functions based on place type (survey respondents could score each function on a score from 1 to 5, with 5 representing the highest priority and 1 representing the lowest).

Place Types' Street Function Priorities



GUIDE CONTENTS

The Guide contains the following information:

- The **Street Typology designs**, in Chapter 2
- **Recommendations for intersections**, in Chapter 3
- **General implementation recommendations**, in Chapter 4
- **Corridor implementation recommendations**, in Chapter 5
- An overview of the **typology development process**, in Chapter 6
- **Reference materials**, in Chapter 7
- **Acknowledgements**, in Chapter 8

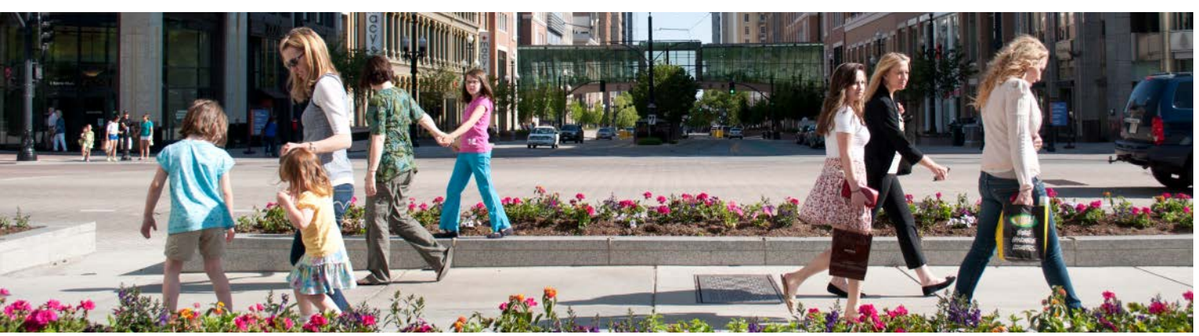
COMPLETE STREETS

II. STREETS

TYPOLOGY ELEMENT DEFINITIONS

The following pages provide illustrations of the typologies identified for Salt Lake City streets. Each page is dedicated to a distinct typology and every Salt Lake City street is assigned a distinct typology (see the map of assigned typologies at Salt Lake City's typologies website here). These typologies represent proposed design concepts based on current or anticipated land uses, and may not necessarily reflect the current roadway design on each individual street. On the right side of each of the following pages are illustrations showing the possible cross-section design for the typology, as well as a plan view showing how each typology might look when viewed from above. On the left side of each page, a table summarizes the typology's design elements and right-of-way priorities. The tables include the following elements:

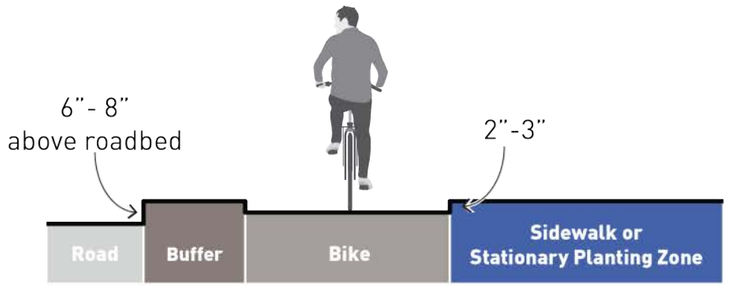
- **RIGHT-OF-WAY (ROW):** The range of widths (in feet) of the publicly-owned portion of each street, as measured perpendicularly from property line to property line. These are often shown as ranges because not every street with the same typology assignment is the same width.
- **TRAVEL LANES PER DIRECTION:** The number of lanes dedicated to moving people in vehicles (cars, trucks, and buses) in each direction. These are often shown as ranges, acknowledging that not every street assigned a typology has the same number of lanes, and also that lane reductions might be more or less appropriate depending on transportation demand and community context.
- **LANE WIDTH/CROSSING DISTANCE:** The range of travel lane widths and the distance needed to walk across all travel lanes, combined. For example, on the One-Way Thoroughfare (Grand Boulevard) typology, this is shown as 11' / 33' – 55', meaning that the typical lane is 11' wide and the crossing distance is as short as 33' (for three travel lanes) or as long as 55' (for five travel lanes).



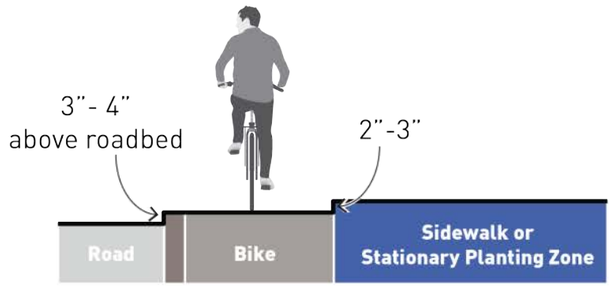
• **BIKE LANE:** The preferred bike lane type, either separated and raised (Type 1) or raised (Type 2), as shown below:

Bike Lane Types

Type 1
Separated + Raised



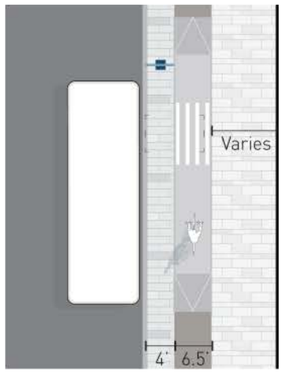
Type 2
Raised



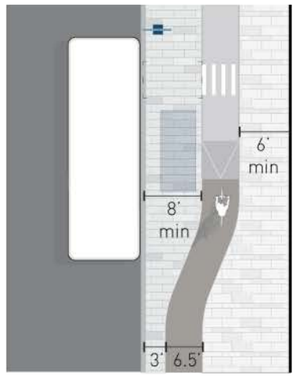
- **TRANSIT:** If transit is expected, this field describes whether that service would be bus (B), rail (R), or both. Transit should only be implemented according to regional and local transit plans, meaning not every street assigned a typology with space for transit will have transit.

Bus Stop Configurations

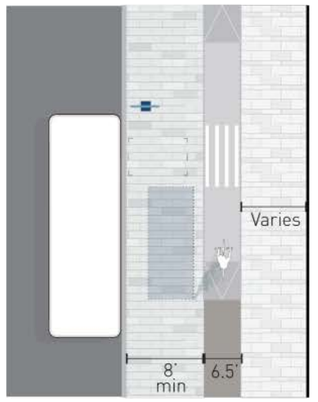
1. Shared Cycle Track Bus Stop



2. Island Bus Stop



3. Flex Zone Bus Stop



- **MEDIAN OR LEFT TURN LANE:** If a median is needed and its appropriate width. Medians may be green space, left-turn lanes, or transit platforms, based on needs at various points along each street.

- **PARKING USE:** This element indicates whether parking would be on one or both sides of the street, and how much of the curbside space might be used for parking. Curbside spaces are sometimes referred to as "flex zones", and their use can vary depending on typology. This part of the right-of-way could be used for wider park strips, parklets, public art, transit lanes, vehicle parking, additional vehicle lanes, bus stops, bike share stations, and other purposes. The graphic below shows how this section of the right-of-way could be dedicated to a wide range of uses.

- **SIDEWALK:** The minimum to maximum desired sidewalk widths, on each side of the street.

- **BUILDING HEIGHT:** The height of adjacent buildings, expressed both in terms of current typical building heights ("Existing") and the Zoning Ordinance's (2020) maximum potential building height ("Allowable"). These heights are based on typical nearby zoning but should not be considered prescriptive and are subject to change. As typologies are implemented on individual corridors, planners should refer to the zoning that governs those corridors.

- **SETBACK:** Setbacks are the distance from the property line, or edge of the public right-of-way, to the building face. These are also based on the typical nearby zoning and are expressed generally (none, small, medium, large), instead of in feet.

- **LIKELY FUNCTIONAL CLASSIFICATION:** The traditional street hierarchy designations that underlie the typologies, such as arterial (a large street), collector (a medium-sized street), and local (a smaller street). These are still important to consider for federal funding and transportation network planning.

- **MAXIMUM TARGET SPEED:** Also known as design speed, this is the maximum speed at which people feel comfortable driving, based on street design, land use, and community context. Each typology's target speed is inherent to its aspirational, future design and appropriate to the activities lining the street. It is likely that current posted speed limits on individual streets would be changed as a result of target speeds being modified through design.

- **TRAFFIC VOLUMES:** The relative amount of daily motor vehicle traffic expected for each typology, characterized as low, medium, or high.

- **MILES:** The percent of Salt Lake City's centerline street mileage, as of 2019, represented by each typology.

Depending on context, some of the five critical functions may be prioritized more, less, or the same as others. However, physical space is provided for each critical function within the public right-of-way in the typology designs. Each of these functions' prioritization is characterized as low, medium, or high.

* Flex Zone

The Flex Zone serves as a multi-use lane along the curbside where street Right of Way width allows. It provides space for a wide range of uses along a street - enhancing different neighborhood characters as well as reflecting the street's land uses. The Flex Zone can have different functions, it can be used for access & mobility, greening, for gathering & socializing, for public art & activation.

Access & Mobility

- Street parking
- Bike parking
- Transit stop
- Passenger load / unoad zones

Greening

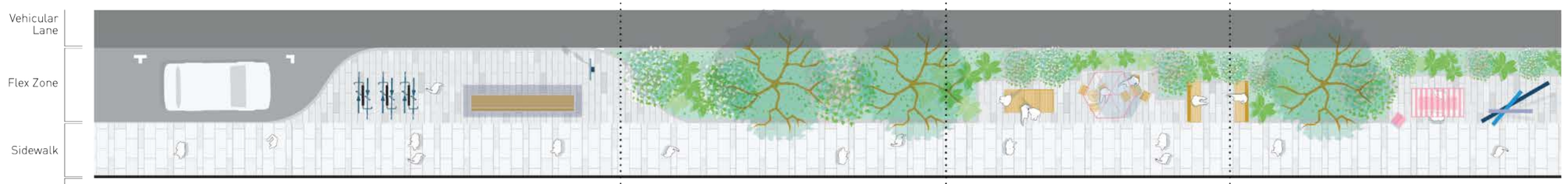
- Low plantings
- Trees
- Stormwater infiltration

Gathering & Socializing

- Outdoor dining
- Informal / formal seating
- Parklet

Art & Activation

- Public Art
- Vendors / Food Trucks



STREET TYPOLOGY DESIGNS

Use Categories

This is a comprehensive list of all the different uses included in the Salt Lake City Street Typologies. The typologies online map demonstrates where individual typologies are assigned to each Salt Lake City street.

Sidewalk

Green / Stationary Zone

Vehicular Lane

Bike Lane

Shared Lane

Designated Travel Lane / Potential Parking

Designated Parking / Potential Travel Lane

Designated Travel Lane / Potential Transit Lane

Designated Stationary Zone / Potential Transit Lane

Flex Zone *

Parking and/or Transit Stop Island

1 Two-Way Thoroughfare (Grand Boulevard)

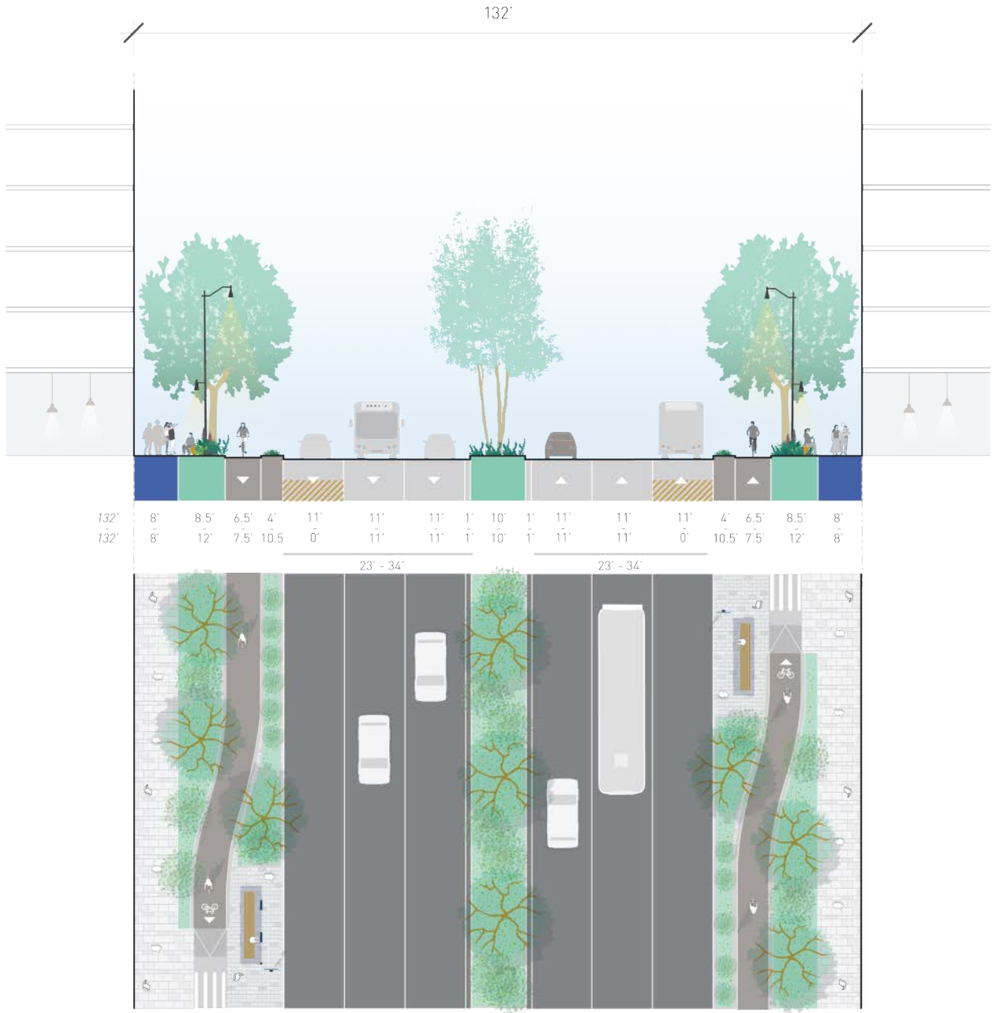
Gateways and grand entrances (two-way) to Salt Lake City, introducing people to the City while accommodating regional traffic.

Note: Refer to Chapter 2 of the Salt Lake City Street and Intersection Typology Guide for typology element definitions. Refer to Chapter 3 for intersection treatments.

Right of Way	**132'**
Travel Lanes per direction	**3****
Lane Width / Crossing Distance	**11' / 23'-34' + 23'-34'**
Bike Lane	**Separated (Type 1)**
Transit	**B**
Median (or Left Turn Lane, when needed)	**10-12'**
Parking Use	**-**
Sidewalk ft (Min-Max)	**8'**
Existing/Zoning-Allowed Bldg Heights	**Varies**
Setback (Min-Max)	**Varies**
Likely Functional Classification	**Arterial**
Maximum Target Speed	**30 mph****
Traffic Volumes	**High**
Miles (% of total)	**2.0%**
Person Mobility	**Medium**
Greening	**Medium**
Placemaking	**High**
Curbside Uses	**Low**
Vehicle Mobility	**Medium**
Passeig de Gracia, Barcelona	

*** These state routes' speed limits may currently be between 30 to 40 mph. Click this link for information on 'Applications to State Routes'.*

For UDOT Streets only: The street cross section shown can and will change. Per state code, the primary purpose of state highways is to "move higher traffic volumes over long distances." The elements outside of this purpose may change to fit within the existing right-of-way. Read more about "Applying Typologies to UDOT Streets" in Chapter 4.



2 One-Way Thoroughfare (Grand Boulevard)

Gateways and grand entrances (one-way) to Salt Lake City, introducing people to the City while accommodating regional traffic. (Note: The One-Way Thoroughfare typology will only be applied to select sections of 500 and 600 South).

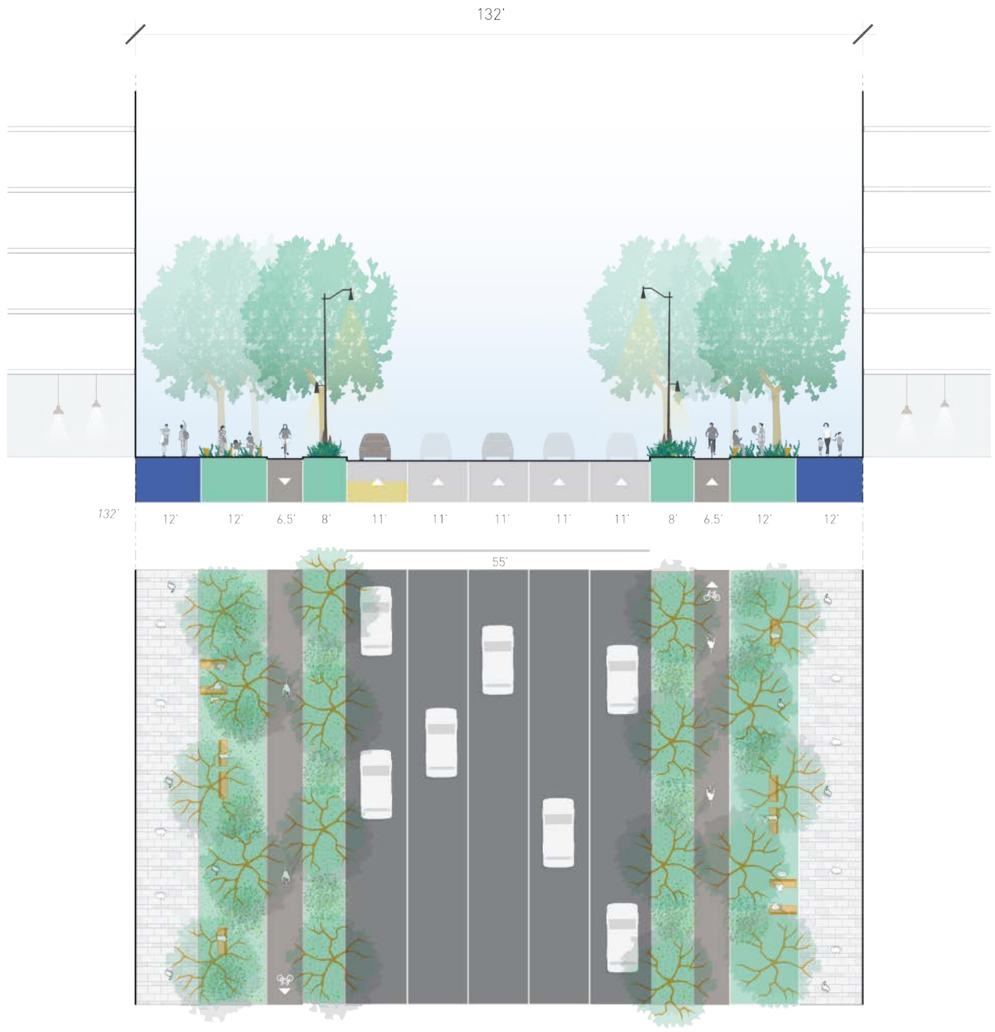
Note: Refer to Chapter 2 of the Salt Lake City Street and Intersection Typology Guide for typology element definitions. Refer to Chapter 3 for intersection treatments.

Right of Way	**132'**
Travel Lanes per direction	**4-5***
Lane Width / Crossing Distance	**11' / 44'- 55'**
Bike Lane	**Separated (Type 1)**
Transit	**-**
Median (or Left Turn Lane, when needed)	**-**
Parking Use	**100%, One Side**
Sidewalk ft (Min-Max)	**12'**
Existing/Zoning-Allowed Bldg Heights	**20' / 400'**
Setback (Min-Max)	**Small-Medium**
Likely Functional Classification	**Arterial**
Maximum Target Speed	**30 mph****
Traffic Volumes	**High**
Miles (% of total)	**0.5%**
Person Mobility	**Medium**
Greening	**Medium**
Placemaking	**High**
Curbside Uses	**Low**
Vehicle Mobility	**Medium**
2nd Avenue, New York, NY	
Boulevard Haussmann, Paris, France	

**UDOT prefers five lanes on this typology, while Salt Lake City prioritizes narrower streets.*

*** These state routes' speed limits may currently be between 30 to 40 mph. Click this link for information on 'Applications to State Routes'.*

For UDOT Streets only: The street cross section shown can and will change. Per state code, the primary purpose of state highways is to "move higher traffic volumes over long distances." The elements outside of this purpose may change to fit within the existing right-of-way. Read more about "Applying Typologies to UDOT Streets" in Chapter 4.



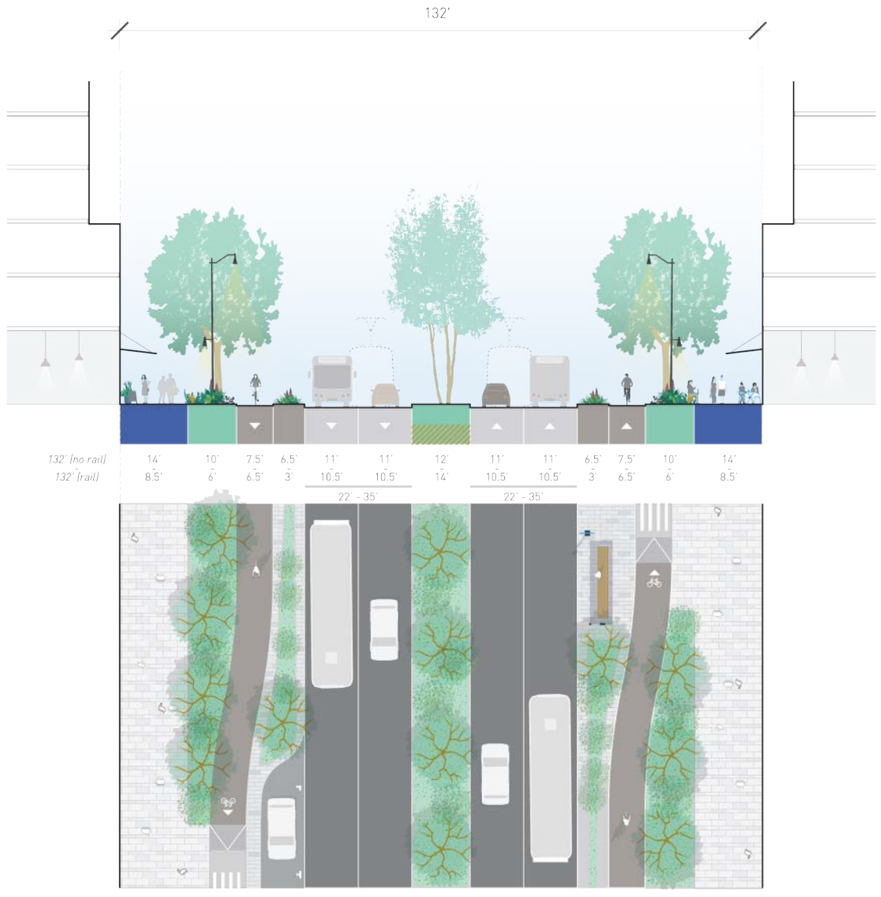
3A Destination Thoroughfare (City Version)

Two-way thoroughfare within a destination district, where foot traffic and retail activity is prioritized over regional traffic.

Note: Refer to Chapter 2 of the Salt Lake City Street and Intersection Typology Guide for typology element definitions. Refer to Chapter 3 for intersection treatments.

Right of Way	**132' (rail)**
Travel Lanes per direction	**2**
Lane Width / Crossing Distance	**10.5'-11' / 22'-35' + 22'-35'**
Bike Lane	**Separated (Type 1)**
Transit	**B,R***
Median (or Left Turn Lane, when needed)	**12-14'**
Parking Use	**50%, Both Sides (no Rail)**
Sidewalk ft (Min-Max)	**8.5 -14'**
Existing/Zoning-Allowed Bldg Heights	**Varies**
Setback (Min-Max)	**-**
Likely Functional Classification	**Arterial**
Maximum Target Speed	**25 mph**
Traffic Volumes	**High**
Miles (% of total)	**1.8%**
Person Mobility	**High**
Greening	**Medium**
Placemaking	**High**
Curbside Uses	**Medium**
Vehicle Mobility	**Medium / Low**
Broad Street, Philadelphia, PA	
Broadway, New York, NY	
Boulevard Massane, Paris, France	

** Rail should be implemented according to City and State transportation and transit agencies' plans, and not on every Destination Thoroughfare typology. Implementation of rail transit may increase crossing distance by 14' to accommodate rail tracks, and does not necessarily add more travel lanes. Crossing distance of 35' represents two lanes plus transit lane.*



3B Destination Thoroughfare (UDOT Version)

The state route option of a two-way thoroughfare within a destination district, where foot traffic and retail activity are high priorities.

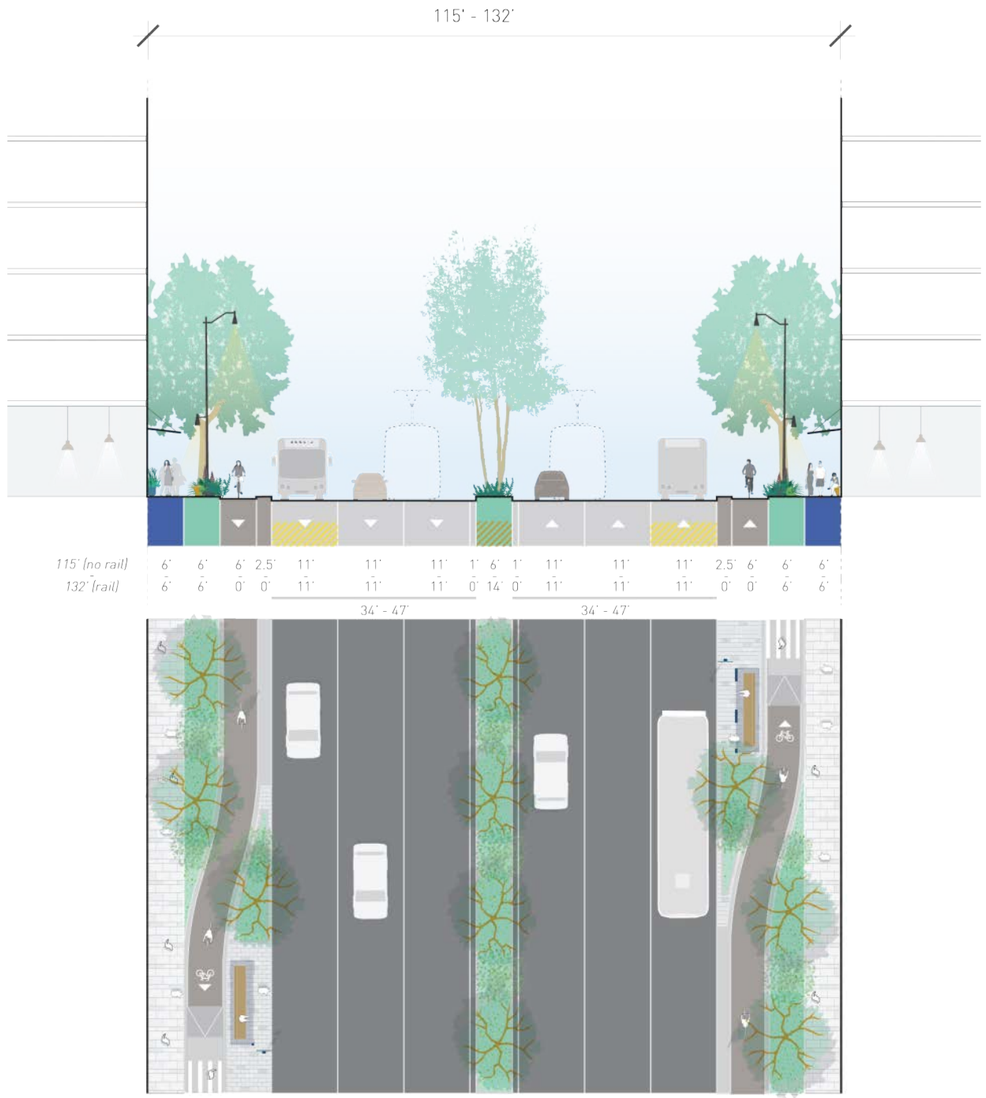
Note: Refer to Chapter 2 of the Salt Lake City Street and Intersection Typology Guide for typology element definitions. Refer to Chapter 3 for intersection treatments.

Right of Way	**115' (no rail) - 132' (rail)**
Travel Lanes per direction	**3****
Lane Width / Crossing Distance	**10.5'/ 34'-47' + 34'-47'**
Bike Lane	**Separated (Type 1)**
Transit	**B,R***
Median (or Left Turn Lane, when needed)	**6 -14'**
Parking Use	**-**
Sidewalk ft (Min-Max)	**7.5'**
Existing/Zoning-Allowed Bldg Heights	**Varies**
Setback (Min-Max)	**-**
Likely Functional Classification	**Arterial**
Maximum Target Speed	**25 mph****
Traffic Volumes	**High**
Miles (% of total)	**2.6%**
Person Mobility	**High**
Greening	**Medium**
Placemaking	**High**
Curbside Uses	**Medium**
Vehicle Mobility	**Medium**
Broad Street, Philadelphia, PA	
Broadway, New York, NY	

** Rail should be implemented according to City and State transportation and transit agencies' plans, and not on every Destination Thoroughfare typology. Implementation of rail transit may increase crossing distance by 14' to accommodate rail tracks, and does not necessarily add more travel lanes. Crossing distance of 35' represents two lanes plus transit lane.*

*** These state routes' speed limits may currently be between 30 to 40 mph. Click this link for information on 'Applications to State Routes'.*

For UDOT Streets only: The street cross section shown can and will change. Per state code, the primary purpose of state highways is to "move higher traffic volumes over long distances." The elements outside of this purpose may change to fit within the existing right-of-way. Read more about "Applying Typologies to UDOT Streets" in Chapter 4.



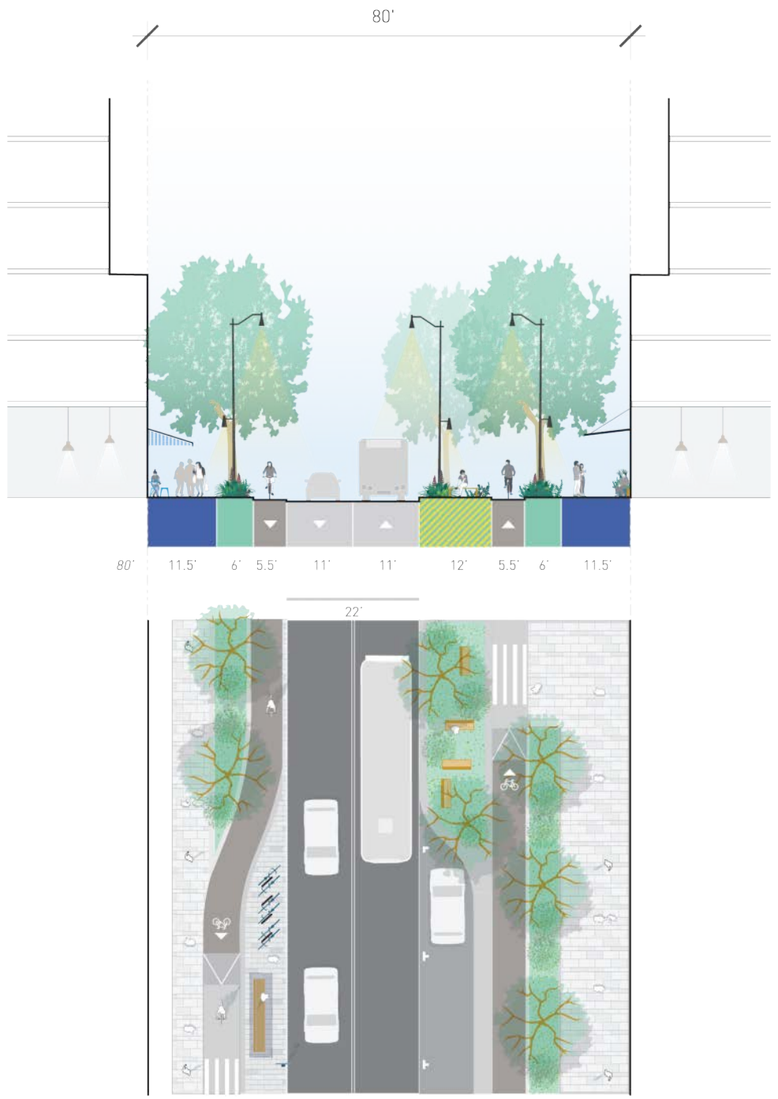
4 Destination Street

"Minor" street where all activities in a destination district mix. Land uses are diverse, buildings are tall, and the street is narrower than on thoroughfares.

Note: Refer to Chapter 2 of the Salt Lake City Street and Intersection Typology Guide for typology element definitions. Refer to Chapter 3 for intersection treatments.

Right of Way	**80'**
Travel Lanes per direction	**1**
Lane Width / Crossing Distance	**11' / 22'**
Bike Lane	**Varies (Type 1,2)**
Transit	**B,R* (Streetcar)**
Median (or Left Turn Lane, when needed)	**-**
Parking Use	**100%, One Side**
Sidewalk ft (Min-Max)	**11.5'**
Existing/Zoning-Allowed Bldg Heights	**25' / 400'**
Setback (Min-Max)	**-**
Likely Functional Classification	**Collector**
Maximum Target Speed	**20 mph**
Traffic Volumes	**Medium**
Miles (% of total)	**0.9%**
Person Mobility	**High**
Greening	**Medium**
Placemaking	**High**
Curbside Uses	**High**
Vehicle Mobility	**Low**
King Street, Toronto, Ontario	
Norrebrogade, Copenhagen, Denmark	
Calle de Fuencarral, Madrid, Spain	

** Rail should be implemented according to City and State transportation and transit agencies' plans, and not on every Destination Thoroughfare typology. Implementation of rail transit may increase crossing distance by 14' to accommodate rail tracks, and does not necessarily add more travel lanes. Crossing distance of 35' represents two lanes plus transit lane.*

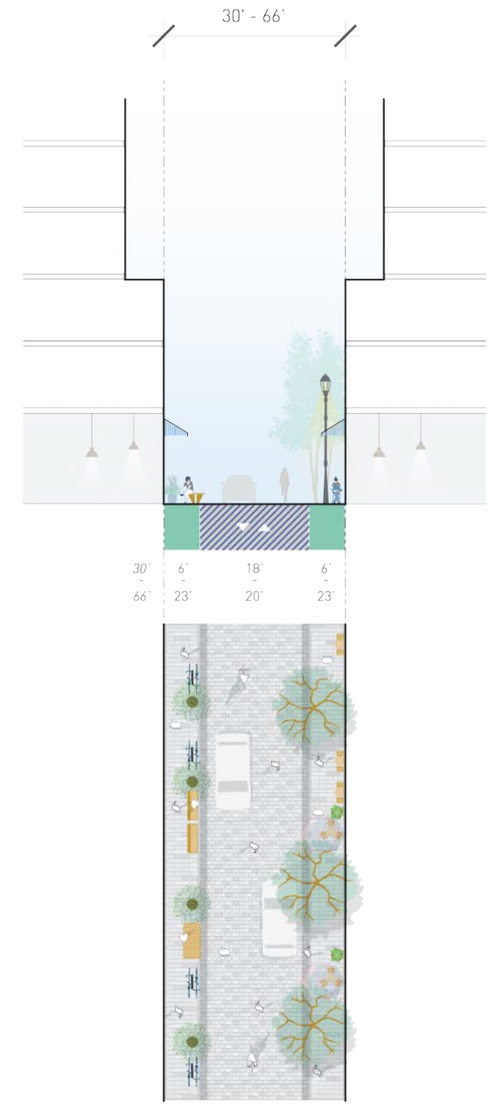


5 Commercial Shared Street

Where cars are invited guests and where focus is on people, activity, and placemaking. These may be one-way or car-free, if desired by the community.

Note: Refer to Chapter 2 of the Salt Lake City Street and Intersection Typology Guide for typology element definitions. Refer to Chapter 3 for intersection treatments.

Right of Way	**30' - 66'**
Travel Lanes per direction	**0-1**
Lane Width / Crossing Distance	**-**
Bike Lane	**-**
Transit	**-**
Median (or Left Turn Lane, when needed)	**-**
Parking Use	**0-50%, One Side (Short Term)**
Sidewalk ft (Min-Max)	**-**
Existing/Zoning-Allowed Bldg Heights	**20' / 400'**
Setback (Min-Max)	**-**
Likely Functional Classification	**Local**
Maximum Target Speed	**10 mph**
Traffic Volumes	**Very Low**
Miles (% of total)	**0.5%**
Person Mobility	**High**
Greening	**Medium**
Placemaking	**High**
Curbside Uses	**High**
Vehicle Mobility	**Low**
Wall Street, Asheville, NC	
Marshall Street, Boston, MA	
Regent Street, Salt Lake City, UT	

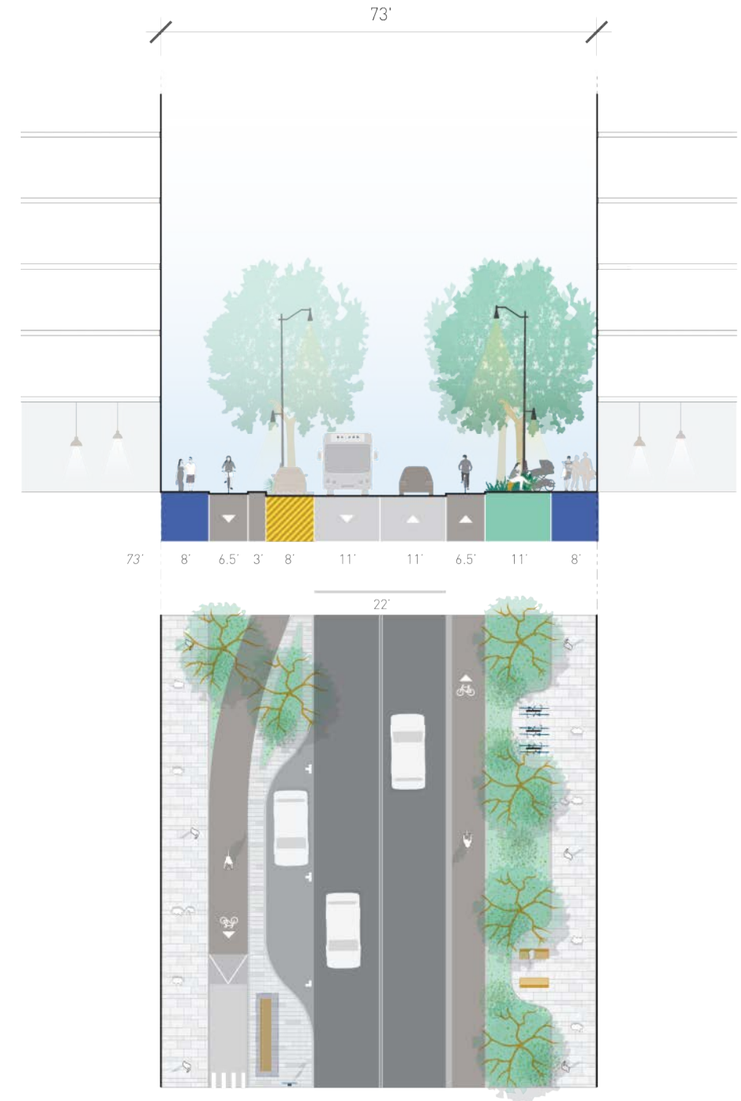


6A Urban Green Street (73')

The narrower of two versions of a street in a denser area of the City where greening of any type is a priority, such as the Downtown Plan's "Green Loop" or another medium sized street near parks or open spaces.

Note: Refer to Chapter 2 of the Salt Lake City Street and Intersection Typology Guide for typology element definitions. Refer to Chapter 3 for intersection treatments.

Right of Way	**73' (no rail)**
Travel Lanes per direction	**1**
Lane Width / Crossing Distance	**11' / 22'**
Bike Lane	**Varies (Type 1, 2)**
Transit	**B**
Median (or Left Turn Lane, when needed)	**-**
Parking Use	**25%, Both Sides**
Sidewalk ft (Min-Max)	**8'**
Existing/Zoning-Allowed Bldg Heights	**Varies**
Setback (Min-Max)	**Varies**
Likely Functional Classification	**Collector**
Maximum Target Speed	**20 mph**
Traffic Volumes	**Medium**
Miles (% of total)	**Up to 2.7%**
Person Mobility	**High**
Greening	**High**
Placemaking	**Medium**
Curbside Uses	**Medium**
Vehicle Mobility	**Low**
Av Mexico, CDMX, Mexico	



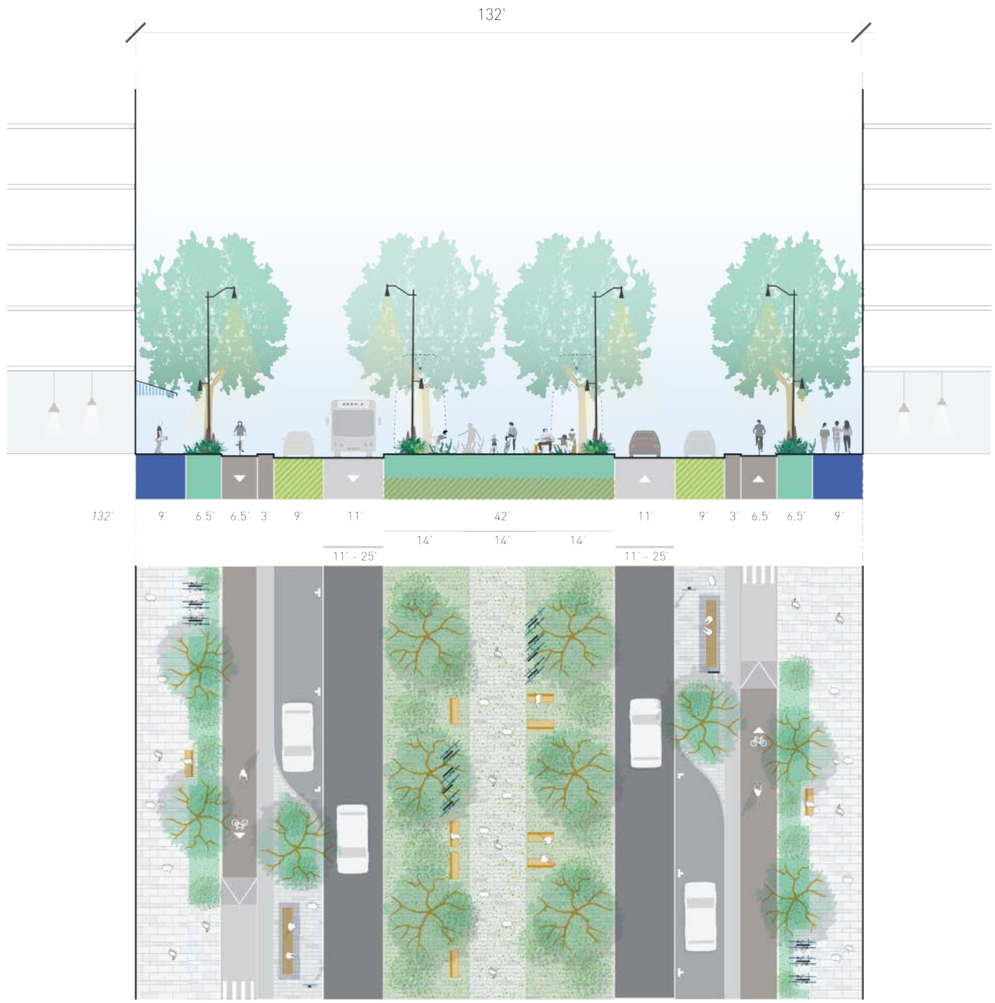
6B Urban Green Street (132')

The wider of two versions of a street in a denser area of the City where greening of any type is a priority, such as the Downtown Plan's "Green Loop" or another medium sized street near parks or open spaces.

Note: Refer to Chapter 2 of the Salt Lake City Street and Intersection Typology Guide for typology element definitions. Refer to Chapter 3 for intersection treatments.

Right of Way	**132' (rail)**
Travel Lanes per direction	**1**
Lane Width / Crossing Distance	**11' / 11'-25' + 11'-25'**
Bike Lane	**Separated (Type 1)**
Transit	**B,R***
Median (or Left Turn Lane, when needed)	**42'**
Parking Use	**50%, Both Sides**
Sidewalk ft (Min-Max)	**9'**
Existing/Zoning-Allowed Bldg Heights	**Varies**
Setback (Min-Max)	**Varies**
Likely Functional Classification	**Collector**
Maximum Target Speed	**20 mph**
Traffic Volumes	**Medium**
Miles (% of total)	**Up to 2.7%**
Person Mobility	**High**
Greening	**High**
Placemaking	**Medium**
Curbside Uses	**Medium**
Vehicle Mobility	**Low**
La Rambla, Barcelona, Spain	
Boulevard Richard Lenoir, Paris, France	
Sonder Boulevard, Copenhagen, Denmark	

** Rail should be implemented according to City and State transportation and transit agencies' plans, and not on every Destination Thoroughfare typology. Implementation of rail transit may increase crossing distance by 14' to accommodate rail tracks, and does not necessarily add more travel lanes. Crossing distance of 35' represents two lanes plus transit lane.*



Sidewalk
Green / Stationary Zone
Vehicular Lane
Bike Lane
Designated Stationary Zone / Potential Transit Lane
Flex Zone

7 Urban Village Main Street

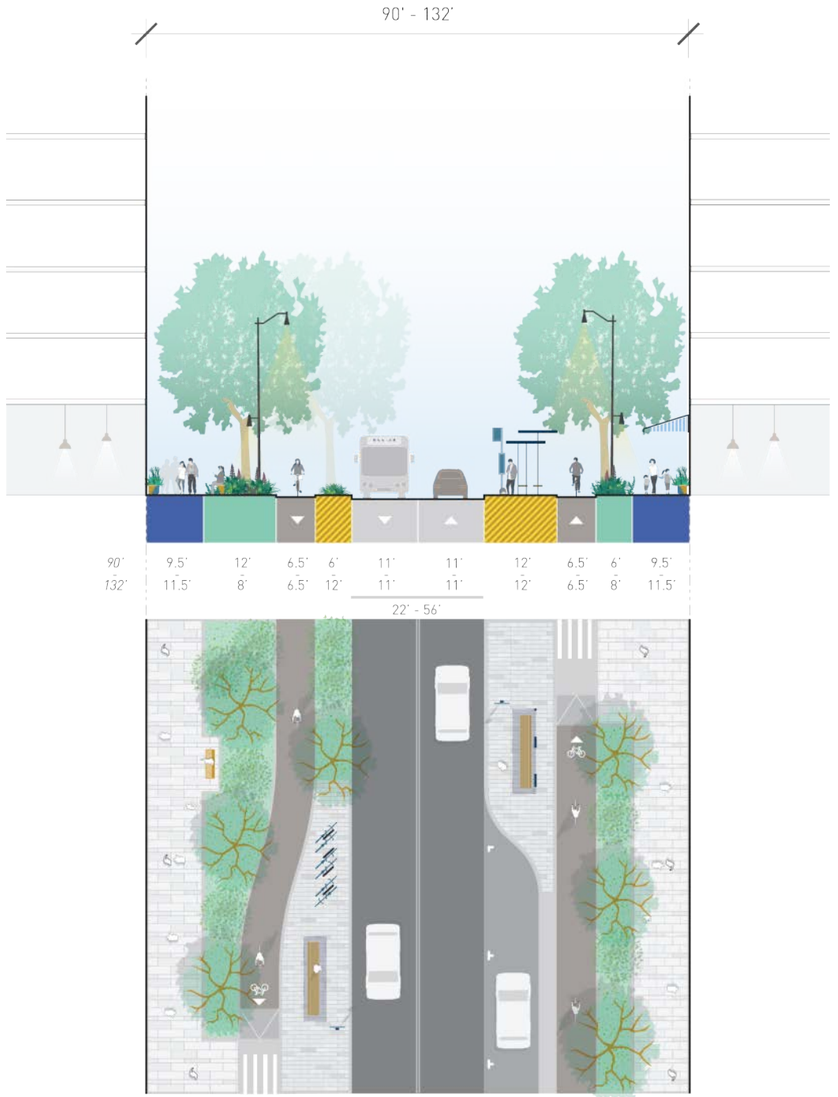
Main street in or connecting urban village centers with multiple land uses and building types, where activity, movement, sense of place, and access are important.

Note: Refer to Chapter 2 of the Salt Lake City Street and Intersection Typology Guide for typology element definitions. Refer to Chapter 3 for intersection treatments.

Right of Way	**90' - 132'**
Travel Lanes per direction	**1-2 (2 lanes if Right of Way =132')**
Lane Width / Crossing Distance	**11' / 22' + 22'**
Bike Lane	**Separated (Type 1)**
Transit	**B**
Median (or Left Turn Lane, when needed)	**12' (add if Right of Way=132')**
Parking Use	**50%, Both Sides**
Sidewalk ft (Min-Max)	**9.5 - 11.5'**
Existing/Zoning-Allowed Bldg Heights	**15' / 150'**
Setback (Min-Max)	**Varies**
Likely Functional Classification	**Collector**
Maximum Target Speed	**25 mph****
Traffic Volumes	**Medium**
Miles (% of total)	**7.7%**
Person Mobility	**High**
Greening	**Medium / High**
Placemaking	**High**
Curbside Uses	**High**
Vehicle Mobility	**Medium / Low**
2nd Avenue, Casper, WY	
Santa Cruz Avenue, Menlo Park, CA	
NE 3rd Street, McMinnville, OR	

*** These state routes' speed limits may currently be between 30 to 40 mph. Click this link for information on 'Applications to State Routes'.*

For UDOT Streets only: The street cross section shown can and will change. Per state code, the primary purpose of state highways is to "move higher traffic volumes over long distances." The elements outside of this purpose may change to fit within the existing right-of-way. Read more about "Applying Typologies to UDOT Streets" in Chapter 4.

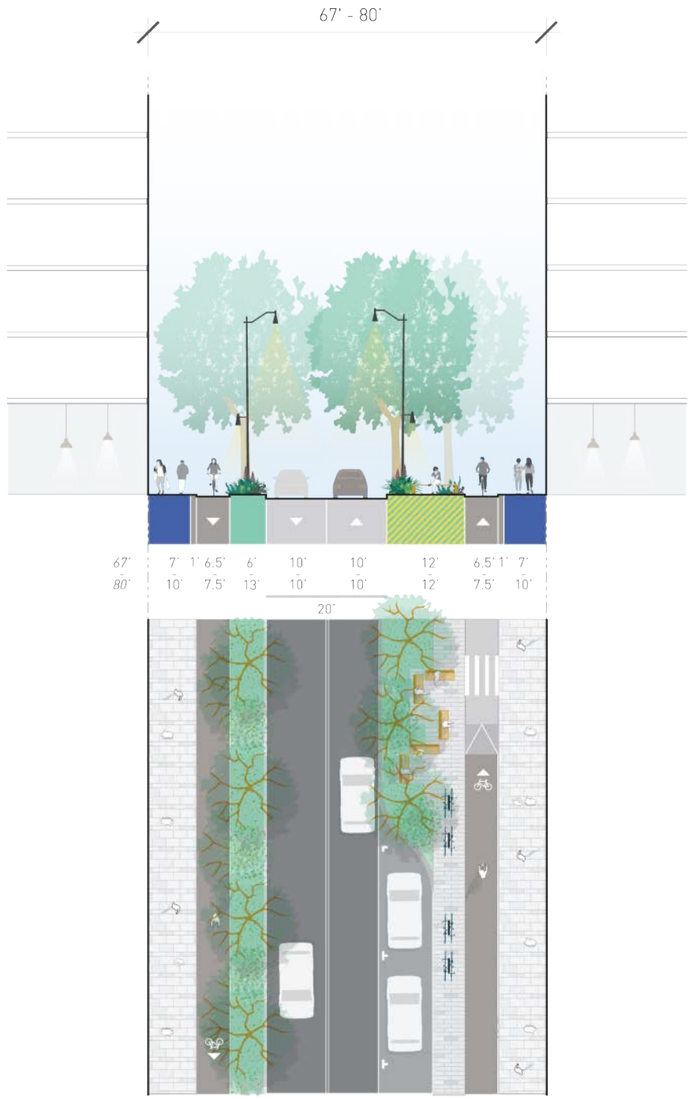


8 Urban Village Street

Predominantly residential street in an urban village with some additional land uses, where neighbors spend time, and where trips begin and end.

Note: Refer to Chapter 2 of the Salt Lake City Street and Intersection Typology Guide for typology element definitions. Refer to Chapter 3 for intersection treatments.

Right of Way	**67' - 80'**
Travel Lanes per direction	**1**
Lane Width / Crossing Distance	**10' / 20'**
Bike Lane	**Separated (Type 1)**
Transit	**-**
Median (or Left Turn Lane, when needed)	**-**
Parking Use	**75%, One Side**
Sidewalk ft (Min-Max)	**8-10'**
Existing/Zoning-Allowed Bldg Heights	**15' / 150'**
Setback (Min-Max)	**None - Small**
Likely Functional Classification	**Local**
Maximum Target Speed	**15 mph**
Traffic Volumes	**Low**
Miles (% of total)	**7.7%**
Person Mobility	**High**
Greening	**High**
Placemaking	**Medium**
Curbside Uses	**Medium**
Vehicle Mobility	**Low**
John Islip Street, London, UK	
Cranberry Street, Brooklyn, NY	
Kekstraat, Haren, NL	



9 Industrial/Business Park Thoroughfare

Principal street in industrial or business parks, mostly west of Redwood Road, with important connections to freeways. Other street priorities are accommodated at lesser intensities.

Note: Refer to Chapter 2 of the Salt Lake City Street and Intersection Typology Guide for typology element definitions. Refer to Chapter 3 for intersection treatments.

Right of Way	**97' - 100'**
Travel Lanes per direction	**2**
Lane Width / Crossing Distance	**12' / 24' + 24'**
Bike Lane	**Separated (Type 1)**
Transit	**B**
Median (or Left Turn Lane, when needed)	**10'**
Parking Use	**-**
Sidewalk ft (Min-Max)	**6-7'**
Existing/Zoning-Allowed Bldg Heights	**15' / 150'**
Setback (Min-Max)	**Large**
Likely Functional Classification	**Arterial**
Maximum Target Speed	**30 mph ****
Traffic Volumes	**Medium**
Miles (% of total)	**6.5%**
Person Mobility	**Medium**
Greening	**Medium**
Placemaking	**Low**
Curbside Uses	**Low**
Vehicle Mobility	**High**
Floraweg, Utrecht, NL	
Patterson Pass Road, Livermore, CA	

*** These state routes' speed limits may currently be between 30 to 40 mph. Click this link for information on 'Applications to State Routes'.*

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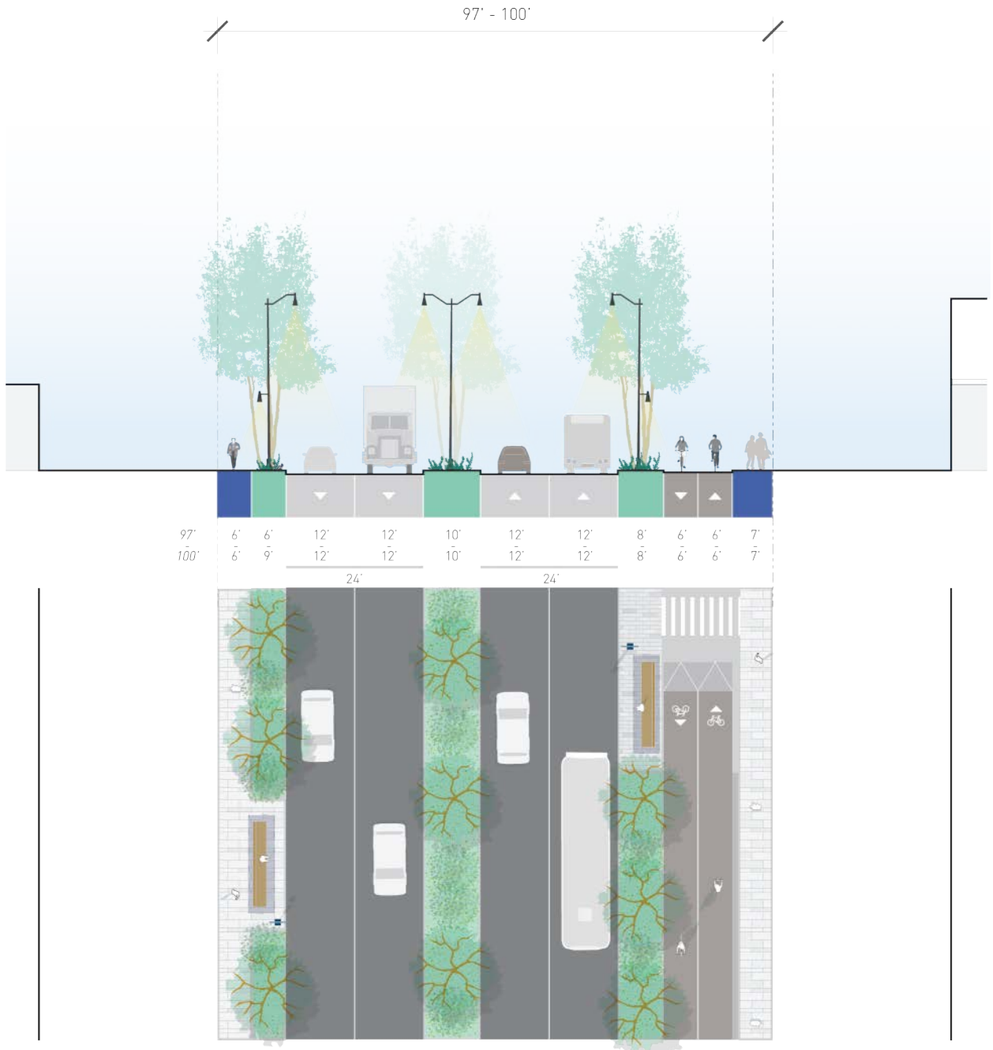
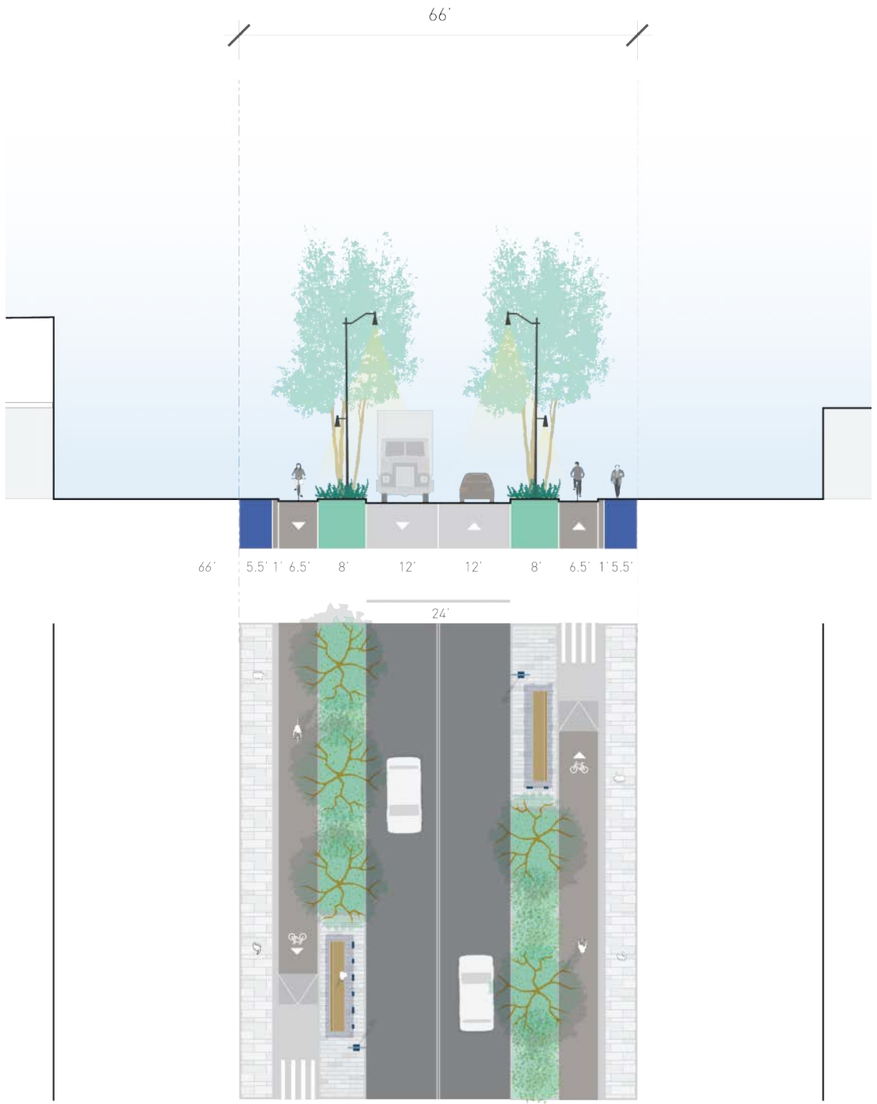


10 Industrial/Business Park Street

Narrower, low traffic street where trips begin and end, and where walking and greening are higher priorities than on the area's thoroughfares.

Note: Refer to Chapter 2 of the Salt Lake City Street and Intersection Typology Guide for typology element definitions. Refer to Chapter 3 for intersection treatments.

Right of Way	**66'**
Travel Lanes per direction	**1**
Lane Width / Crossing Distance	**12' / 24'**
Bike Lane	**Separated (Type 1)**
Transit	**B**
Median (or Left Turn Lane, when needed)	**-**
Parking Use	**-**
Sidewalk ft (Min-Max)	**5.5'**
Existing/Zoning-Allowed Bldg Heights	**15' / 150'**
Setback (Min-Max)	**Large**
Likely Functional Classification	**Local**
Maximum Target Speed	**20 mph**
Traffic Volumes	**Low**
Miles (% of total)	**10.7%**
Person Mobility	**Medium**
Greening	**Medium**
Placemaking	**Low**
Curbside Uses	**Medium**
Vehicle Mobility	**Medium**
Niels Bohrweg, Utrecht, NL	



11 Neighborhood Corridor

Principal street through and/or between neighborhoods, with a greater focus on residential uses than an Urban Village Main Street.

Note: Refer to Chapter 2 of the Salt Lake City Street and Intersection Typology Guide for typology element definitions. Refer to Chapter 3 for intersection treatments.

Right of Way	**78' - 100'**
Travel Lanes per direction	**1**
Lane Width / Crossing Distance	**11' / 11'-22'**
Bike Lane	**Separated (Type 1)**
Transit	**B**
Median (or Left Turn Lane, when needed)	**12' (added if ROW=100')**
Parking Use	**50%, Both Sides**
Sidewalk ft (Min-Max)	**8-10'**
Existing/Zoning-Allowed Bldg Heights	**15' / 60'**
Setback (Min-Max)	**Small - Medium**
Likely Functional Classification	**Collector**
Maximum Target Speed	**25 mph ****
Traffic Volumes	**Medium**
Miles (% of total)	**6.8%**
Person Mobility	**Medium**
Greening	**High**
Placemaking	**Medium**
Curbside Uses	**Medium / Low**
Vehicle Mobility	**Medium / Low**
Rijksstraatweg, Haren, NL	

*** These state routes' speed limits may currently be between 30 to 40 mph. Click this link for information on 'Applications to State Routes'.*

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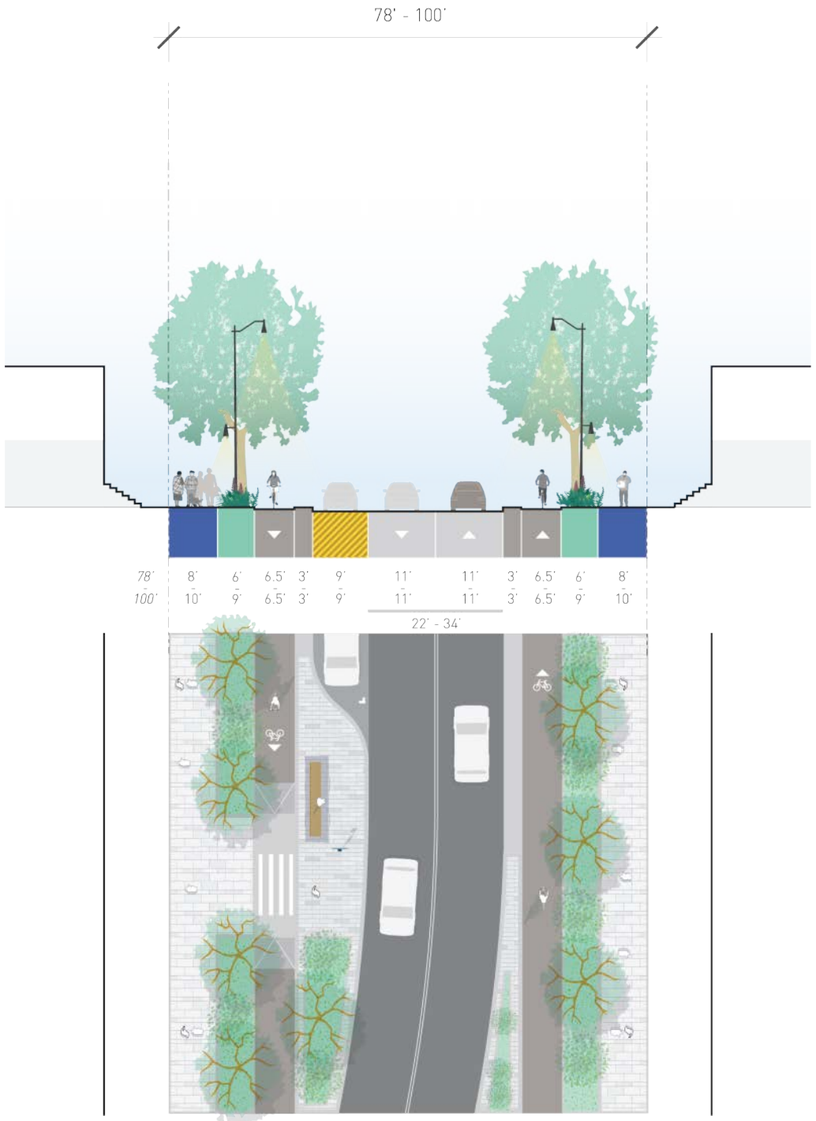
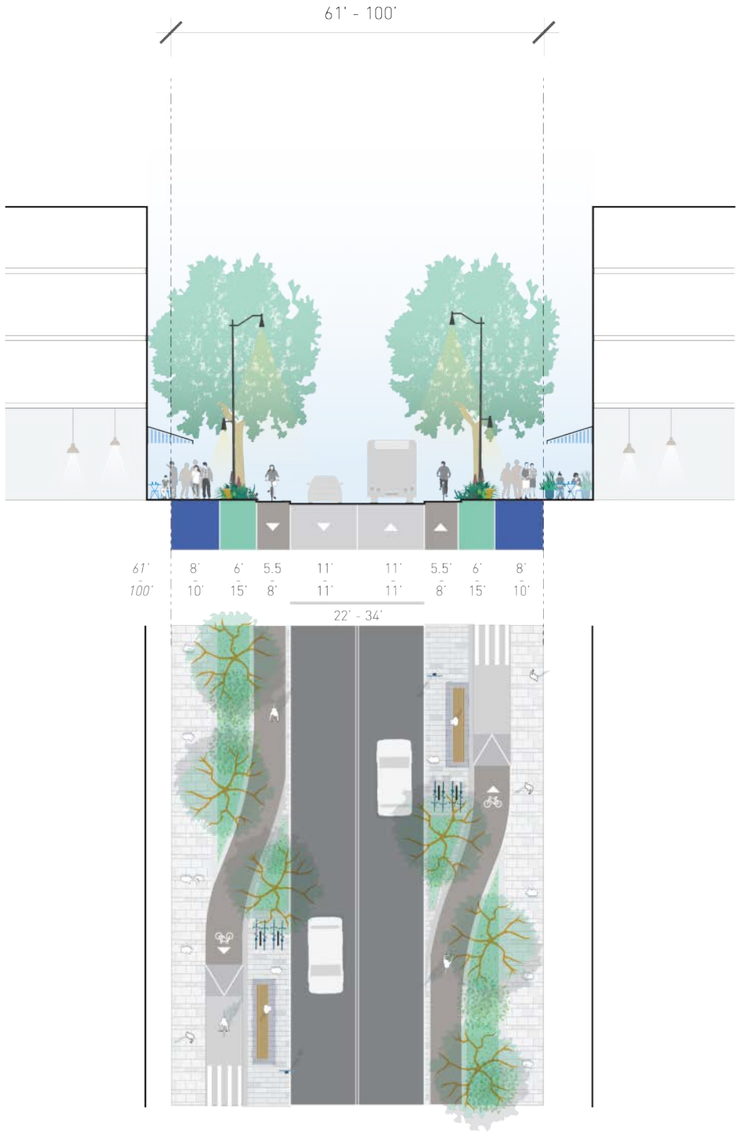


12 Neighborhood Center

An intersection of larger and smaller streets at small scale neighborhood centers, emphasizing social connections, some amenities, and gathering.

Note: Refer to Chapter 2 of the Salt Lake City Street and Intersection Typology Guide for typology element definitions. Refer to Chapter 3 for intersection treatments.

Right of Way	**61' - 100'**
Travel Lanes per direction	**1**
Lane Width / Crossing Distance	**11' / 11'-22'**
Bike Lane	**Raised (Type 2)**
Transit	**B**
Median (or Left Turn Lane, when needed)	**12' (added if Right of Way=100')**
Parking Use	**-**
Sidewalk ft (Min-Max)	**8-10'**
Existing/Zoning-Allowed Bldg Heights	**15' / 45'**
Setback (Min-Max)	**Small - Medium**
Likely Functional Classification	**Collector**
Maximum Target Speed	**20 mph**
Traffic Volumes	**Medium**
Miles (% of total)	**1.0%**
Person Mobility	**High**
Greening	**High**
Placemaking	**High**
Curbside Uses	**Medium**
Vehicle Mobility	**Medium / Low**
Mt, Vernon Avenue, Alexandria, VA	
32nd Avenue NW, Seattle, WA	
Union Street, Seattle, WA	

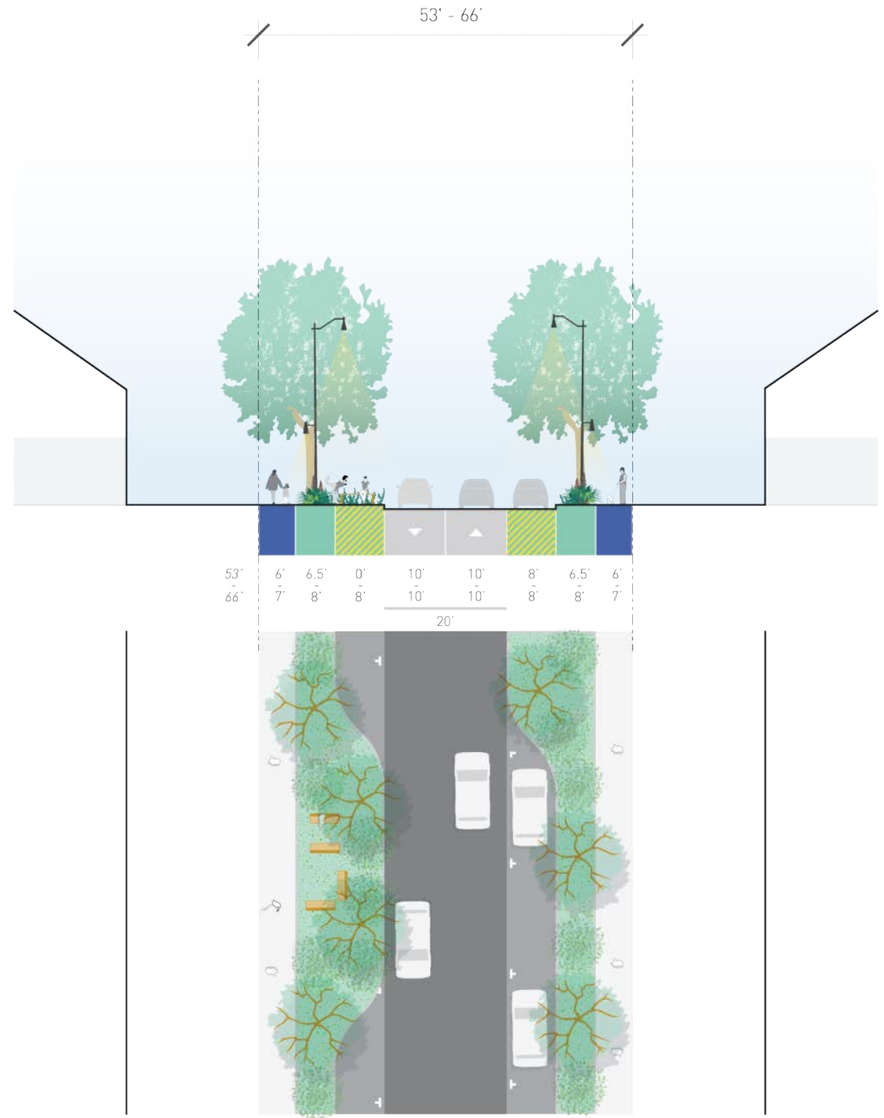


13 Neighborhood Street

Minor Neighborhood street where homes are typically the most common use and where trips begin or end. This is the most common typology, in miles.

Note: Refer to Chapter 2 of the Salt Lake City Street and Intersection Typology Guide for typology element definitions. Refer to Chapter 3 for intersection treatments.

Right of Way	**53' - 66'**
Travel Lanes per direction	**0-1**
Lane Width / Crossing Distance	**10' / 20'**
Bike Lane	**-**
Transit	**-**
Median (or Left Turn Lane, when needed)	**-**
Parking Use	**75%, One to Two Sides**
Sidewalk ft (Min-Max)	**6'-7'**
Existing/Zoning-Allowed Bldg Heights	**15' / 60'**
Setback (Min-Max)	**Small-Medium**
Likely Functional Classification	**Local**
Maximum Target Speed	**15 mph**
Traffic Volumes	**Low**
Miles (% of total)	**33.9%**
Person Mobility	**High**
Greening	**High**
Placemaking	**Low**
Curbside Uses	**Medium / Low**
Vehicle Mobility	**Low**
3rd Avenue, Salt Lake City, UT	
48th Avenue South, Minneapolis, MN	

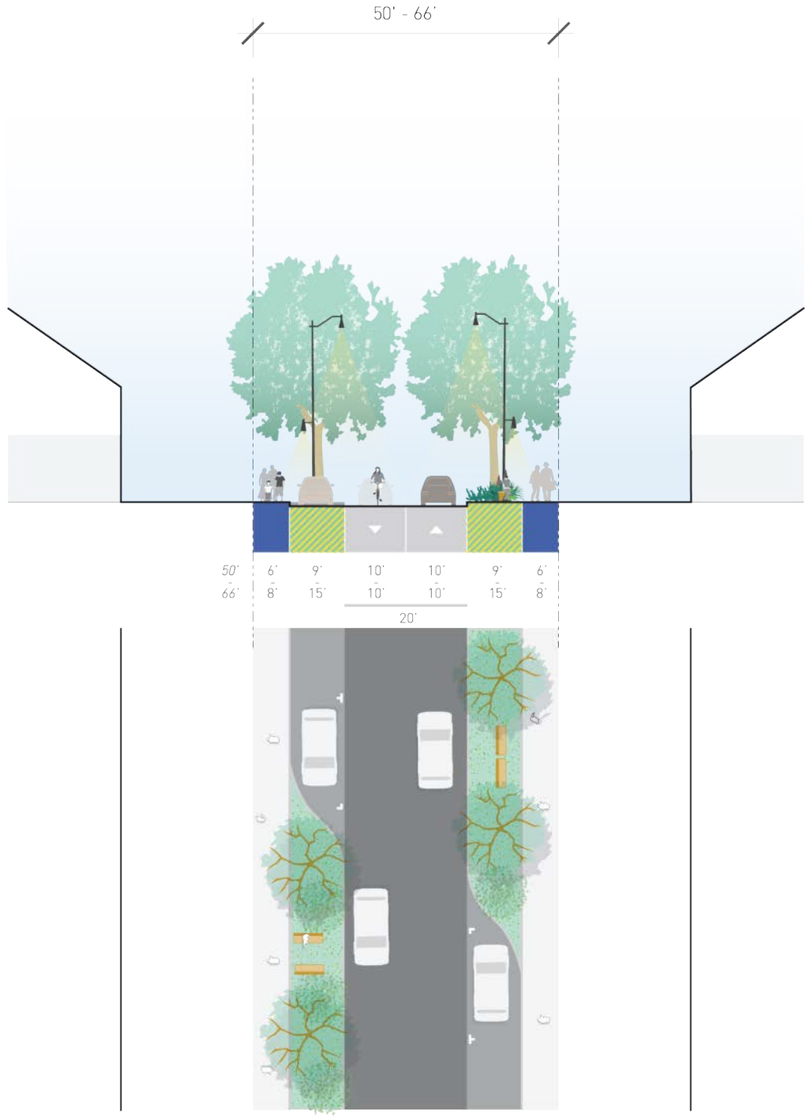


14 Neighborhood Green Street

A Neighborhood Street where greening and traffic calming are prioritized, and where walking and bicycling may be higher than on busier corridors.

Note: Refer to Chapter 2 of the Salt Lake City Street and Intersection Typology Guide for typology element definitions. Refer to Chapter 3 for intersection treatments.

Right of Way	**50' - 66'**
Travel Lanes per direction	**0-1**
Lane Width / Crossing Distance	**10' / 20'**
Bike Lane	**-**
Transit	**-**
Median (or Left Turn Lane, when needed)	**-**
Parking Use	**50%, One to Two Sides**
Sidewalk ft (Min-Max)	**6'-8'**
Existing/Zoning-Allowed Bldg Heights	**Varies**
Setback (Min-Max)	**Small-Medium**
Likely Functional Classification	**Local**
Maximum Target Speed	**15 mph**
Traffic Volumes	**Low**
Miles (% of total)	**9.6%**
Person Mobility	**High**
Greening	**High**
Placemaking	**Low**
Curbside Uses	**Low**
Vehicle Mobility	**Low**
N 42nd Street, Seattle, WA	
10th Avenue, Vancouver, BC	



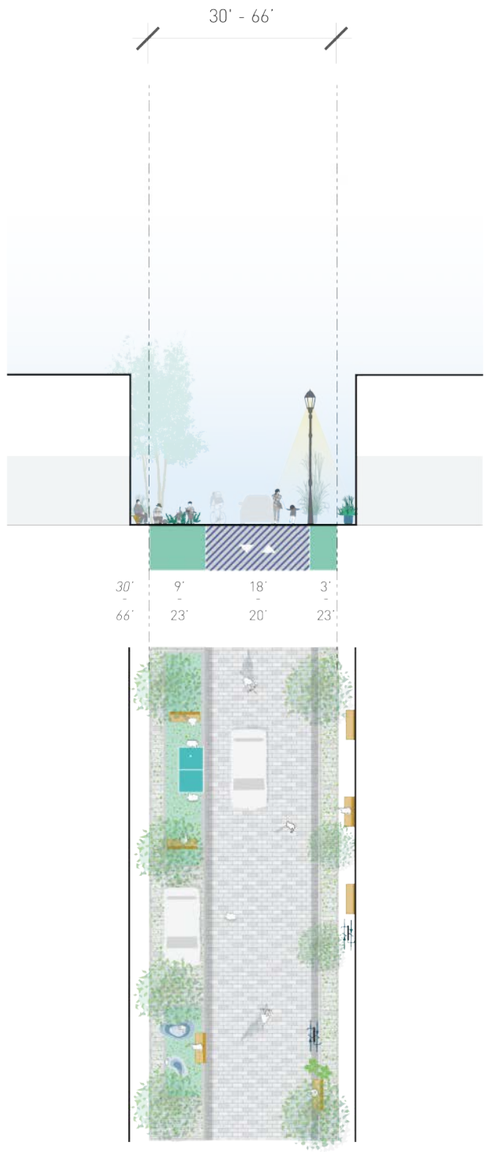
Sidewalk
Vehicular Lane
Flex Zone

15 Neighborhood Shared Street

Where cars are invited guests and where focus is on people, activity, and placemaking. These may be one-way or car-free, if desired by the community.

Note: Refer to Chapter 2 of the Salt Lake City Street and Intersection Typology Guide for typology element definitions. Refer to Chapter 3 for intersection treatments.

Right of Way	**30' - 66'**
Travel Lanes per direction	**0-1**
Lane Width / Crossing Distance	**-**
Bike Lane	**-**
Transit	**-**
Median (or Left Turn Lane, when needed)	**-**
Parking Use	**25%, One Side**
Sidewalk ft (Min-Max)	**-**
Existing/Zoning-Allowed Bldg Heights	**15' / 60'**
Setback (Min-Max)	**Small**
Likely Functional Classification	**Local**
Maximum Target Speed	**10 mph**
Traffic Volumes	**Very Low**
Miles (% of total)	**5.1%**
Person Mobility	**High**
Greening	**High**
Placemaking	**Medium**
Curbside Uses	**Low**
Vehicle Mobility	**Low**
Kleine Appelstraat, Groningen, NL	
Jerichausgade, Copenhagen, DK	
Argyle Court, Salt Lake City, UT	

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INTERSECTIONS

III. INTERSECTIONS

BEST PRACTICES FOR INTERSECTIONS

INTERSECTIONS ARE WHERE PEOPLE MEET, SOCIALIZE, AND EXCHANGE IDEAS. THEY ARE THE MOST CRITICAL SPACES IN CITIES.

The book Human Scale[2] states it this way:

> "Cities are meant to stop traffic. That is their point. That is why they are there. That is why traders put outposts there, merchants put shops there, hoteliers erected inns there. That is why factories locate there, why warehouses, assembly plants and distribution centers are established there. That is why people settle and cultural institutions grow there. No one wants to operate in a place that people are just passing through; everyone wants to settle where people will stop, and rest, and look around, and talk, and buy, and share.
>
> Cities, in short, should be an end, not a means. Rationally one wants to have traffic stop there, not go through, one wants movement within it to be slow, not fast."

Currently, however, intersections can be dangerous public places. This is due to the incredible number of potential conflicts points combined with the desire (by some) to reduce motor vehicle delay and enhance motor vehicle capacity above all other purposes and priorities.

WE CAN, AND SHOULD, DO BETTER.

Throughout Salt Lake City, intersections should, first, support and reinforce (rather than undermine) the City's overall goal of creating people-friendly streets. Second, they should protect the safety of all users of the public right-of-way, in general, and vulnerable users, in particular. Third, intersections should support the critical functions of the rights-of-way in the city that each of the 17 street typologies prioritizes.

2. *Sale, Kirkpatrick. Human Scale. New Catalyst Books, 2007.*

The following principles should be applied to all intersections, universally:

- Intersections should be safe, easy, and intuitive for all users to negotiate, regardless of their ability or transportation choice;
- Transportation modes and right-of-way functions prioritized on intersecting streets should be prioritized where they intersect;
- Intersections should use the smallest effective curb radii possible, consistent with desired design vehicles and turning speeds;
- Protect people walking, bicycling, and using mobility devices from potential injury or discomfort by increasing their visibility and physical protection or separation at and near conflict points and crossing locations, including reducing vehicle speeds and limiting potential conflict points with vehicles;
- Design intersections to discourage excess speeds, reduce crossing distances, and provide space for public realm enhancements.

INTERSECTIONS AND PLACE TYPES

The 17 street typologies presented in this Guide can potentially intersect in many different combinations. This section of the Guide provides infrastructure recommendations for nine high-level intersection typologies, based on the general scale of the streets involved: major, medium, local, and shared.

Like the street typologies, these nine intersection typologies and their respective elements and recommendations should be considered as a starting point for designing intersections of different sizes and intensities. The matrix in Table 1 may need to be adapted further to complement specific transportation, land use, and urban design contexts, and supplemented with appropriate improvements from the Best Practices in Table 2 and the Additional Intersection Features list in Table 3. Recommendations from these tables may be reviewed, applied, and refined intersection-by-intersection, particularly as they relate to UDOT facilities.

TABLE 1: INTERSECTION TYPOLOGIES

	MAJOR STREET	MEDIUM STREET	LOCAL STREET
MAJOR STREET	- Signalized intersection best practices* - "Look Before Crossing" signs/stencils - Protected intersection (see Table 3 for definition) - Centerline hardening - Bike boxes and/or colored paving through intersection - Pedestrian refuge islands/medians - Curb extensions - Reduced curb radii** - Leading pedestrian and/or bicycle interval - Perpendicular curb cuts - Pull-out transit stops with queue jumps		
MEDIUM STREET	- Signalized intersection best practices* - "Look Before Crossing" signs/stencils - Protected intersection - Centerline hardening - Bike boxes and/or colored paving through intersection - Leading pedestrian and/or bicycle interval - Perpendicular curb cuts - In-lane transit stops - Reduced curb radii** **SPECIFIC TO MAJOR STREET:** - Pedestrian refuge islands/medians **SPECIFIC TO MEDIUM STREET:** - Curb extensions	- Signalized intersection best practices* - Protected intersection - Centerline hardening - Bike boxes and/or colored paving through intersection - Pedestrian refuge islands/medians - Curb extensions - Reduced curb radii**	
LOCAL STREET	- Stop controlled or signalized intersection best practices* - "Look Before Crossing" signs/stencils - Protected intersection - Bike boxes and/or colored paving through intersection **SPECIFIC TO LOCAL STREET:** - Curb extensions - Reduced curb radii** - Traffic diverters	- Stop controlled or signalized intersection best practices* - Bike boxes and/or colored paving through intersection - Protected intersection **SPECIFIC TO MEDIUM STREET:** - Pedestrian refuge islands/medians **SPECIFIC TO LOCAL STREET:** - Curb extensions - Reduced curb radii** - Traffic diverters	- Stop controlled or signalized intersection best practices* - Curb extensions - Reduced curb radii** - Raised intersection
SHARED STREET	- Signalized intersection best practices* or mid-block crossing - "Look Before Crossing" signs/stencils - Protected intersection - Bike boxes and/or colored paving through intersection **SPECIFIC TO MAJOR STREET:** - Pedestrian refuge islands/medians **SPECIFIC TO SHARED STREET:** - Curb extensions - Reduced curb radii** - Traffic diverters	- Signalized intersection best practices* or mid-block crossing - "Look Before Crossing" signs/stencils - Protected intersection - Bike boxes and/or colored paving through intersection **SPECIFIC TO MEDIUM STREET:** - Pedestrian refuge islands/medians **SPECIFIC TO SHARED STREET:** - Curb extensions - Reduced curb radii** - Traffic diverters	- Stop controlled intersection best practices* - Curb extensions - Reduced curb radii** - Raised intersection - Colored paving through intersection - Raised crosswalks

Notes:
*See Table 2 for signalized and stop-controlled intersection best practices
**Reduced curb radii may vary depending on context, but could be as low as 10'-15'

TABLE 2: INTERSECTION BEST PRACTICES

IMPROVEMENT	NOTES
SIGNALIZED INTERSECTION BEST PRACTICES	
ADEQUATE PEDESTRIAN CROSSING TIMES	Assume no more than 3.5 feet/second for crossing time, and perhaps closer to 3.0 or less where slower and/or high concentrations of people walking are expected. This provides more time for people to get across the intersection.
PEDESTRIAN COUNTDOWN TIMERS	Include countdown timers in all new pedestrian signals.
BICYCLE DETECTION	Ensure loop, radar, or video detection is properly configured to detect people bicycling at logical stopping locations.
SIGNAL POLE AND CABINET PLACEMENT	Ensure pole and cabinet placements do not obstruct pedestrian areas.
HIGH-VISIBILITY CROSSWALKS ON ALL APPROACHES	High-visibility crosswalk designs improve driver compliance at crosswalks, and should be included on all legs of all intersections with marked crosswalks.
DETECTABLE, ADA-COMPLIANT CURB RAMPS	All curb ramps should use detectable warning surfaces (alerting visually-impaired people to the presence of a crosswalk) and be ADA compliant.
PERPENDICULAR CURB CUTS	Place pedestrian ramps perpendicular to the curb and roadway to align with crosswalk locations.
ACCESSIBLE PEDESTRIAN ACTUATION BUTTONS	Ensure that pedestrian push-buttons at crosswalks are accessible to all users, including people in mobility devices. Consider automatic rather than actuated pedestrian phases at high pedestrian volume intersections.
PEDESTRIAN-SCALE LIGHTING	Use pedestrian-scale street lighting to improve nighttime visibility at intersections. Ensure that changes in vegetation, buildings, etc., are considered. Refer to the Street Light Master Plan for recommendations for vehicular lighting recommendations.
UNSIGNALIZED INTERSECTION BEST PRACTICES	
MARKED CROSSWALKS AND CURB RAMPS	Provide crosswalks and ramps at all legs of intersections that have sidewalks leading into them.
REDUCED CURB RADII	Reducing the curb radii encourages vehicles to slow down during turning movements. The desired effective curb radius will vary depending on the design vehicle, but 15' effective radii may be appropriate in many contexts.
PEDESTRIAN-SCALE LIGHTING	Use pedestrian-scale street lighting to improve nighttime visibility at intersections. Refer to the Street Light Master Plan for recommendations for vehicular lighting recommendations.
ROUNDABOUTS	Roundabouts may be appropriate treatments for some intersection typologies. In the right circumstances and when designed following best practices, roundabouts can reduce vehicle delay, crashes, and may provide safer conditions for people walking and bicycling. Design should provide splitter islands at approaches to provide a refuge for people crossing the street, and set crosswalks back from the yield line by at least one vehicle length to shorten the crossing distance, reduce conflict points, and improve pedestrian visibility. Detectable pavement surfaces can be used to guide people with visual impairments towards safe crossing locations. Bike lanes at roundabouts should always be raised and physically separated from the roadway. Bicycle ramps may be needed to guide people bicycling towards raised bike lanes, sidewalks, and bicycle crossing or crosswalk areas.

TABLE 3: ADDITIONAL INTERSECTION FEATURES

	IMPROVEMENT	NOTES
WALKING	"LOOK BEFORE CROSSING" STENCILS	These stencils should be placed near pedestrian ramps in areas with high vehicle volumes, to encourage people to be aware of their surroundings.
	LEADING PEDESTRIAN INTERVAL	Leading Pedestrian Intervals provide a pedestrian "walk" signal before vehicles get a green signal, giving people walking a head start to cross the street and improving their visibility. These are preferred where there are high conflicting volumes of people walking and turning vehicles, and may be combined with a Leading Bike Interval.
	PEDESTRIAN SCRAMBLE PHASE	This provides a dedicated all-directions pedestrian-only phase, appropriate at the highest pedestrian volume intersections.
	PEDESTRIAN REFUGE ISLANDS	Islands are located in the middle of the street, allowing people walking to cross half the street at a time. These should be at least 6' wide to accommodate people bicycling as well as walking, and can be extended in locations of higher pedestrian crossing volumes or additional travel lanes.
	CURB EXTENSIONS	These bulb-out features at intersections slow traffic, shorten crossing distances, and improve pedestrian visibility.
	CENTERLINE HARDENING	Centerline hardening uses physical features such as bollards or curbs extending into the intersection at the centerline, requiring drivers to slow down and make a tighter curve when turning left. This improves safety for people in the crosswalk.
	RAISED INTERSECTIONS	The roadway can be raised at minor intersections, slowing vehicle traffic and providing better visibility of people walking and bicycling across the intersection. Raised intersection designs will need to account for functions such as target speed, design vehicle, drainage, and other needs.
	COLORED PAVEMENT THROUGH INTERSECTIONS	Colored pavement can highlight pedestrian or bicyclist zones within an intersection, or indicate the intersection of a "shared street" with a higher-level street and raise driver awareness of the presence of people in the street.
	RAISED CROSSWALKS	Raised crosswalks provide an elevated surface above the travel lane, encouraging slower speeds and making people walking more visible.
	PEDESTRIAN BEACONS	Pedestrian beacons can be used to highlight and regulate traffic at frequent pedestrian crossings in between signal locations. Beacon type will vary depending on the street and intersection context: post-mounted Rectangular Rapid Flashing Beacons can be used at small-medium and small-small intersections or mid-block locations, while HAWK Beacons should be used at crossings on major streets and some medium street intersections.
	LAGGING LEFT TURNS	Shifting left turns to end of signal phase allow people walking to clear the intersection prior to the left-turn green arrow, reducing conflicts.
BICYCLES	BICYCLE BOXES	Bicycle boxes are marked on-street waiting areas near the crosswalk at intersections, so people bicycling can queue in front of vehicles as they wait for a green signal.
	PROTECTED INTERSECTION	A protected intersection gives people bicycling and walking a dedicated path through intersections, keeping them physically separate from vehicle traffic. These designs reduce vehicle turning speeds, improve visibility for people walking and bicycling, and reduce conflicts between cars and people.
	LEADING BICYCLE INTERVAL	Where high conflicting volumes of people bicycling and turning vehicles exist, a Leading Bicycle Internal provides a bicycle green indication before the green signal for vehicles. It is often combined with a Leading Pedestrian Interval.
	PROTECTIVE/PERMISSIVE BICYCLE SIGNAL PHASE	Where high conflicting volumes of people bicycling and turning vehicles exist, signals should provide separate through and right turn indications for the traffic lanes parallel to separated bicycle facilities. This allows bicycles making a through movement to clear the intersection prior to conflicting right turning vehicles.
	PROTECTED BICYCLE SIGNAL	This provides a separate signal phase specifically for bicycle traffic, and is appropriate on the highest priority bicycle routes.

	IMPROVEMENT	NOTES
TRANSIT	BUS-ONLY LANES	Bus-only lanes provide dedicated roadway space for transit, which can be continued through intersections to maximize travel time and reliability benefits, while avoiding congestion.
	IN-LANE TRANSIT STOPS	In-lane transit stops allow buses to use the travel lane to pick up and drop off passengers, eliminating the need for the bus to merge back into traffic after stopping. This improves travel time for transit and is appropriate for use on high-priority transit routes, but may be preferred on routes without major transfers where dwell time is likely to be lower.
	PULL-OUT TRANSIT STOPS WITH QUEUE JUMPS	Pull-out stops are appropriate on high-priority routes where passenger loading and unloading volumes may be higher than normal, due to transfers or other activity. When combined with a near-side stop and a separate signal phase at intersections, these can also function as queue jumps for transit vehicles.
	TRANSIT SIGNAL PRIORITY	This signal infrastructure prioritizes transit vehicles by detecting oncoming buses and providing them with extra green time, allowing them to clear the intersection and improve their travel time. Transit signal priority could also mean shortening red signals to accommodate approaching transit vehicles, or by adding a signal phase dedicated only to buses and/or trains. These are appropriate for use on high-priority transit routes.
	QUEUE JUMP LANES OR QUEUE BYPASS LANES	These provide separated lanes for buses to pass queued vehicles on the highest-priority bus routes.
	FAR-SIDE BUS STOPS	Far-side stops allow transit vehicles to clear the intersection before loading and unloading passengers, reducing their delay at intersections. These are preferred at signalized intersections.
VEHICLES	DIFFERENTIAL STOP BAR LOCATIONS	Placing through lane stop bars further back from intersection than right turn lane stop bars allows unobstructed sight lines for right-turning vehicles, which improves safety for everyone.
	REDUCED CYCLE LENGTHS	Reduced traffic signal cycle lengths can result in shorter wait and travel times, and increase compliance by people walking or bicycling who wish to cross the street.
	RIGHT-TURN-ON-RED RESTRICTIONS	Right-Turn-On-Red (ROTR) restrictions can reduce conflicts between turning vehicles and people in the crosswalk. These could be applied only during peak times or throughout the day, depending on pedestrian and turning vehicle volumes.
	TRAFFIC DIVERTERS	Traffic diverters physically block vehicles from passing through an intersection, and are generally used to calm traffic in residential areas. Diverters can block one or both lanes of traffic.

As street and intersection typologies are implemented, designers should rely on more than just crash history and signal and traffic performance (which often only tell part of the story) to determine needs and appropriate intervention strategies. Decisions should be made based on existing and planned land uses, existing and projected "mode share" by different transportation modes, field observations, community and citywide goals, and community input at intersections along each corridor, too.

If crash data indicate an existing or potential safety issue, the corridor and intersection designs should mitigate existing risk factors. In such cases, a safety study should be conducted to understand the specific conditions, users, and movements contributing to collisions or near-miss events. Measures to increase sightlines and visibility, reduce speeds of through and turning vehicles, increase separation and protection of vulnerable users, restrict or prohibit problematic turning movements, modify signal cycles, phases, and timing, and increase user compliance with traffic control devices should be considered and implemented.


FRESH
RMET FOO

GENERAL IMPLEMENTATION

IV. GENERAL IMPLEMENTATION

HOW SHOULD THIS GUIDE BE USED?

The Street and Intersection Typologies Design Guide is not perfect, nor is it ever complete. It is a living document that should be updated along with changes to land use plans, zoning ordinances, laws and ordinances, transportation plans, and the habits and goals of the people in Salt Lake City. The typologies webmap (found online at www.slc.gov/transportation/2021/10/30/typologies/ will also be updated as the City's plans evolve. This section of the Guide provides general recommendations for implementing typology concepts through City procedures and policies.

This Guide's typologies are proposed designs that imagine what could be done if our streets were to be entirely rebuilt. Because the complete implementation of these design ideas is likely only in the event of a reconstruction, and because reconstructions occur only every few generations, the process of transformation may be slow.

The planning, design, and implementation of each street redesign project will still follow the City's rigorous process for selecting, designing, and engaging the public about street reconstruction projects. These typologies are simply starting points for community conversations. They are intended to form the foundations of our discussions about design possibilities, goals, and desired outcomes.

Practitioners and projects may also benefit from gleaning design ideas, direction, and community goals from these typologies as they implement short-term projects, such as tree planting, parking management, intersection and crosswalk updates, signing and striping changes, and planning efforts.

WHAT DOES THIS GUIDE NOT DO?

Intentionally, the Guide does not dictate a timeline, a budget, or a rigid approach to design or reconstruction. It is a book of ideas, a reference manual, and a better starting point for our community conversations about streets, land use, and design.

This Guide is not a prescriptive or absolute approach to designing each and every street and intersection in Salt Lake City. Because of the development history of the city, that task would be extremely difficult. It is simply a book of ideas for how to improve safety, comfort, and the design equity of streets and intersections depending on their unique environments, contexts, and place types. The Guide provides ideas for how to implement the goals and ideals found in the Complete Streets Ordinance, the zoning ordinance, community and neighborhood plans, and various transportation plans.

Nearly all public streets within the city limits as of 2019 have been included in the design and development of this Guide, its map, and its typologies. However, there are some exceptions:

- Private streets have not been assigned a typology. Those who own and maintain private streets may choose to apply the designs developed for a similarly-sized typology in the right context, if they choose.
- Some public streets, such as those in parks and open space, at the Salt Lake City International Airport, at the University of Utah, and in other special circumstances, have not been assigned a typology.

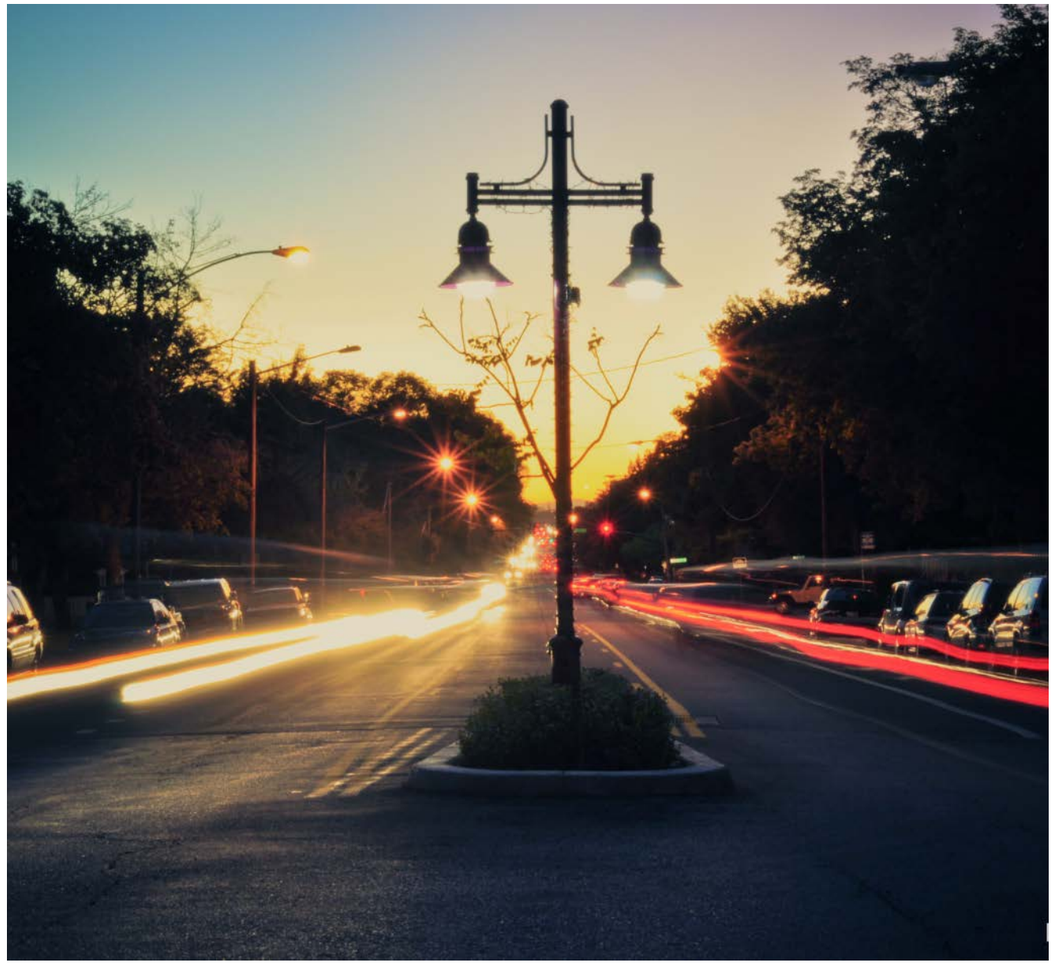
Because this is a design guide, engineering standards and details will also need to be updated so that they are in accordance with the goals and design intent of this Guide.

APPLYING TYPOLOGIES TO FUTURE STREETS

The typologies have been assigned to streets based on their existing or known, planned land uses and place types. In less-developed and select other areas in Salt Lake City, no typologies have been assigned where streets do not currently exist. As undeveloped areas of the City begin to build out, planners can refer to the "Context and Function" section of Chapter 1 of this document, which provides guidance on how land use types, transportation functions, and right-of-way priorities were combined to develop and assign individual typologies to streets.

As Salt Lake City's Planning, Transportation, Engineering, and other divisions collaborate to create a vision for these areas, street typologies will need to be assigned that reflect the anticipated land use context. City staff should consider how proposed street networks should function – what right-of-way activities should be prioritized in these areas to best complement the planned land uses? How fast should drivers be traveling and how should the full range of transportation choices and people-focused activities be accommodated on newly-planned streets? Finding answers to these questions will help staff determine which typologies are appropriate to apply in these areas.

Everywhere, but especially where development creeps closer to the Great Salt Lake and its surrounding environment, street typology designs must be responsive to drainage needs. The water table will be higher in these critical areas near the lake, with higher risk of flooding (especially during spring runoff conditions or major storms). Incorporating green stormwater infrastructure elements, such as bioswales, will help streets absorb stormwater better, reduce the need for expensive storm drain infrastructure, and ensure that the streets and the ecosystem can serve their critical functions. These streets should be cooperatively designed among the Transportation, Streets, Public Utilities, Sustainability, and Public Lands divisions and departments to create solutions that meet citywide goals and needs.



APPLYING TYPOLOGIES TO UDOT STREETS

UDOT offered specific guidelines for how the Typologies should be applied to UDOT streets within Salt Lake City, generally represented by the Two-Way Thoroughfare, One-Way Thoroughfare, and Destination Thoroughfare typologies shown in this document. Their guidance is provided below.

The Salt Lake City Street and Intersection Typologies Design Guide is an aspirational vision linking street design and land use. Several corridors within Salt Lake City are state routes under the jurisdiction of the Utah Department of Transportation (UDOT). The state code Title 72 Chapter 4 Part 1 Section 102.5 Paragraph 3 states that "state highways shall primarily move higher traffic volumes over longer distances than highways under local jurisdiction." While the movement of higher volumes of people on these corridors is their primary purpose, the Typologies Design Guide elevates other functions on these streets, including person mobility, greening, curbside uses, and placemaking. These functions will not conflict with the primary purpose of state routes.

State Route Application:

- ***LANE NUMBER:*** *The existing number of lanes on state routes in Salt Lake City will be maintained and are included in the typology cross sections applied to state routes. Certain typologies show conversion of some lanes to transit; future studies would be needed to assess the appropriateness of this conversion. Additionally, UDOT does not have authority to implement transit operations on state routes in Salt Lake City and will coordinate with the Utah Transit Authority on capital projects.*
- ***MAXIMUM TARGET SPEED:*** *Posted speed limits on state routes are currently set based on the 85th percentile prevailing speeds and range from 30 to 55 mph. However, both street design and surrounding land uses affect how fast a street should be driven (maximum target speed) and how fast it feels it should be driven (design speed). As such, when opportunities to redesign rights-of-way are planned to occur, UDOT may coordinate with Salt Lake City to ensure that maximum target and design speeds are appropriate and result in safe and comfortable environments, given land uses, any new policies, and other factors.*
- ***FREQUENCY:*** *It is anticipated that the application of the principles, design criteria, and street cross sections in the Typologies Guide may occur at various times and with various intensities, depending on the type of work being performed. For example, perhaps limited improvements may be possible because of some regular and capital maintenance activities (e.g., repaving and restriping, curb ramps, and other curb and gutter work), while more substantial changes and complete redesigns may only be possible because of reconstruction and other opportunities of significant investment.*
- ***GEOMETRIC DESIGN:*** *Will comply with the current processes and procedures as described within the UDOT Roadway Design Manual (RDM), or current State-applicable design guidance.*
- ***COORDINATION:*** *Salt Lake City and UDOT have and will continue to coordinate and evaluate where aspects of the typologies documented in the Guide align with UDOT's strategic direction and transportation*

program. This Guide is a tool to document and illustrate the goals of Salt Lake City but should not replace coordination between Salt Lake City and UDOT.

- *Prior to implementing transportation solutions, projects that are part of UDOT's transportation program are required to go through UDOT's project development process. Part of this process involves formally identifying what is needed of the street, how these needs can be addressed, and the impacts that would occur as a result of doing so. This process follows the procedures of The National Environmental Policy Act (NEPA) or UDOT's State Environmental Policy (State). It may consider the typology identified by Salt Lake City, but would select the solution identified through the NEPA or State process. This may or may not result in the cross-section identified in the Guide.*
- *Implementation of active transportation facilities, as included and designed in the typologies applicable to state routes, is contingent on also being included in an approved, local active transportation plan, such as Salt Lake City's 2015 Pedestrian & Bicycle Master Plan.*

As noted in UDOT's language above, Salt Lake City and UDOT will need to coordinate implementation of these typologies on state routes, on a corridor-by-corridor basis. Salt Lake City's intent is to work collaboratively with UDOT to create public spaces, even on state routes that meet the needs of the community and surrounding land uses. The agencies will need to work together to achieve these goals.


NEW
GRAND
HOTEL

FURTHER ENGAGING STAKEHOLDERS AND THE PUBLIC

Planning efforts should include close coordination between Salt Lake City's internal divisions and departments, as well as with external agencies, as applicable, such as UDOT, the Utah Transit Authority (UTA), and the Wasatch Front Regional Council (WFRC). Engaging internal stakeholders early in the budgeting, planning, and design processes will result in increased support throughout the City, higher project quality, and better integration between planning, construction, and life-cycle maintenance for each street's typology implementation.

Stakeholder and public feedback, along with the typology designs, should guide corridor redesigns and implementation. As typologies are implemented on individual corridors, City and other agency staff should engage community members at multiple points in the planning and design process. Outreach efforts could include people from a variety of groups:

- Community councils
- Residents
- Local business owners and property owners
- Business associations, such as the Downtown Alliance and the River District Chamber
- The City's Transportation Advisory Board, Bicycle Advisory Committee, Accessibility Advisory Committee, and Disabled Rights Action Committee
- Local schools, school districts, and higher education institutions
- City council staff and representatives
- Transportation advocates
- The general public
- Additional stakeholders as appropriate to individual corridors

Public feedback can be helpful at several key points in the planning process:

- Early on, when identifying needs and opportunities along a particular corridor;
- In the middle, when the City has ideas for addressing those needs and opportunities, to which the public can respond;
- Towards the end, when the City is ready to recommend a design for implementation; and,
- After construction is complete, to gauge the impacts of changes

Stakeholder and public feedback need not be limited to these stages in the planning process, but these could be considered suitable "touch points" between the City and the public as typologies are considered for individual corridors.

PRACTICES, PROCEDURES, AND POLICIES

Salt Lake City can immediately establish practices, procedures, and policies to support implementation of the typologies. Some practices, procedures, and policies may also require coordination with transportation partners like UDOT and UTA to ensure the desired outcomes.

- **PRACTICE:** an action that internal Salt Lake City divisions (such as Transportation, Engineering, Planning, etc.) take with minimal revision to the City's current operating paradigm.
- **PROCEDURE:** a formalized step within Salt Lake City's permitting, approval, or other processes that may need to be modified to support more livable streets.
- **POLICY:** a formal statement, document, or ordinance that would generally be adopted by the City Council or other legislative body.

RECOMMENDED PRACTICES

INCREASE INTERNAL COLLABORATION

City staff, leaders, and elected and appointed officials need better internal coordination to create livable streets in Salt Lake City. Collaboration between City departments and divisions is especially important in the early phases of planning and funding the application of a typology to a particular street. Early internal collaboration could help resolve issues such as:

- Mismatched expectations between those designing a streetscape and those responsible for its maintenance and operation;
- Appropriate sizing of green spaces to ensure a healthy urban forest and to incorporate sustainable infrastructure into street design;
- Conflicts between streetscape and greenery designs and intensities, and the utilities above and below ground, such as sewer water, power, and lighting; and
- Appropriate licensing for areas of the public right-of-way to include private establishments' activities, such as outdoor dining and sidewalk furniture, typically organized through the City's real estate services teams

FIRE DEPARTMENT AND OTHER AGENCY COORDINATION

Compliance with the City's fire and building codes and emergency vehicle access regulations should be a focus when implementing these typologies. Early in the typologies implementation process, Salt Lake City staff and leaders tasked with planning and design of the public right-of-way should reach out to the Fire Department and Building Services Division to discuss corridor-specific goals, issues, and concerns. These discussions may help resolve conflicts early on between emergency vehicle access concerns and Citywide sustainability and transportation goals. Best practices for these discussions may include exploring best practices from other communities or staging mock emergency events with temporary streetscapes in order to ensure access will be appropriate. City attorneys may be involved in these discussions, as well, to help participants understand the legal risk and exposure when deciding on ways to reconcile emergency access and transportation needs.

In addition to higher levels of internal coordination, planning efforts should engage external transportation stakeholders early on, as well. UDOT controls the design, maintenance, and operation of streets and intersections within Salt Lake City that are under state jurisdiction, and often manages other street projects that are built with federal funding. They also have an interest in how Salt Lake City's streets intersect with state routes. Similarly, UTA's plans for bus and rail infrastructure will need to be incorporated into individual corridor typology designs, and early communication with UTA will help facilitate a more efficient planning, funding, and design process. WFRC offers technical and financial support to communities like Salt Lake City, with potential planning, design, and construction funding sources through the Transportation and Land Use Connection program as well as the Regional Transportation Plan. Communicating early with these agencies will make sure that the design and construction process are as smooth as they can be.

DEVELOP DATA AND TOOLS

To ensure that the new typologies work as intended and meet the goals of this Guide and the City's residents, the City should gather data that help understand how streets function and whether changes are making a positive or negative impact.

PERFORMANCE MEASUREMENTS

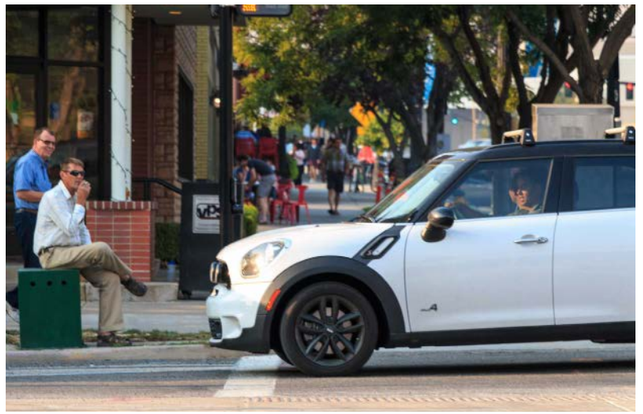
The typologies prioritize five critical functions of the public right-of-way. To ensure the successful implementation, operations, and maintenance of the typologies, Salt Lake City should collect and publish before, after, and ongoing data to measure whether the typology designs have the desired outcomes on individual corridors. The City could gather the following performance measurements, focused on each of those priorities.

PERSON MOBILITY:

- Transportation measures such as the percentage of people walking, driving, biking, or taking transit, and the percentage of children among those walking, biking and taking transit
- Design measures such as the percent of right-of-way dedicated to non-auto transportation users, or the pavement condition index for sidewalks, crosswalks, curb ramps, and bike lanes

GREENING:

- Environmental measures such as runoff water quality, localized air quality, and the percent of productive and efficient landscaping that is drought tolerant and supports wildlife
- Design measures such as the percent of shade cover along a street, ratio of pervious to impervious surface, or the percent of right-of-way dedicated to green space



PLACEMAKING:

- Percent of right-of-way dedicated to non-transportation activities, or "space for staying"
- Economic measures such as retail sales or vacancies
- Urban design measures such as imageability (being distinct and memorable), having a human scale, street enclosure, street frontage transparency, amenity density, and complexity of the urban environment
- Measures of activity such as the number of children present, number of pets present, the average length of a person's visit to the area, and the hours of daily operation

CURBSIDE USES:

- Measures of activity such as transit boardings and alightings, bike rack supply and demand, and rate of parking turnover and availability
- Human comfort measures such as transit stop quality and transit passenger comfort ratings
- Design measures such as the percent of a 660'-long block face dedicated to individual curbside uses such as transit stops, vehicle parking and charging, emergency access, passenger loading and unloading, ramps/driveways/corners, utilities, bike share stations, and curbside bike lanes

VEHICLE MOBILITY:

- Safety measures including crash and severity rates, as well as target, operating, and actual speeds
- Efficiency measures such as person throughput (in cars, transit, and active transportation modes)
- Infrastructure measures such as the pavement condition index

While this list of performance measures is not comprehensive, gathering and tracking these metrics consistently for individual projects still requires considerable effort. The City should begin by focusing on metrics that can be easily gathered and monitored on a regular basis (i.e., annually), beginning before project implementation and extending for several years after construction ends. Some simple metrics that represent an easy starting point could include:

- Percentage of right-of-way along each street dedicated to placemaking activity
- Percentage of right-of way along each street dedicated to green space
- Percentage of right-of-way along each street dedicated to people walking, bicycling, and in mobility devices
- Transit boardings and alightings data, readily available from UTA for each of its bus and fixed rail routes
- Crash data

ROADWAY RECONFIGURATION TOOL

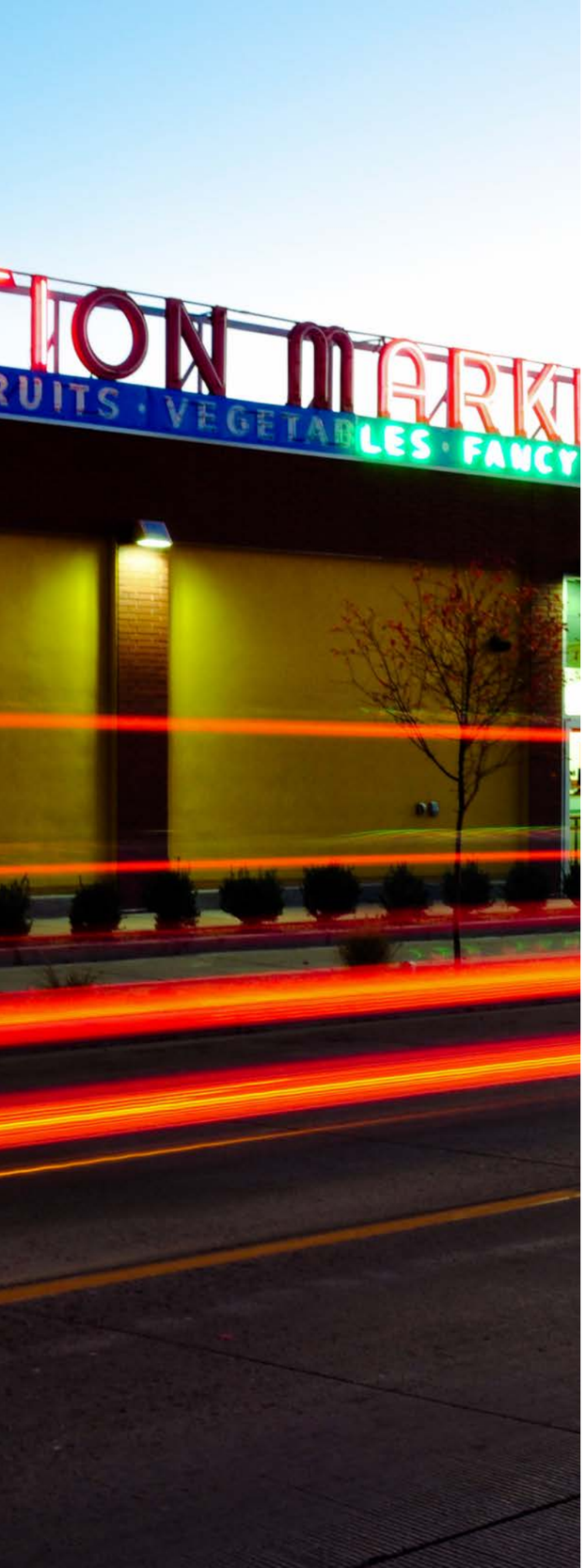
Salt Lake City has long recognized that the widths of its rights-of-way are a blessing, but the widths of its roadways are often a curse. However, overly-wide roadways (curb to curb width of asphalt or concrete) within ample rights-of-way represent an opportunity to create more space for non-automobile transportation choices and other uses of the public right-of-way.

The City may benefit from a simple spreadsheet-based tool that helps determine the feasibility of travel and turn lane reductions. While the City does not currently have such a tool, one could be developed. It could be used when implementing typologies, and as Salt Lake City evaluates opportunities for lane reductions during routine repaving and restriping maintenance activities. The tool could incorporate data showing daily and peak hour traffic volumes, turning volumes (including for two-way left turn lanes in the center of the street), on-street parking utilization, total pavement width, observed traffic speeds, observed and latent bicycle demand, or other factors. It may help decisionmakers base potential project improvements and typology implementation on data rather than perception, at project and citywide scales.

RECOMMENDED PROCEDURES

Salt Lake City has many internal procedures designed to provide a comprehensive and organized approach to project development, for both internal and external staff and leaders as well as for the public doing business with the City. These include various design review processes, checklists, and applications that should be modified in order to improve implementation of the goals and components of this Guide and its typologies, as well as a comprehensive Complete Streets approach.

- The City's Business Licensing and Real Estate Services teams, as well as the Planning Division, need to be involved in the process of making public spaces accessible and creating areas for play, respite, and dining with the public right-of-way. These teams are responsible for part of the interface between buildings and public streets, so design and approval procedures need to integrate their feedback.
- Typology design ideas could be included in encroachment permitting processes. The City's real estate services team is involved when this applies to City rights-of-way; for state routes, this includes submitting to UDOT for approval until an encroachment agreement is in place.
- The Planning Division has a Development Review Team (DRT) process for the development of property, with a checklist and design manual that is used by many divisions' staff members (and sometimes the public). Typology design ideas could be incorporated into this process, and the Building Services Division's Open Counter website could also include references to this Guide as well as other Complete Streets Ordinance requirements.
- The City should incorporate best-practice design standards for how to equitably, efficiently, and safely incorporate electric vehicle charging stations in the public right-of-way as part of the design review process, without compromising space for people not using motor vehicles.
- The City should include procedures for integrating typology design ideas into the Capital Improvement Project application, funding, and implementation processes; Community Development Block Grant application review; budgeting processes; small cell tower guidelines; and all City property projects.
- The City should create internal guidelines to determine which street typologies to prioritize for public art. Art may take many forms, such as environmental remediation, sculpture, functional furniture, concrete, and more.



RECOMMENDED POLICIES

Some aspects of implementing the Salt Lake City Street and Intersection Typologies require a more formal approach, such as written policies or revisions to existing codes and ordinances. During the process of developing the typologies, several potential policies were identified, including those described below.

REVISE ZONING ORDINANCES

The City should revise the zoning ordinances and development review codes to incorporate references to these typologies. Such revisions will ensure that this Guide and the zoning and development codes and processes speak to one another, ensure compliance with fire code requirements, and integrate the Fire Department's feedback earlier in the review process.

COMPLETE STREETS POLICY

Salt Lake City's current Complete Streets Ordinance, provided in Chapter 14.06 of the Salt Lake City Code, was adopted in 2010 and requires the City to consider people walking and bicycling as it designs and builds streets. As part of the typologies development process, Salt Lake City prepared a memorandum to recommend needed improvements to the Complete Streets Ordinance.

The memorandum identified the following high-priority revisions to the current ordinance:

- Expand modes to include transit, ride share, scooters, electric car share, and other forms of transportation and other elements of the right-of-way beyond bicycling and walking
- Create streets where persons of all ages, abilities and circumstances will be able to meet their daily transportation needs
- Establish a process for incorporating Complete Streets elements into new construction and retrofits
- Advance transportation equity by investing in underserved communities and involving people who have been typically underrepresented
- Create an explicit connection between the Typologies Design Guide and other transportation and modal master plans
- Provide guidance on how to coordinate with UDOT on Complete Streets issues
- Provide consistent design guides and standards
- Include green infrastructure in the public right-of-way
- Clarify and formalize the membership, responsibilities, and roles of the complete streets committee

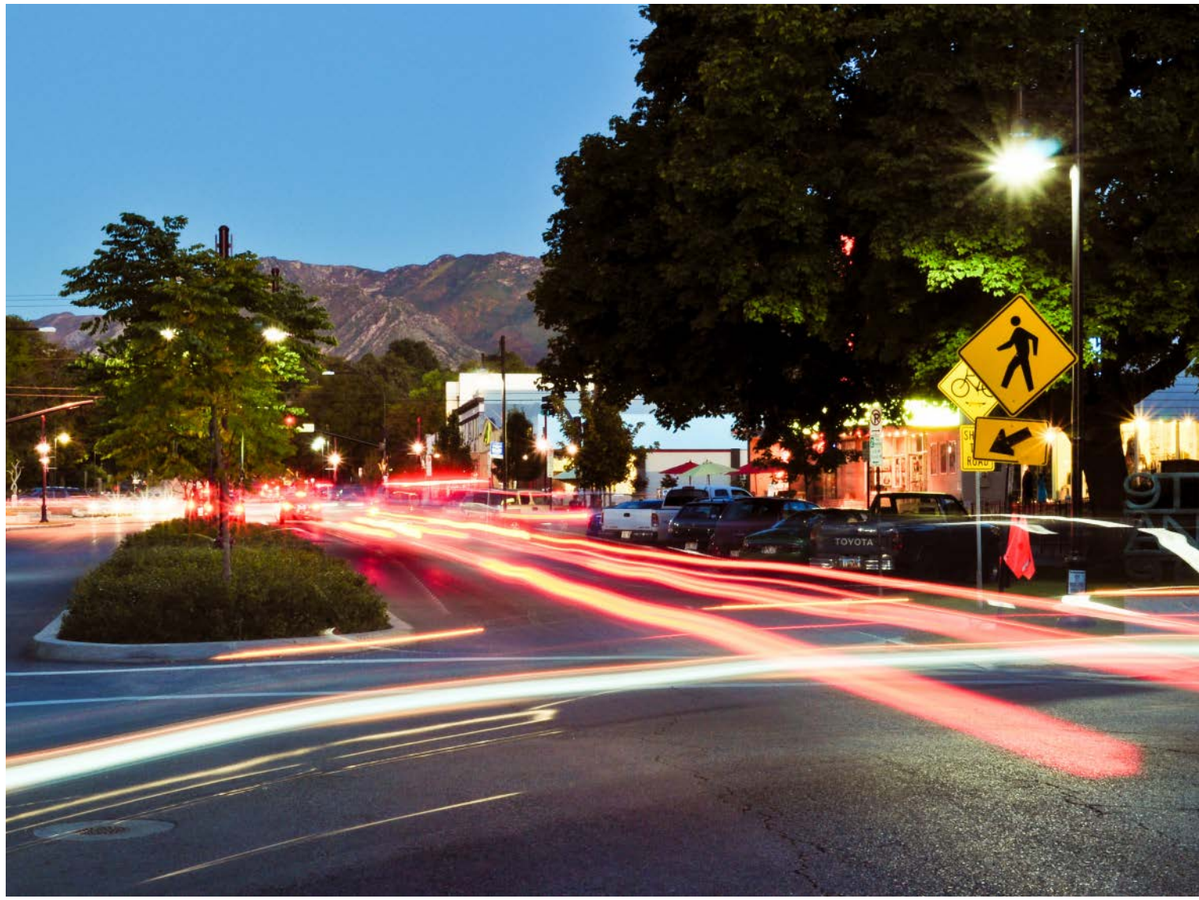
TRAFFIC LEVEL OF SERVICE (LOS)

Most cities and transportation agencies have internal policies stating their tolerance for traffic congestion, expressed as "Level of Service". The Level of Service (LOS) metric generally refers to the amount of delay, in seconds, that drivers must wait before passing through an intersection. Traffic engineers describe LOS on a scale from A (no delay) to F (an unacceptable level of delay, assuming 80 seconds or more of delay per vehicle at a signalized intersection). Many cities and agencies consider LOS D as the threshold beyond which traffic congestion needs to be mitigated.

However, while many people may value the ability to drive quickly and efficiently, decisionmakers, engineers, and planners must consider all of the undesirable consequences of prioritizing a high traffic level of service, both now and into the future. Improving traffic level of service often means expensive widening and adding more travel and/or turn lanes to a street, which make streets less friendly to people walking or bicycling, reduces property values, increases crashes, induces faster driving, and has an increasingly diminishing return on investment with each lane added. Population growth and transportation demand is exponential; roadway expansion is, at best, linear, and will never meet demand.

On the other hand, if cities choose to tolerate a lower level of service for motor vehicle traffic, they acknowledge that they accept some traffic congestion in exchange for safer and more comfortable conditions for everyone, more space to meet the needs of a growing city, and more sustainable budgets.

In place of traffic level of service metrics to assess the system's performance, Salt Lake City could instead choose to consider level of traffic stress impacts to people bicycling, walking, taking transit, and using mobility devices. The City may also wish to consider the connections between traffic level of service and vehicle miles traveled, acknowledging that a higher traffic level of service leads to more vehicle



miles traveled, which in turn contributes more of the greenhouse gas emissions that exacerbate the impacts of climate change.

Salt Lake City may wish to adopt a policy that clearly states its position regarding level of service, answering the questions:

- Is the City willing to tolerate vehicle congestion and slower speeds during peak times in certain contexts? If so, how many minutes or hours during the day is the City willing to accept vehicle congestion, and at what levels?
- Is the City willing to actively pursue projects that will knowingly cause vehicle congestion, for the purpose of improving the quality of the environment for all other people?
- What metrics will replace level of service, as a measurement and as a way of thinking, decision making, budgeting, and engineering?

A policy could outline this position and also identify the contexts or time frames in which the City is willing to tolerate congestion.

CONFLICTS WITHIN THE RIGHT-OF-WAY

The public right-of-way is a busy place. Above ground, people walking, bicycling, and using mobility devices compete for space with moving cars, parked cars, transit vehicles, electric vehicle charging stations, landscaping, overhead utilities, and areas along adjacent land uses. Below the surface, an array of underground utilities must be accommodated and meet design criteria in order to continue safely meeting the needs of the community. Some features of the typologies' proposed right-of-way designs conflict with other features in the right-of-way. City and outside agencies and stakeholders suggested that policy actions could help resolve conflicts.

SIDEWALK FURNITURE

The City's Real Estate Services team works with residents and business owners, as well as public agencies, to address encroachment issues in the City's public rights-of-way and license use of the public space for private purposes, among its myriad other tasks. For state routes, this includes submitting to UDOT for approval until an encroachment agreement is in place.

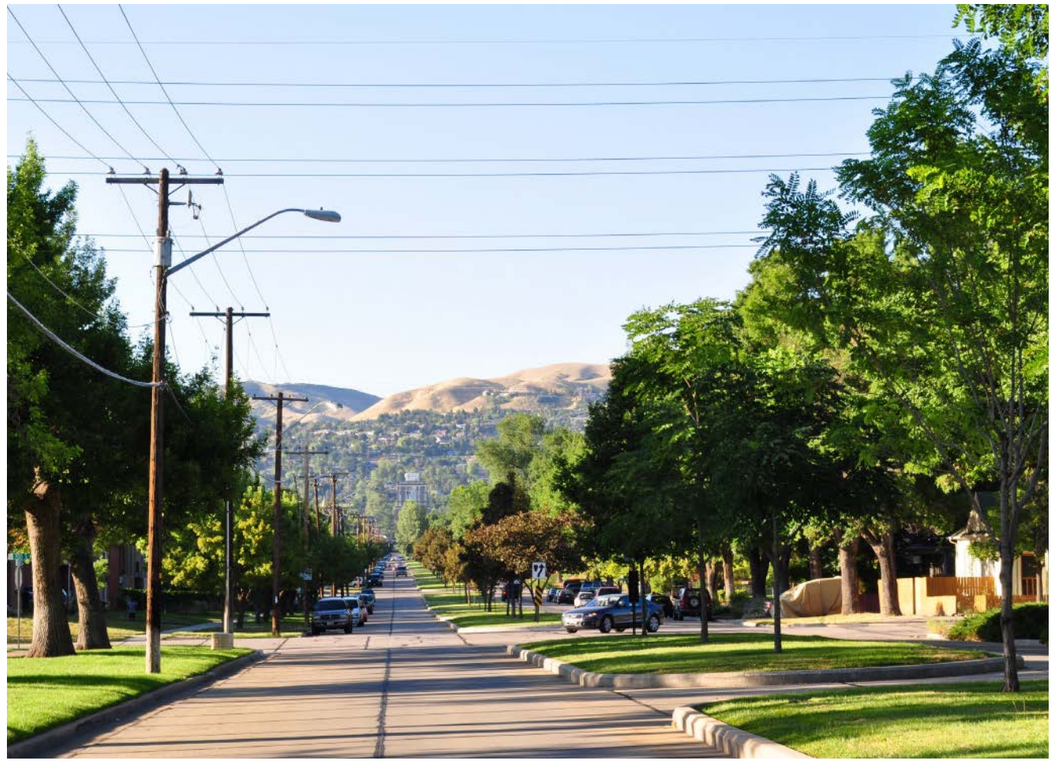
As sidewalk dining has become more popular throughout the city, the Real Estate Services team has struggled to help the public understand regulations for outdoor furniture, and to ensure that the City is able to meet minimum acceptable accessibility requirements for people walking and others using sidewalk space. While many of the Guide's typologies provide wider sidewalks for uses including walking and sidewalk dining, a sidewalk furniture ordinance would help regulate the use of the sidewalk and establish clear lines of responsibility for enforcement. At a minimum, stakeholders agreed that more City divisions (such as Real Estate Services, Engineering, Compliance, and others, such as UDOT, when applicable) need to participate in decision-making around this use of the right-of-way, and ultimately that someone needs to be in charge of making final decisions for the group.

UTILITY CONFLICTS

For many Salt Lake City streets, especially those intended to provide greening and urban forestry benefits, there are potential conflicts between the need for a healthy tree canopy, reduced load and demand on pipes, and the underground and overhead utilities themselves. In addition, implementation of some typology designs may require and should budget for utility relocation or other mitigation measures.

Tree branches can interfere with overhead wires as they grow upward, and tree roots can impact underground pipelines as they extend downward. The implementation of typologies' designs must carefully consider the placement of streetscape improvements relative to public and private utilities, and vice versa. Salt Lake City may wish to consider a policy that specifies the process for addressing these conflicts when retrofitting an existing street to implement a typology's proposed design, including identifying impacts to underground and overhead utilities, recommendations for resolving utility and streetscape conflicts, and the cost and potential funding sources to resolve the conflicts. Many of these issues will also be addressed in Salt Lake City's Urban Forest Action Plan, which is forthcoming.

In some instances, private development may play a role in implementing typologies on established rights-of-way. This may result in relocations of multiple utilities, the cost of which may already be partially borne by the developer. Salt Lake City could establish a policy to delineate the role of the private sector in implementing typologies, with input from various City divisions and departments. As noted earlier in this Guide, Salt Lake City acknowledges that UDOT will have some implementation authority on state routes and perhaps also on streets built with federal funding. As corridors are designated for improvements, Salt Lake City intends to work closely with UDOT to create public streets that serve travel needs as well as the larger community affected by each street.



CONSTRUCTION AND MAINTENANCE

The street designs envisioned in this Guide are often very different than the streets Salt Lake City residents are familiar with. They will require different construction and maintenance strategies and budgets than many are used to, including staff, elected leaders, residents, and business owners. Typology implementation on individual corridors should move forward with clear plans for ongoing maintenance and operations, but lack of immediate maintenance funding should not prevent necessary improvements to the public rights-of-way.

When Salt Lake City implements typology designs on individual corridors, the planning process should involve coordination with the various divisions and departments charged with the maintenance of assets within the public right-of-way (such as Streets, Facilities, Public Lands, Salt Lake County, the University of Utah, and UDOT) to ensure that construction details and ongoing maintenance needs are well understood and have a sustainable funding source. For example, increasing the miles of separated bike lanes throughout the City will require additional specialized maintenance vehicles, as well as additional staff to conduct those maintenance activities. The same is true of adding more green space, trees, and diversifying curbside uses. Most infrastructure, outside of the roadway, on UDOT streets is currently maintained (including snow removal) by Salt Lake City. Some maintenance activities could be conducted by external maintenance contractors, but this would also require additional funding to keep the new and improved designs functioning at the desired level.

As typology implementation expands, Salt Lake City may establish a dedicated funding stream to ensure that the redesigned streets meet expectations and can be maintained appropriately once they are built. The City could also modify maintenance levels depending on changing conditions such as rain and snowfall – for example, in low-water years, the City could opt to selectively water only the high-investment landscaping such as trees, while allowing vegetation that could be more easily replaced to die if severe drought or low water supply conditions exist.

CORRIDOR IMPLEMENTATION

V. CORRIDOR IMPLEMENTATION

The Salt Lake City Street and Intersection Typologies will be implemented on a corridor-by-corridor basis as individual streets are redesigned and rebuilt throughout the City; there is currently no implementation schedule or budget. This section identifies several topics to be addressed at a corridor level. These should not be considered comprehensive, however; City staff responsible for implementing the typologies will need to be flexible and adaptable throughout the design process in response to a range of needs.

PAVEMENT QUALITY

Salt Lake City acknowledges, with these typologies, that some of its streets are too wide or otherwise inhospitable for people walking, bicycling, using transit, using mobility devices, or enjoying public spaces. Reduced roadway width may be one outcome of implementing these typologies. The City will need to be prepared to address some technical challenges associated with reducing the roadway width for vehicles.

For example, if the City decides to remove lanes of traffic on a roadway by shifting the curbs closer to the center of the street, the existing vehicle traffic volumes will be more concentrated on a smaller section of the roadway. The underlying pavement depth may not have been originally designed to handle higher vehicle volumes. However, through the implementation process, the pavement depth could potentially be increased to support a heavier or more frequent vehicle load. Salt Lake City's Engineering and Streets staff should be involved to make sure that corridor redesigns consider appropriate and high-quality pavement engineering. Salt Lake City could also reduce the vehicle demand on the roadway by changing land uses and street design.

IMPACTS TO UNDERGROUND UTILITIES

Similarly, reduced roadway widths may affect utility lines that are located underground. Full implementation of many proposed typologies are likely to require relocation of both private and public utilities. If curbs shift toward the center of the street, designers should ensure that utilities are still easily connected, that water drains off the roadway and other street elements appropriately, and that pipes and manholes are located underneath travel lanes or center turn lanes (and not bike lanes, sidewalks, driveway approaches, or trees) whenever possible.

If the curb lines move inward, designers should ensure that utility pipes and their access points are still located underneath travel lanes or center turn lanes. These should not be located underneath drive approaches, sidewalks, underneath trees, or in bike lanes, in order to avoid disruption of private property access and bike lane activity, and to protect long-term community investments like mature street trees. Designers should also be aware of State and City codes that require separation between certain underground utilities in the name of public health (for instance, between water and sewer lines, to avoid potential contamination of water sources). Shifting underground utilities is

an expensive task, and may cause other underground utilities to be moved to maintain the required amount of distance. This could impact private utility companies as well. The current status of individual utility franchise agreements may help clarify who would/may be responsible for relocating each facility when typologies are implemented. Additional funds may be required to relocate infrastructure to fully implement the desired vision as laid out in this Guide.

Street reconstructions are often generational investments that may coincide with the need for utility replacement or relocation, as well. Timing the implementation of typologies to coincide with street reconstruction and utility projects will improve the quality of the built environment and reduce the costs and impacts of improvements. Additional funds may still be required, however, in order to relocate utilities and fully implement the desired vision as laid out in this Guide. At this time, Salt Lake City does not have funds to implement the designs identified in this Guide.

SNOW STORAGE AND STORMWATER DRAINAGE

Given Salt Lake City's large rights-of-way and climate, it is important that the design, funding, operations, and maintenances processes solve drainage, snow clearing, and snow storage issues. Wide, impervious roadways create excessive runoff that, during storm events, may exceed the capacity of existing utilities. Narrower roadways, more pervious area, and "softer" streetscape features will ensure that existing utilities are not overloaded and that stormwater is appropriately handled before it enters a pipe. City stakeholders support green infrastructure to benefit water quality and mitigate the impacts of climate change and flooding, create a sense of place, mitigate urban heat island effect, and promote active transportation. Further, the Department of Public Utilities encourages and sometimes requires green infrastructure to be installed or reviewed as an alternative to traditional stormwater treatments.

Appropriate snow storage and drainage solutions will result in bike lanes, travel lanes, and sidewalks that are free of snow, ice, and water.

City stakeholders raised several concerns regarding existing streets with separated bike lanes. In the past, when snowplows cleared the travel lanes (and sometimes the adjacent parking lanes), the cleared snow landed in the bike lane, or on the sidewalk, or in a transit stop. While Salt Lake City has addressed this issue by purchasing snow removal equipment specifically for the bike lanes, future implementation of raised and separated bike lanes outside of the roadway will require an even more detailed approach for an even better user experience.

FIRE AND EMERGENCY RESPONDER ACCESS

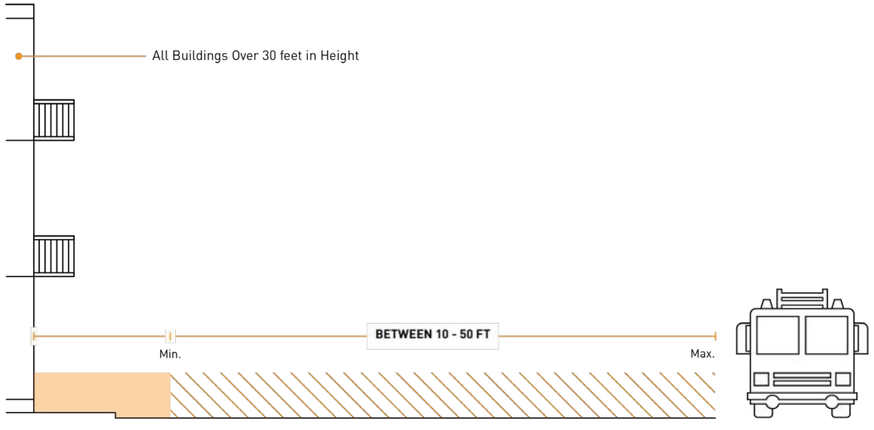
Salt Lake City's Fire Department follows the International Fire Code (IFC) guidelines as they apply to the design of buildings and the public right-of-way. The goals and designs of the typologies are, at times and in certain circumstances, at odds with the IFC and the guidelines found specifically in the IFC (specifically in Appendix D to the Code).

Currently, the code states that an aerial apparatus (ladder truck) should be located at least 15' and no more than 30' away from a building taller than 30'. Likewise, a 26' unencumbered area (exclusive of high back curbs, parking, trees) must be preserved for an apparatus and its hoses to be passed by another vehicle. Because the strict application of this guideline, in many cases, prevented the quality of urban form and street design desired by the City and its residents, the Fire Department, Building Services Division, Planning Division, and Engineering Division revised this guideline to allow for no closer than 10' and no farther away than 50'. Where buildings are shorter than 30' and aerial apparatuses are not required, the preferred width can be as narrow as 20' (26' within 20' of a hydrant), and no minimum or maximum setbacks are required. These guidelines are shown in the illustration to the right.

These guidelines were negotiated between the Fire Department, the Planning Division, and other City groups to allow for more flexibility in streetscape design while still addressing safety and emergency response concerns and have been officially adopted. Individual corridor designs should still be coordinated with the Fire Department at a street-by-street level as typology implementation takes place throughout the City.

AERIAL FIRE ACCESS PROXIMITY REQUIREMENTS

PROPOSED CODE



AERIAL FIRE ACCESS PROXIMITY REQUIREMENTS

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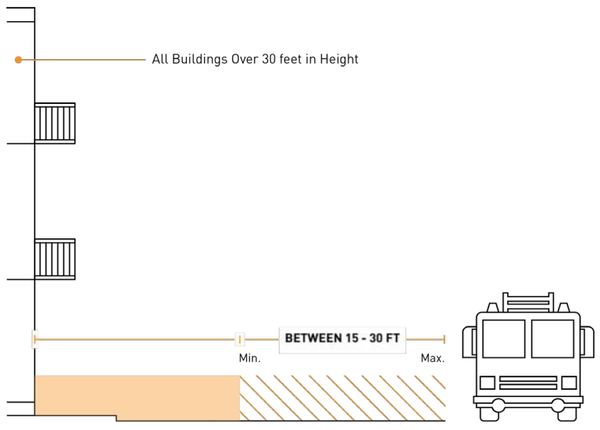


CRITICAL DIMENSIONS

TAC members and other project collaborators provided guidance on important spatial requirements, or "critical dimensions", that would allow the typology designs to be visionary basing them in current standards and best practices, and allowing for changes and flexibility in the future when said standards may also change. These include preferred measurements for bus stops, shelters, and pull-out bays; transit stations and light rail lines; sidewalks and bike lanes; sanitation vehicles; fire trucks; streetlight spacing; curb and gutter heights and widths; lane widths; park strip and planting zone widths; and other needs. These details should be considered as supplemental to Salt Lake City's design standards developed by the Engineering Division and Department of Public Utilities.


90 MIN PARKING
8:30 AM TO 10:30 PM
RESIDENT PARKING AREA
AREA 5
SLOW
CHILDREN
331


DESIGN GUIDE
DEVELOPMENT
339
OPEN

VI. DESIGN GUIDE DEVELOPMENT

BACKGROUND

HISTORY

Salt Lake City, as established in 1847, was originally designed with 10-acre blocks, 660-foot block faces, 82 or 132-foot-wide streets, and a self-sufficiency-inspired land use plan as far as the eye could see. However, this plan (or "Plat of Zion") was, in large part, abandoned in the late 19th century in favor of smaller, privately developed subdivisions and streets, as well as major streets that served an increasingly capitalistic, rather than an agrarian collective, society.

Beginning with the development of the "Big Field" area south of 900 South, developments in the late 1800s and early 1900s disrupted the strict block and street size standards of earlier pioneer city-building practice. As Salt Lake City expanded south of 900 South, east of the fault line near 1100 East and 1300 East, and west of the Jordan River, it no longer boasted a single urban form. Since then, many waves of development have occurred, each with their own unique political, engineering, planning, and design challenges and decisions. Even when land uses and transportation needs are the same on two segments of the same street, differing development standards may have resulted in drastically different streets (e.g., 1200 West north (newer) and south (older) of 600 North). This disconnect between street design, roadway width, and the land uses they serve is the reason why Salt Lake City needs this Guide: our streets need to meet the demands of the communities that live, work, and play along them, and that will require adaptation of the public right-of-way to change how the space is allocated and used.

RELEVANT PLANS, DOCUMENTS, AND DATA

Previous planning efforts became the foundation for the typologies. Salt Lake City's adopted Transit and Pedestrian & Bicycle Master Plans highlighted streets where certain transportation users should be prioritized with particular infrastructure investments. Community land use plans provided guidance on each neighborhood's vision for what they wanted to be in the future. The planning documents and reference guides applied in developing these typologies are listed in the Reference Materials section of this Guide.

In addition, City staff specializing in urban forestry, land use, zoning, urban design, stormwater management, utilities, parks, and sustainability advised on the design, maintenance, and operations of public rights-of-way to ensure that the typologies' designs not only served public needs but took into account how crews maintain these streets in perpetuity.

MEETING 1

At the beginning of the process, TAC members offered their ideas on what it means to have livable public spaces. Members noted many characteristics that make a street livable and memorable:

- Safe and comfortable spaces to walk and ride a bicycle
- Greenery and bright colors in public streets and spaces
- Places for people to sit, talk, play, relax, and watch other people
- Places where people can be around other people but also be alone/ semi-private spaces where they can observe the scene around them

CITY STAFF AND STAKEHOLDER FEEDBACK

The typologies were developed collaboratively with representatives from a range of Salt Lake City divisions and departments, as well as other transportation agencies. These representatives were part of the Technical Advisory Committee (TAC) identified in the Acknowledgements section of this report. The TAC met three times during the project.

The TAC members noted, during this discussion, that the divisions they represented often did not have the power or resources to create public spaces that meet this ideal. Representatives from different divisions also realized that a great deal more coordination will be needed in the future in order to make Salt Lake City's streets more livable and appealing. They noted barriers that prevent them from coordinating towards shared goals, such as:

- People often don't know their counterparts at other divisions in the City, and don't know who to talk to about specific issues;
- Divisions and departments within the City don't always share the same priorities and sometimes have competing interests or are competing for limited funds;
- Many divisions have their own checklists for their planning and review processes, which other divisions view as "jumping through hoops" rather than having a collaborative process; and
- Public Services (operations and maintenance) representatives felt that projects get implemented without considering how the ongoing maintenance will be performed or funded.

MEETINGS 2 AND 3

Later in the process, the TAC provided feedback on individual typologies, how they were applied to individual streets, and how they would be implemented and maintained in the future.

As the typology designs were created, the TAC provided detailed review and comment to ensure that the appropriate right-of-way elements were included and that various division and departments internal to the City as well as external public agencies had buy-in on the final results.

UDOT FEEDBACK

Staff and leadership from the Utah Department of Transportation (UDOT) participated in the TAC and provided feedback on street typologies for both Salt Lake City streets as well as streets owned and maintained by UDOT. Please read their guidance applying typologies to state routes in Section IV, "Applying Typologies to UDOT Streets."

PUBLIC FEEDBACK

There were three distinct public input periods during the development of this Guide.

The first (2019) asked the public to consider which functions of the public right-of-way were most important, depending on common place types they might visit throughout the day (home, school and parks, work, and shopping). 1,200 people participated in this first round. Person mobility was identified as the most important function of the public right of way. This is true overall, in every place type, and in responses from every cross section of survey respondents, too, including people who drive regularly but never or rarely walk or ride a bicycle.

The second (2020) asked people to let the City know if we interpreted their 2019 priorities correctly in the execution of the proposed typology designs. Nearly 4,000 individual comments, surveys, and emails were received in the second round. Participants' concerns were primarily focused on parking on neighborhood streets, the number of lanes on medium and large streets, and how the typologies would be implemented. A common theme in the feedback received during the second round was a concern about the effects of lower design and target speeds. While many people understandably want to get where they are going as quickly as possible, the goal of these typologies is to prioritize the comfort and safety of all people, homes, and businesses, while providing more transportation choices for everyone. Lower design and target speeds reduce the severity of vehicle crashes, especially those involving people walking and bicycling, who are traveling by bike or on foot and who are the most vulnerable to injury. Many typologies are designed to achieve

this outcome in places where placemaking and person mobility are high priorities.

The third (2021) asked people to review the revised typologies, new intersection design guidance, and the compiled Design Guide document.

Public outreach results are provided on the following pages.

Fall 2019

Street Function Priorities Survey
Graphic Summary Report
Salt Lake City Street & Intersection Typologies Design Guide

The Guide will create new definitions and designs for 15 distinct street typologies. Each will consider land use contexts, functions of the public right-of-way, and citywide and neighborhood goals to determine the allocation of space to different uses. The Guide ensures that every street works better for everyone, by design.

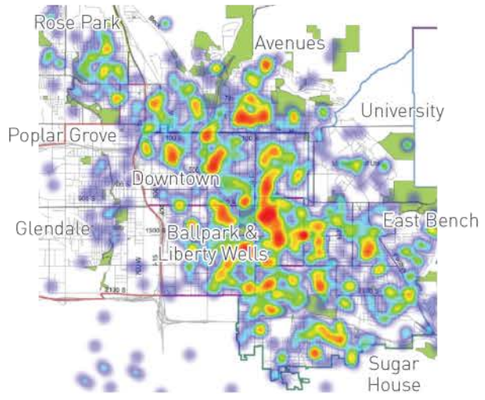
From August to October 2019, nearly 1,200 people ranked the importance of the five essential (and often competing) functions of the right-of-way, depending on location.

Five Functions of the Public Right-of-Way

Person Mobility	The movement of people walking, using mobility devices, & bicycling.
Greening	Livability, shade, & environmental sustainability goals through street trees and vegetation.
Placemaking	Activity, vibrancy, and streets as places to be rather than just to travel through.
Curbside Uses	Bus stops, street parking, pick up/drop off, bike parking, & deliveries of goods.
Vehicle Mobility	The movement of vehicles & goods (including transit, automobiles, and freight).

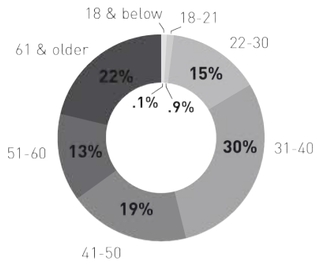
Demographics

The 1,183 respondents were geographically diverse, yet only a few who live or work outside of Salt Lake City took the survey. Glendale and Poplar Grove were the least-represented neighborhoods (see below). Respondents skewed slightly older and more Caucasian than Citywide averages, and were predominantly homeowners.

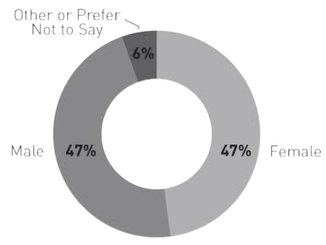


Geographic diversity of respondents, mostly within City limits

Survey Respondents' Ages



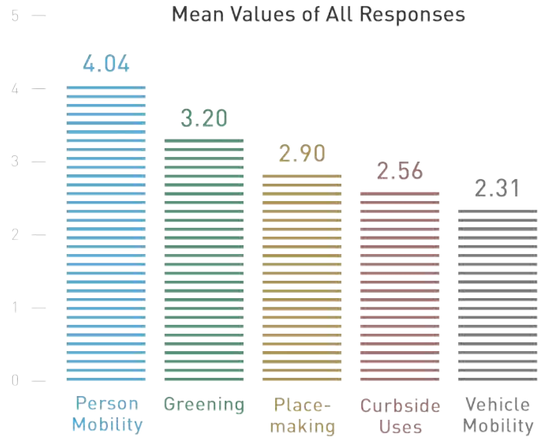
Survey Respondents' Genders



How would you prioritize these five functions, especially on the streets in your everyday life?

Note: 5 is highest priority, 1 lowest.

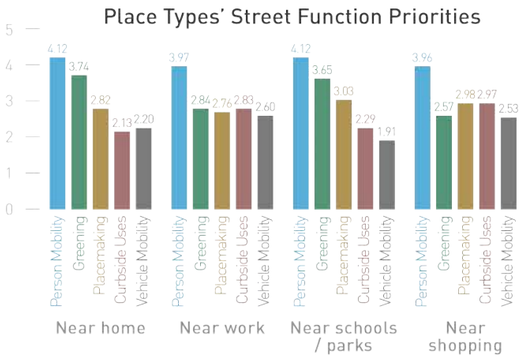
Mean Values of All Responses



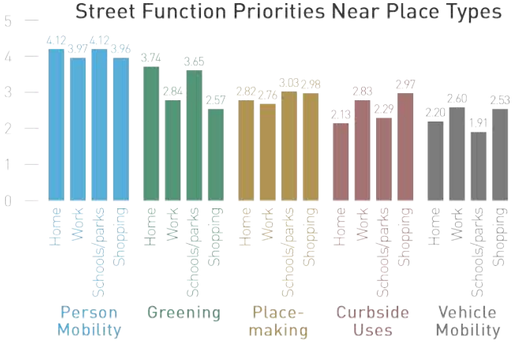
Above: Person mobility and greening are the most important citywide.

Top & Bottom Right: Some functions are more important to respondents near certain place types than mean values.

Place Types' Street Function Priorities



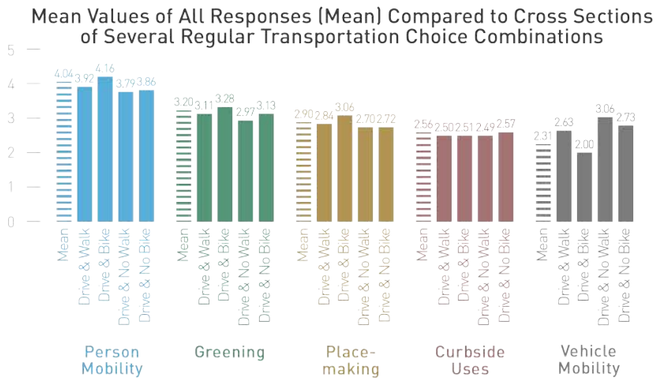
Street Function Priorities Near Place Types



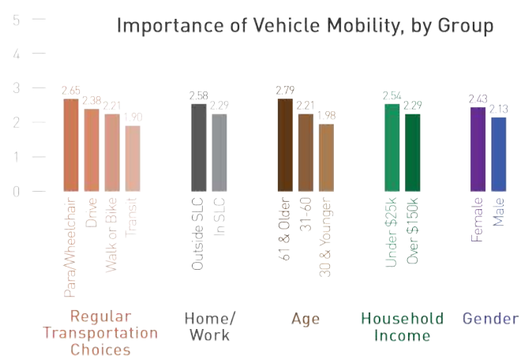
Fall 2019

Street Function Priorities Survey
Graphic Summary Report
Salt Lake City Street & Intersection Typologies Design Guide

Interesting Takeaways by Transportation Choices & Demographics



Respondents who walk and ride a bicycle regularly were more likely to drive regularly than people who drive regularly were to ride a bicycle regularly. Of the 74% of respondents who said that they drive regularly, 8% rarely or never walk while 37% rarely or never ride a bike. However, they still prioritized person mobility above all other right-of-way functions. 71% of all respondents walk and 41% ride a bike regularly. Only 8% of those who walk and 12% of those who ride a bike regularly said they rarely or never drive.



Open-Ended Public Feedback

"Please prioritize the movement of people."

"Our wide streets may still hold a hidden advantage – expanding more [space] for people on bikes, scooters, feet, skateboards, etc. Make more complete streets that accommodate all users."

"Trees change everything. Cars go slower, more people will walk, and the emotional tone of the city is enhanced."

"Lower speed limits, please. 20 is plenty."

"The West Side and Redwood Road need love!"

"Prevent cut-through fast-drivers through neighborhoods. Provide viable options on main roads, and keep neighborhood roads for access to residences or pedestrians."

"[Make] streets more family friendly. I would love to explore the city with my children more. But the high cost and lack of availability of public transit, coupled with [dangerous interchanges] make this difficult. As a result, we usually end up driving downtown (even though we only live in Rose Park) or not going at all."

"Nothing is more important than properly designing streets before development."

Summer 2020

Initial Typology Design and Mapping Survey (Round 2)
Graphic Summary Report
Salt Lake City Street & Intersection Typologies Design Guide

The Guide will create new definitions and designs for 15 distinct street typologies. Each will consider land use contexts, functions of the public right-of-way, and citywide and neighborhood goals to determine the allocation of space to different uses. The Guide ensures that every street works better for everyone, by design.

From June to August, 2020, a second round of engagement was conducted. The project team received 3,654 survey responses from 2,397 users, plus an additional 173 interactive map comments and roughly 100 emails to both staff and the City Council. Major themes of this second round were concerns and some misconceptions about parking (682 comments) and traffic (233), walking (89), safety (70), and buses and trains (36). This brought the total number of responses since the beginning of the project to roughly 5,100.

Demographics

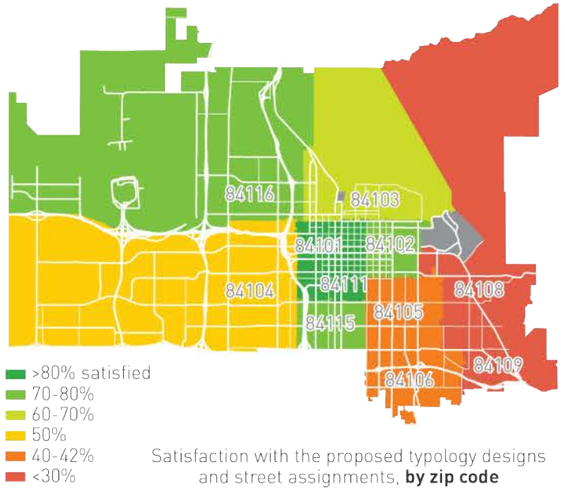
The 2,397 people who responded in this second round were less geographically diverse than in the first. Glendale and Poplar Grove were again the least-represented neighborhoods (26, or 1% of total respondents).

Respondents from the zip codes 84108, 84105, 84106, 84109 (south of 900 South and east of 500 East), who were least satisfied by this round's proposed designs, made up 76% of responses (yet make up only about 53% of SLC's total population). See map on the right side of this page.

	#	%	responses per 1,000 residents
84108	840	35%	37.5
84105	555	23%	24.8
84106	261	11%	7.4
84109	173	7%	7.0
84103	167	7%	7.5
84102	123	5%	6.6
84115	120	5%	4.4
84111	62	3%	4.8
84116	59	2.5%	1.7
84104	26	1%	0.95
84101	11	0.5%	2.4
	2,397	100%	

Satisfaction by Zip Code and by Topic

Those in the 84108, 84105, 84106, 84109 (all east side) and 84104 (Glendale/Poplar Grove) were more dissatisfied with the proposed designs and street assignments than those who lived in other zip codes (see yellow, orange, and red areas in the below map). Those from the east side zip codes were primarily dissatisfied by the proposed designs' parking impacts and slow design speeds on neighborhood streets. The lack of adequate sample size in 84104 responses precludes an accurate analysis.



Satisfaction with the proposed typology designs and street assignments, **by zip code**

Satisfaction with proposed typology designs and assignments, **by comment category** (sorted from most to least responses)

Misconceptions, Clarifications, and Changes Made

Misconceptions were perpetuated during the second round of public input and showed up in many responses: that the project meant immediate changes to all streets, that parking changes were only for East Bench streets, and that parking and speed changes would be implemented and enforced by signs. The truth is that this is a design guide for the entire city that seeks to create slower, safer, smaller streets by design rather than enforcement.

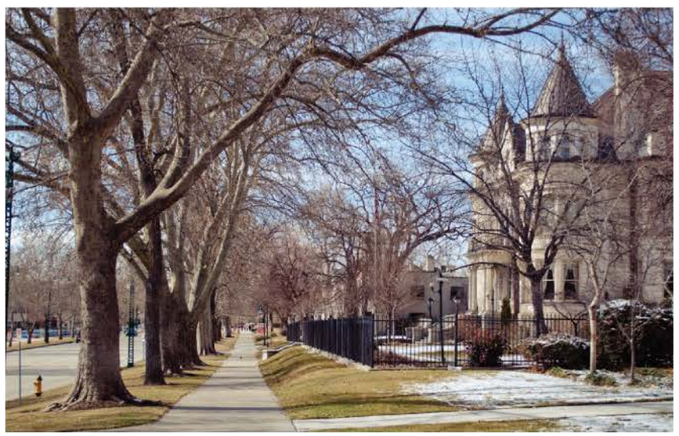
Based on public comment, the more significant reductions in on-street parking have been scaled back. Flexibility was added to the parking implementation for neighborhood street typologies. The recommendation that some neighborhood streets have parking only on one side of the street has been removed. The typology assignment and, therefore, the number of lanes on streets like 2100 South and Sunnyside Ave (most common comments) is now more flexible, too.

Summer 2020

Initial Typology Design and Mapping Survey (Round 2)

Graphic Summary Report

Salt Lake City Street & Intersection Typologies Design Guide



Open-Ended Public Feedback

"I do not like the idea of parking on one side of the street. Several cars in the neighborhood only have the option of parking on the street at night and it can get very crowded."

"We need more lighting on neighborhood streets."

"Where the street is already wider than this, and already has a 10' park strip, will parking be permitted on both sides?"

"I support lowering of the speed limit on residential streets. But I don't see any reason to restrict parking."

"I like the slightly raised area in between the bike lane and motorized traffic. I would like to see the transit lane painted a designated color. I would like to see more uninterrupted transit options."

"Parking 100% on one side of the street: Is this the proposed change? If so, that absolutely will not work for our street. A lot of homes have multiple adults living at their home, or are students with cars. There would not be enough parking for everyone's needs. Right now it's working out alright."

"Great to see a more equatable allocation of right-of-way space for people, bikes, autos, and greenery. My idea for improvement in this typology and all other typologies is to implement green infrastructure tactics.

Nov 2021

Design Guide Final Review Survey (Round 3)
Graphic Summary Report
Salt Lake City Street & Intersection Typologies Design Guide

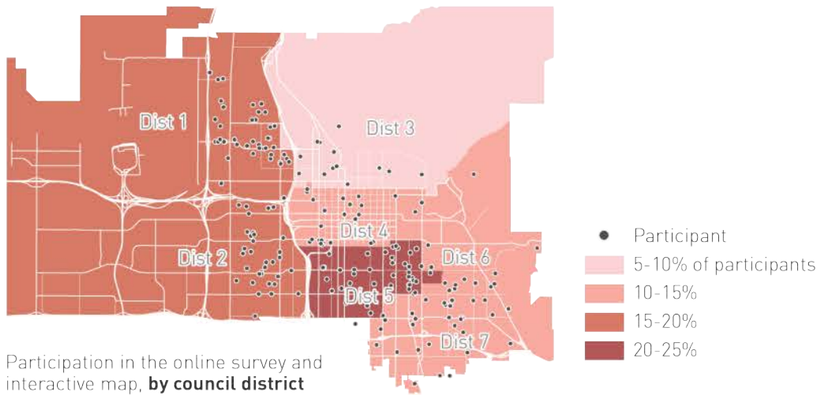
The Design Guide combines land use & transportation planning, and ensures that every street works better for everyone, by design.

The third and final round of engagement was conducted during the entire month of November 2021. The project team asked participants to review final street typology designs, intersection guidance, and the Design Guide document as a whole. The team received 1,016 survey and map responses from 339 people, in addition to many emails and phone calls. **The total number of comments received during the project is roughly 6,200.**

Major themes of this round's comments were the need for clarity on future public input opportunities during implementation, concerns about parking, and questions about how the city transitions to the future envisioned by the Guide.

Demographics

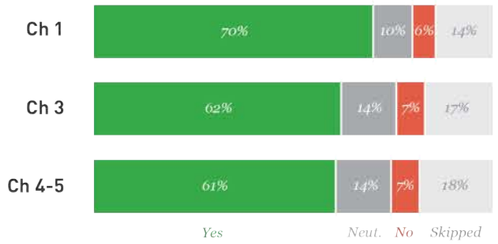
Targeted outreach to neighborhoods west of State Street, including a postcard and online events (in English and Spanish) resulted in participation that was **more geographically representative than in previous rounds** (see the map below for a breakdown of participants, by council district).



Participation in the online survey and interactive map, **by council district**

Understanding of the Design Guide

In the online survey, participants were asked if they felt that they understood the **three new parts** of the Design Guide: introduction (Chapter 1), intersection design guidance (Chapter 3), and implementation strategies (Chapters 4 & 5). Suggestions for how to improve these chapters were incorporated into the first edition of the Design Guide.



Understanding of new Design Guide materials, **by chapter.**

Interactive Map Comments Summary

109/1,016 third round comments came from the interactive map. Nearly all of them were related to street typology (Ch 2) assignments:

- 47 were supportive.
- 11 were neutral.
- 15 disagreed with slower, smaller streets.
- 36 specifically requested that the City not use Urban Village Streets (Typology #8) to transition from Urban Village Main Streets (#7) to neighborhood typologies (#13-15).

48/109 required more in-depth evaluation. Input from these and other participants resulted in **changes to the assigned typologies of roughly 5% of streets**. These can be found in the map published in the first edition of the Design Guide.

Selected Open-Ended Public Feedback

"It is an ambitious plan, but has the potential to make communities more pleasant places to live and recreate. It is going to be a difficult sell for people who want to drive fast and use cars for every trip."

"It's a lot of info. There are going to be some good ideas, some not so much. I wish it could have been boiled down more."

"The symbology on the map is unclear. It's hard to tell the different greens from one another."

"It's really for an audience of technical people and asking us is ok, but I am not sure who will really read this."

"It's great for those who are college educated, but could be simplified to make it accessible to my neighbors and others. Everyone should be able to read it, just like everyone should be able to use the streets."

"The guide looks great. I hope it gets taken seriously and implemented."

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ON SALE
HERE
MARVEL
COMICS

REFERENCE MATERIALS

VII. REFERENCE MATERIALS

The Salt Lake City Street and Intersection Typologies Design Guide was developed using national, regional, and local best practices and design guidance. These sources are identified and linked below.

NATIONAL GUIDANCE

National and other non-local guides used to develop the typologies include:

PUBLIC RIGHT-OF-WAY ACCESSIBILITY GUIDELINES (PROWAG), developed by the Architectural and Transportation Barriers Compliance Board (Access Board). Draft rules were proposed in 2011 but have not been finalized. The guidelines are accessible online at https://www.regulations.gov/document/ATBCB-2011-0004-0347.

FEDERAL HIGHWAYS ADMINISTRATION REPORT FHWA-HEP-17-096, ACCESSIBLE SHARED STREETS: Notable Practices and Considerations for Accommodating Pedestrians with Vision Disabilities, October 2017. Accessible online at https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/accessible_shared_streets/index.cfm.

AASHTO A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS; Guide for the Development of Bicycle Facilities; and Guide for Planning, Designing and Operating Pedestrian Facilities.

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION SEPARATED BIKE LANE PLANNING & DESIGN GUIDE, available online at https://www.mass.gov/lists/separated-bike-lane-planning-design-guide

FEDERAL HIGHWAYS ADMINISTRATION SEPARATED BIKE LANE PLANNING AND DESIGN GUIDE, available online at https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/separated_bikelane_pdg/page00.cfm

NATIONAL ASSOCIATION OF CITY TRANSPORTATION OFFICIALS URBAN BIKEWAY DESIGN GUIDE. Online content accessible at https://nacto.org/publication/urban-bikeway-design-guide/.

NATIONAL ASSOCIATION OF CITY TRANSPORTATION OFFICIALS URBAN STREET DESIGN GUIDE. Online content accessible at https://nacto.org/publication/urban-street-design-guide/.

NATIONAL ASSOCIATION OF CITY TRANSPORTATION OFFICIALS TRANSIT STREET DESIGN GUIDE. Online content accessible at https://nacto.org/publication/transit-street-design-guide/.

NATIONAL ASSOCIATION OF CITY TRANSPORTATION OFFICIALS URBAN STREET STORMWATER GUIDE. Online content accessible at https://nacto.org/publication/urban-street-stormwater-guide/.

NATIONAL ASSOCIATION OF CITY TRANSPORTATION OFFICIALS CITY LIMITS GUIDE. Online content accessible at https://nacto.org/publication/city-limits/.

NATIONAL ASSOCIATION OF CITY TRANSPORTATION OFFICIALS DON'T GIVE UP AT THE INTERSECTION GUIDE. Online content accessible at https://nacto.org/publication/dont-give-up-at-the-intersection/.

LOCAL AND REGIONAL GUIDANCE

Many local and regional planning documents provided guidance for developing the typologies:

SALT LAKE CITY TRANSIT MASTER PLAN, adopted in 2017 and available online at http://www.slcdocs.com/transportation/Plans/SLC_TMP_FULL_FINAL.pdf

SALT LAKE CITY PEDESTRIAN AND BICYCLE MASTER PLAN, adopted in 2015 and available online at http://www.slcdocs.com/transportation/Master/PedestrianAndBicycleMaster/SLC_PBMPCompleteDocument(Dec2015)Clickable.pdf

SALT LAKE CITY STREET LIGHTING MASTER PLAN, to be adopted soon and available online at https://www.slc.gov/utilities/wp-content/uploads/sites/22/2021/03/SLC-Lighting-MP_vs.10.pdf

SALT LAKE CITY'S URBAN FORESTRY SUGGESTED TREES GUIDELINES, available online https://www.slc.gov/parks/urban-forestry/urban-forestry-suggested-trees/

SALT LAKE CITY MID-BLOCK WALKWAY GUIDELINES (found on page 64 of the Salt Lake City Downtown Plan), available online at http://www.slcdocs.com/Planning/MasterPlansMaps/Downtown.pdf

SALT LAKE CITY ZONING ORDINANCE, available online at https://codelibrary.amlegal.com/codes/saltlakecityut/latest/overview

MULTIPLE SALT LAKE CITY NEIGHBORHOOD PLANS, available online at https://www.slc.gov/planning/2018/03/22/neighborhood-plans/

UTAH TRANSIT AUTHORITY 2020 BUS STOP MASTER PLAN, available online at https://www.rideuta.com/-/media/Files/About-UTA/Reports/2019/Bus_Stop_Master_Plan2019xx.ashx?la=en

THE WASATCH FRONT REGIONAL COUNCIL 2019-2050 REGIONAL TRANSPORTATION PLAN, available online at https://wfrc.org/vision-plans/regional-transportation-plan/2019-2050-regional-transportation-plan/


CITY CENTRE I

ACKNOWLEDGEMENTS

VIII. ACKNOWLEDGEMENTS

The Guide relied on the advice, insight, and experience of Salt Lake City and partner agency staff. We thank them for their time and dedication. Without them, this Guide would not be possible.

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