



CHAPTER 4

TRANSPORTATION



INTRODUCTION

Why Transportation Planning?

Transportation and land use planning are two sides of the same coin. The ability of an individual or business to gain access for their particular needs will significantly contribute to the decision of where to locate, both regionally and locally. Accordingly, the safe and efficient movement of people and goods will be vital to the long-term economic success and quality of life of Brigham City. A well-conceived land use plan will mix uses in such a way as to increase accessibility to a community's needs while reducing the total amount of travel required. This in turn will reduce the amount of transportation infrastructure required and lessen the financial tax burden of

a community. However, the City's roads must also be comfortable and safe for all users, including pedestrians and cyclists of all age groups.

Brigham City's transportation network already has many highly desirable attributes. The City is also privileged to have a strong economic base with many large employers located within or adjacent to town. Since the City is longer than it is wide, most neighborhoods are within reasonable walking distance of vital commercial centers along Main Street. These aspects combined with its grid-style roadway network help to reduce travel times, reduce needed infrastructure, and improve the quality of life of its residents. While the I-15 freeway has served as the primary means of regional connection in the past, the Airport is also beginning to serve as a regional facilitator for business and industry, and Utah Transit Authority's FrontRunner will one day

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service commuters traveling along the Wasatch Front.

The purpose of this Chapter is to identify priority transportation issues currently facing the City, identify future goals for the planning horizon of 2035, and explore strategies that would allow the City to meet those goals.

Priority Issues

1. Gravel Trucks In Downtown: Brigham City's east side is home to three major gravel pits, two located just west of US-89/91 operated by Staker Parsons and one east run by LeGrand Johnson. From a transportation perspective, the most significant challenge posed by these mining operations is the amount of truck traffic they generate on 200 South and Main Street. Staker Parsons alone generates over 40,000 truck trips each year (with a disproportionate amount occurring in the summer). Almost all of these trips, including entering and exiting vehicles, are routed along 200 South (SR-90) and then north or south on Main Street (SR-13).

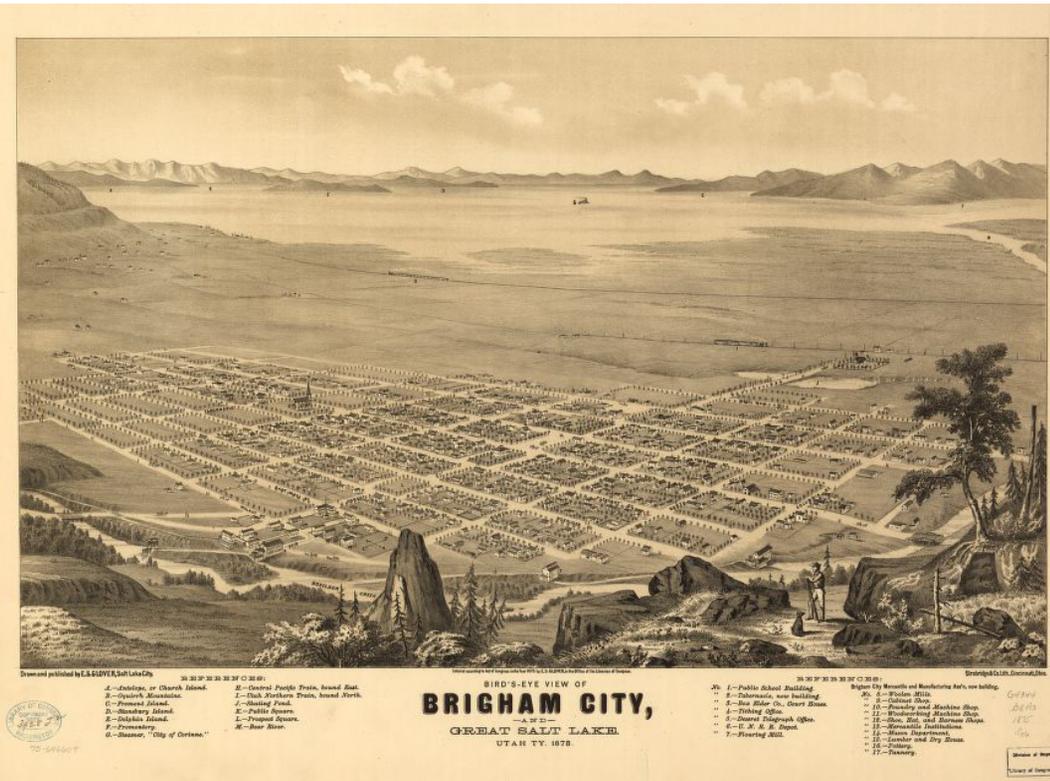
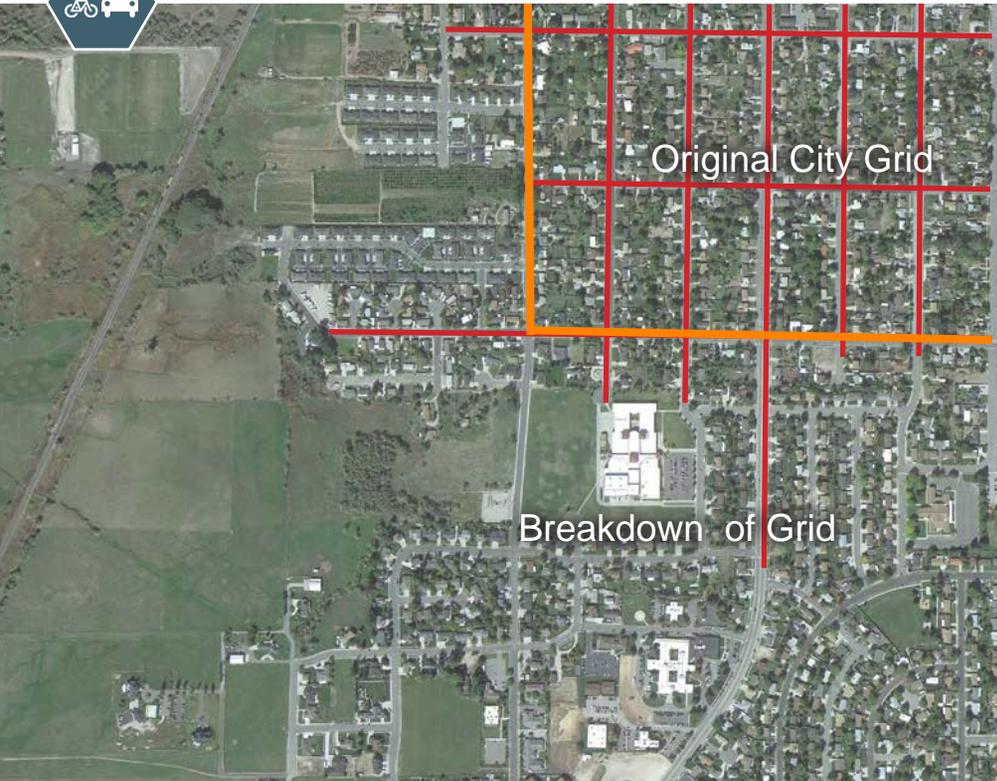
These trucks contribute significantly to the ambient noise on Main Street which in turn impacts the environment and attractiveness of Main Street businesses, especially in the Downtown area. Recent increases in foot traffic near the Temple



GRAVEL TRUCK ON MAIN STREET

and throughout the Downtown district have also raised concerns about potential increases in truck and pedestrian conflicts at intersections and mid-block crossings. Often truck maneuvering results in encroachment of the trailer onto curbs and pedestrian areas. In addition, the trucks' use of downtown Main Street's narrow lanes, two of which are as slim as 10.5-feet with no buffer between through traffic and on-street parking, increases the likelihood of collisions, limits traffic maneuverability, and puts drivers exiting their vehicles at risk of an unexpected collision.

In 2012, Brigham City Officials worked with key stakeholders to identify alternate in-town routes for trucks to divert traffic from Main Street; however, truck operators have primarily continued to use SR-13 and



SR-90 in order to avoid travelling through residential areas and make use of signalized, rather than stop-controlled intersections which are perceived to be safer. At present, heavy truck drivers retain the right by State Statute to drive on any UDOT controlled right-of-way, so barring the possibility of an inter jurisdictional swap of UDOT rights-of-way with the City, new proposed truck routes on City rights-of-way would have to be developed by mutual agreement.

- Road System Connectivity Break Down: Foresight by City fathers allowed for the layout of a highly connected City street system that serves to enhance the efficiency and livability of Brigham City's transportation network. A well planned grid system of

roads offers a community multiple routes for arriving at the same destination and allows users of all modes (driving, biking, walking) more direct travel routes. Good connectivity also serves to more effectively disperse traffic in the case of traffic congestion and roadway incidents. However, since the realization of Brigham City's earliest plat, the City has experienced additional growth on its periphery, resulting in the addition of roadways to the City system that are not as connected, grid-like, or predictable as their predecessors. This kind of road layout has contributed to congestion most notably in the southwest portion of the City near the Community Hospital. During the public input process, many citizens voiced their appreciation and preference for well-connected



roads. They expressed their desire to institute policies that would increase connectivity in areas where it is lacking, as well as policies that require future development to conform to connected grid-like patterns.

3. **Main Street Too Narrow, Residential Roads Too Wide:** With all its virtues, one downside to the original City plat was perhaps the uniform width of all its north-south roads, thus resulting in many neighborhood roads that are too wide and a Main Street that is not wide enough. Overly-wide residential roads (where the excess width is devoted to pavement) have the potential to (1) encourage speeding, (2) compromise bicycle and pedestrian safety, and (3) generate unnecessary maintenance costs. Wide roads, long crosswalks and resulting high traffic speeds have created conditions that compromise pedestrian safety and discourage walking and biking at many locations within the City.

As previously mentioned, Downtown Main Street is too narrow and lacks sufficient sidewalk width for Downtown businesses to create a truly lively streetscape, while the current curb-to-curb roadway configuration is excessively constrained and not necessarily conducive to pedestrian or vehicular safety. Regarding Main Street, residents have voiced consistent concern about the vibrancy of their Downtown as it appears to be an overwhelming source of local pride and are interested in finding the changes needed to make it happen.

Citizens have also raised concerns that they generally perceive the City's road system and its associated crossings as unsafe for pedestrians and would like to see improvements made.

4. **Incomplete Sidewalk System:** Due to fluctuating development requirements through the past few



MAIN STREET TOO NARROW.



RESIDENTIAL STREETS TOO WIDE.

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DEAD END SIDEWALK IN BRIGHAM CITY.

decades, Brigham City currently lacks sidewalk on approximately 41% of its roadways. Brigham City residents consistently voiced the inconsistent sidewalk system as a high priority. A previous planning effort, the “Brigham City Pedestrian and Sidewalk Master Plan” was adopted in October of 2006. The plan came about over concerns that the requests for sidewalk deferrals were being issued arbitrarily without guiding criteria. In response major pedestrian attractions in the City were identified, missing sidewalk linkages were inventoried, sidewalk completion projects within the City were prioritized, and deferral criteria were established. Unfortunately implementation of the

Sidewalk Master Plan has been thwarted by a lack of funding and by deferral criteria that remains too loose.

5. **Orderly Development Needed on West-Side:** Careful examination of economic growth projects for the planning horizon have revealed the demand for some development on the west side of Brigham City between the UPRR tracks and I-15. To ensure orderly development, smooth traffic flow, and future bicycle and pedestrian access, a road plan is needed for the west side that will complement the City’s vision for this area.

6. **More Effective Transit Needed:** Per input received during the public feedback process, residents currently do not feel the existing circulating bus route through Brigham City is serving the needs of the community. Many also voiced their interest in additional regional transit connections to (1) the Wasatch Front for commuters and (2) Logan to accommodate increased interaction between USU and its newly expanded regional campus in Brigham City.

GOALS AND STRATEGIES

Goal 1. Explore options to divert truck traffic off Main: Develop alternative truck routes that will divert truck traffic away from Main Street, especially through Downtown (200 South to 100 North) and direct them towards the City periphery.

Strategies

1. **Long-Term Strategy #1 - Pursue an interchange and overpass:** Multiple meetings with representatives from Staker Parson and LeGrand Johnson have determined



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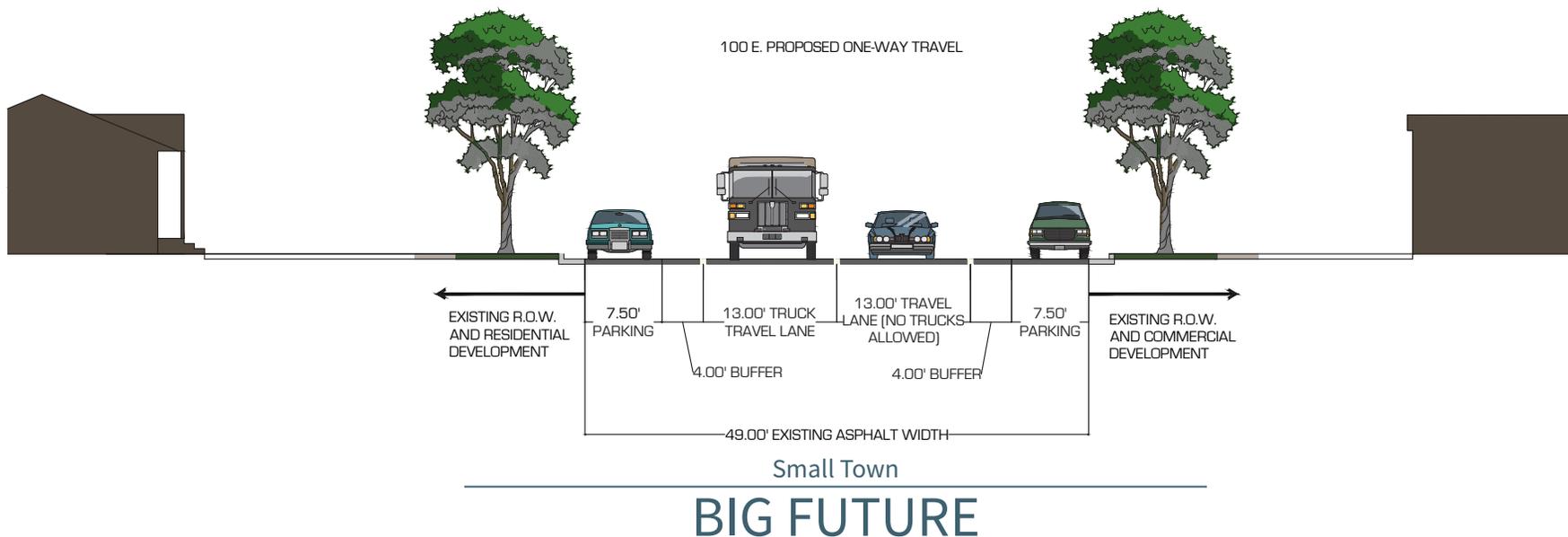


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that the best long term solution for routing their vehicles out of town involves directing trucks from the pits directly onto US-89/91 (1100 South) and west to the Freeway. This option would require funding for two projects: (1) improvements that would complete the missing movements of the SR-90 (200 South) and US-89/91 interchange at the mouth of Sardine Canyon, and (2) an interchange at SR-13 (Main Street) and US-89/91 (1100 South). Requests have been made to WFRC and UDOT to prioritize these projects given their importance for improving safety and quality of life within Brigham City. These discussions must continue to ensure project prioritization in the upcoming WFRC 2050 Plan; however, funding may ultimately be years away, perhaps even beyond the planning horizon of this General Plan. Accordingly, the City will also pursue Long-Term Strategy #2.

Funding for a new bridge at the Forest Street and the UPRR crossing. Trucks could be directed down 200 South to 500 West, up to Forest Street and then west to I-15. Such a system would serve multiple ends, allowing trucks an alternate and relatively direct route to I-15, but also reducing crossing wait times for local traffic and improving emergency response times to the west side. Independent of the truck routing issue Brigham City will continue to pursue funding for this crossing. Impacts to existing historical buildings and facilities at Rees Pioneer Park may be mitigated by shifting the roadway improvements entirely to the South and relocating the Historic “Brigham City Depot” near the proposed FrontRunner Station at 200 South.

2. Long-Term Strategy #2 - Construct an overpass at the UPRR tracks: Another solution for removing trucks from downtown Main Street, although not from the City as a whole, is to continue to pursue TIGER Grant





Goal 2. Increase Existing Roadway Connectivity, Require in Future Development: Develop policies that will promote increased connectivity in poorly connected portions of Brigham City's transportation system and require well-connected future development.

Strategies

1. Develop a West Side Plan: Amend the current city transportation plan to include additional major/minor roads on the west side that will be needed to meet development demand and ensure orderly growth within the 2035 planning horizon. Also amend the plan to show additional connections in already developed, but poorly connected portions of the City. With the adoption of this Plan, city ordinances should be revised to require developers to either install these connections as shown on the transportation plan or present the City an equally effective alternative.

In greenfield areas zoned for development within the time horizon of this General Plan, major facilities are also outlined on the Proposed Transportation Map and should be constructed commensurate with development.

2. Create Connectivity Requirements for New Development: Modifications to subdivision and development ordinances should be made that would require developers to construct improved roadway networks. Some suggestions include:
 - A. Limitations on the number of dead-end streets.
 - B. Requirements that new development



EXAMPLE OF WELL CONNECTED STREETS (BRIGHAM CITY)



EXAMPLE OF POORLY CONNECTED STREETS (OTHER UTAH CITY)

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meet some connectivity index threshold. The connectivity index measures the density of connections in a path or road network, as well as the directness of links.

- C. Requirements that parcels be developed with coordinated connections to adjacent parcels.
- D. Requirements that developers install the proposed facilities outlined on Proposed Transportation Map or present and institute an equally effective alternative.
- E. Limitations on maximum block size or street segment length before reaching another intersection. 550-ft maximum suggested for residential and commercial areas with variances permitted in industrial zones.

Goal 3. New Cross-Sections for Downtown Main & Residential Roads, While Also Increasing Bike/ Pedestrian Safety: Develop a new proposed cross-section for Downtown Main Street and improved standard cross-sections for neighborhoods. Also, increase pedestrian and bicyclist safety on these roads and intersections.

Strategies for Main Street

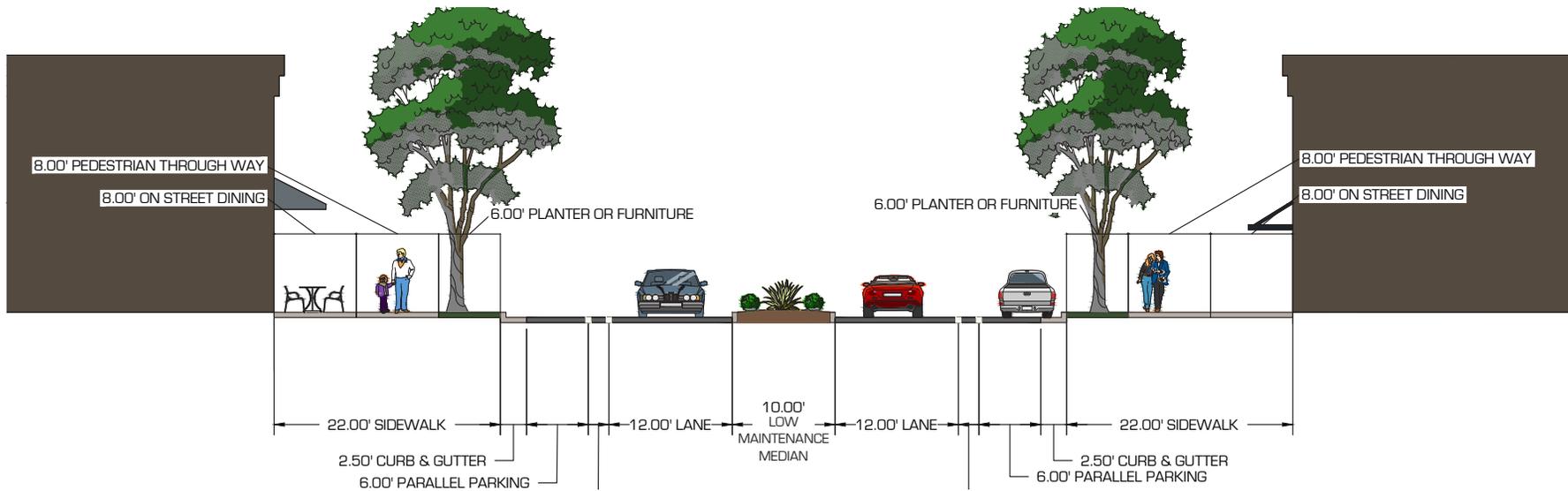
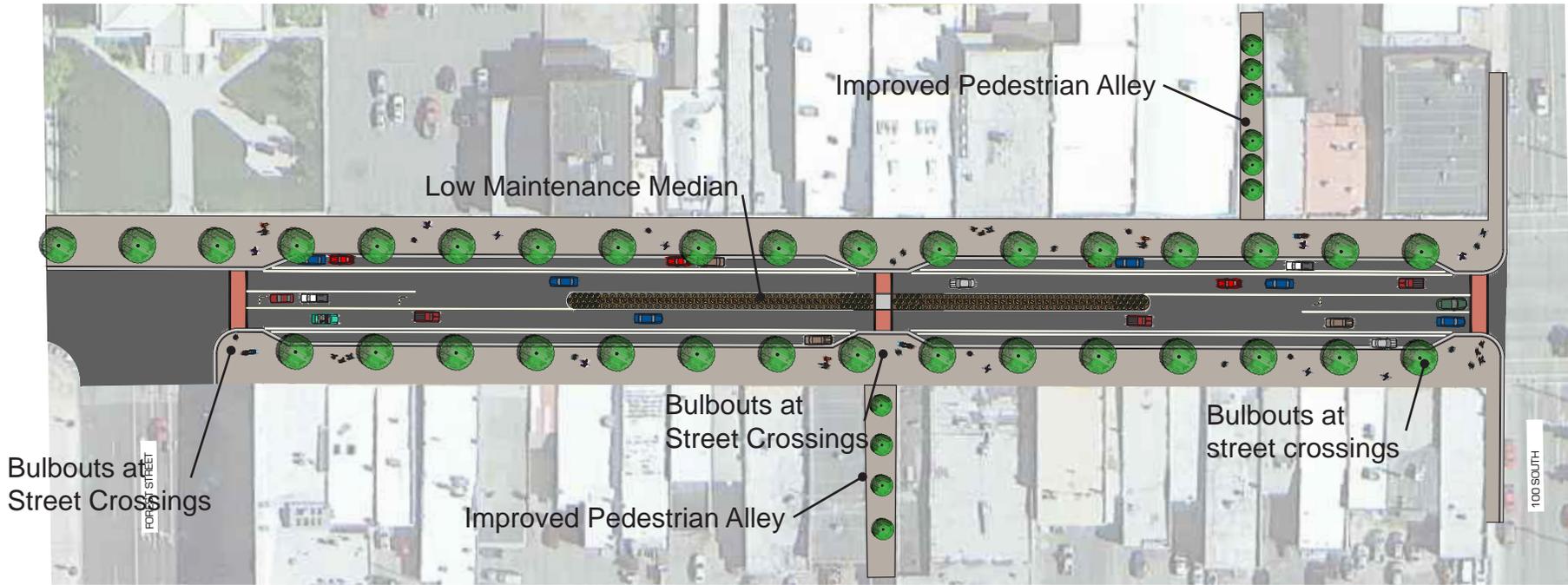
1. Explore Traffic Calming and Beautification Features: Discussions with UDOT have revealed their willingness and disposition to cooperate in making the following improvements: (1) installation of a low maintenance median, (2) development of curb bulb-outs at downtown intersection corners to generate open space and reduce pedestrian crossing distance, and (3) improve existing mid-block crossings. These improvements would have to be made at City expense and would require their prioritization in the Capital

Facilities Plan.

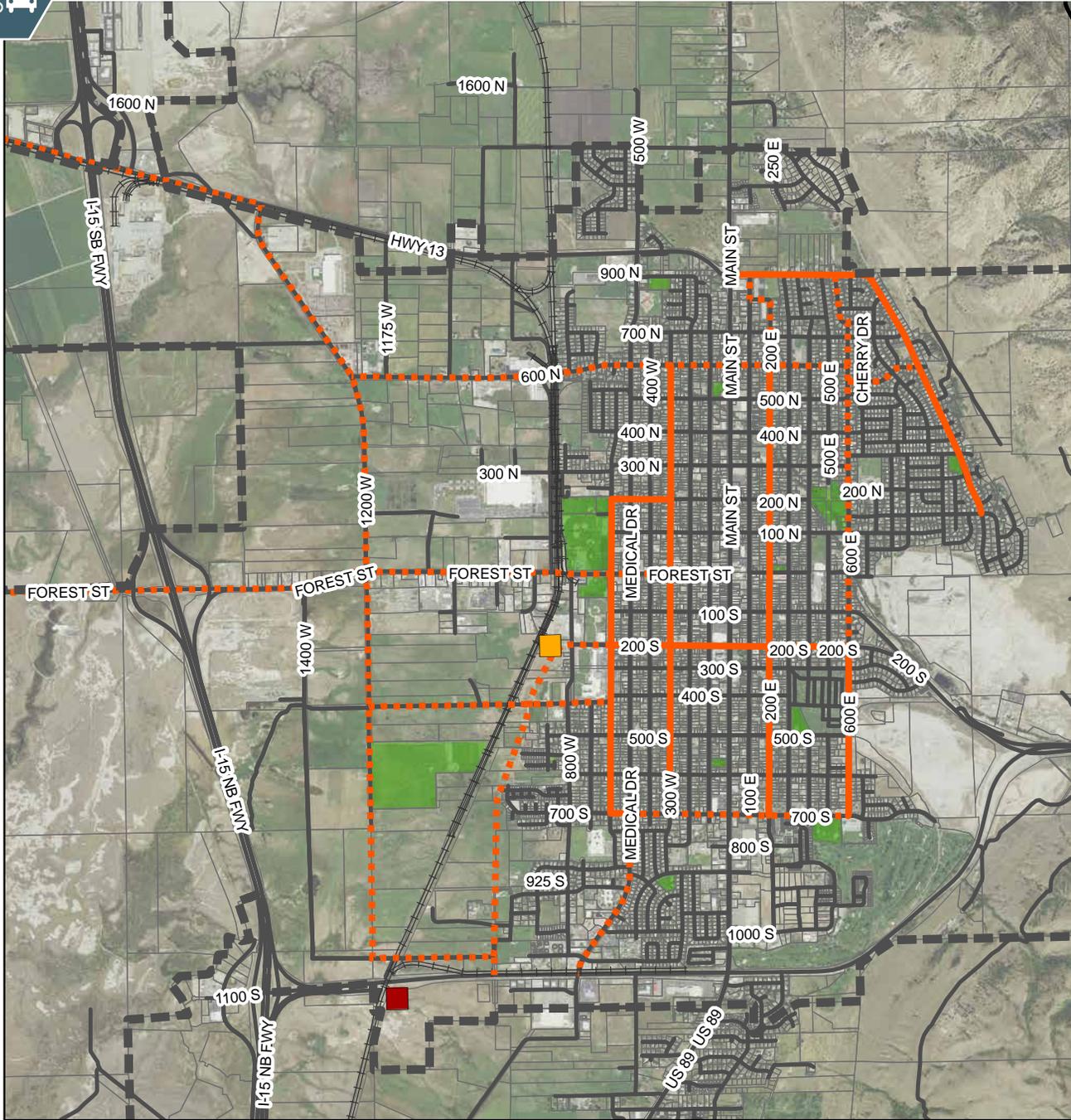
2. Increase the Usable Outdoor Space for Businesses: Continue discussions with UDOT regarding temporary boardwalks to be located in parking spaces. Temporary boardwalks would allow property owners the option of shifting pedestrian traffic further from the building face onto temporary platforms that would be erected in the on-street parking area. This would create space between the curb and the building which could be used for outdoor dining, sidewalk sales, or entertainment.



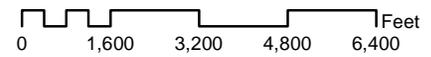
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MAIN STREET PLAN VIEW AND POTENTIAL CROSS SECTION BETWEEN 100 SOUTH AND FOREST STREET .



- UTA Station Option at 1100 South ■
- UTA Station Option at 200 South ■
- Brigham City Boundary
- Existing Bike Lanes
- Proposed Bike Lanes
- Railroads
- Local Streets
- Parcels
- Parks



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Strategies for Residential Streets

1. Consider New Proposed Cross-Sections: With input from the Public Works Department, develop roadway cross-sectional standards for existing and proposed rights-of-way that reduce unnecessary pavement and re-allocate that width to bicyclists, pedestrians, or median and park strip landscaping. This will serve to reduce long-term asphalt maintenance costs, as well as reduce the total amount of impervious area and associated storm water runoff and infrastructure. For residential streets, asphalt width is recommended at no more than 28-ft (32-ft curb-to-curb). Most north-south roads currently have 55-ft of asphalt or more.

Road Maintenance: Examine the remaining service life of existing wide neighborhood roads to identify road reconstruction opportunities that would allow for implementation of the updated neighborhood standard cross-sections. Integrate fully into the Capital Facilities Plan. In conjunction with this analysis, consider establishing a five year regime of regular pavement preservation management techniques on a street by street rotation. Depending on this or some other level of maintenance desired by City Officials, additional funds may need to be appropriated to Public Works Operations. Recent sales tax increases as a result of HB365 could potentially be appropriated to these ends.

Strategies for Increasing pedestrian and cyclist safety

1. Consider Adding Additional Safety Features to Public Works Standards: Evaluate Public Works Department standards regarding traffic calming features, bike facilities, crosswalks, pedestrian actuation, curb extensions, colored and textured pavements, trails,

etc. to identify opportunities to make Brigham City more accessible to all users, not just vehicles. Revise standards as appropriate and require on new projects and reconstructs.

2. Identify Areas for Priority Implementation: Using the Pedestrian Attractors Map located within the Sidewalk and Pedestrian Master Plan, identify priority pedestrian attractors within the City that most warrant implementation of spot enhancements. Prioritize reconstructs in these areas on the Capital Facilities Plan.
3. Adopt a Complete Streets Policy: This Chapter includes a Complete Streets Policy. It represents Brigham City's vision for accommodating all users and modes on its transportation system and will serve as a guiding document for the Planning Commission in evaluating new development proposals and in drafting development agreements.

Goal 4. Implement the Sidewalk Master Plan: Building on the work of the Brigham City Sidewalk Master Plan, successfully complete Brigham City's sidewalk system. It is further recommended that the Sidewalk Master Plan itself be updated to reflect this change and that a new inventory be completed.

Strategies

1. Evaluate and update the Deferral System: Evaluate and update the current deferral point and appeal system found in the City's Pedestrian and Sidewalk Master Plan. Revise the ordinance to require sidewalk installation concurrent with changes of use and with all building permits of certain construction types or with some minimum valuation. Consider having exceptions reviewed by the Appeal



Authority or the Public Works Department as with any other deviation from zoning or engineering standards.

2. Aggressively Pursue Funding: Options include (1) UDOT's safe sidewalk for sidewalks within State rights-of-way, (2) Community Development Block Grants for qualifying neighborhoods, (3) the establishment of assessment districts in interested neighborhoods, (4) bonds passed by the appropriate legal instrument, and (5) a City-sponsored dollar-for-dollar matching program.

Goal 5. Implement the West-Side Master Plan: Implement the proposed road master plan as developed in conjunction with the west-side land use plan and commensurate with development.

Strategies

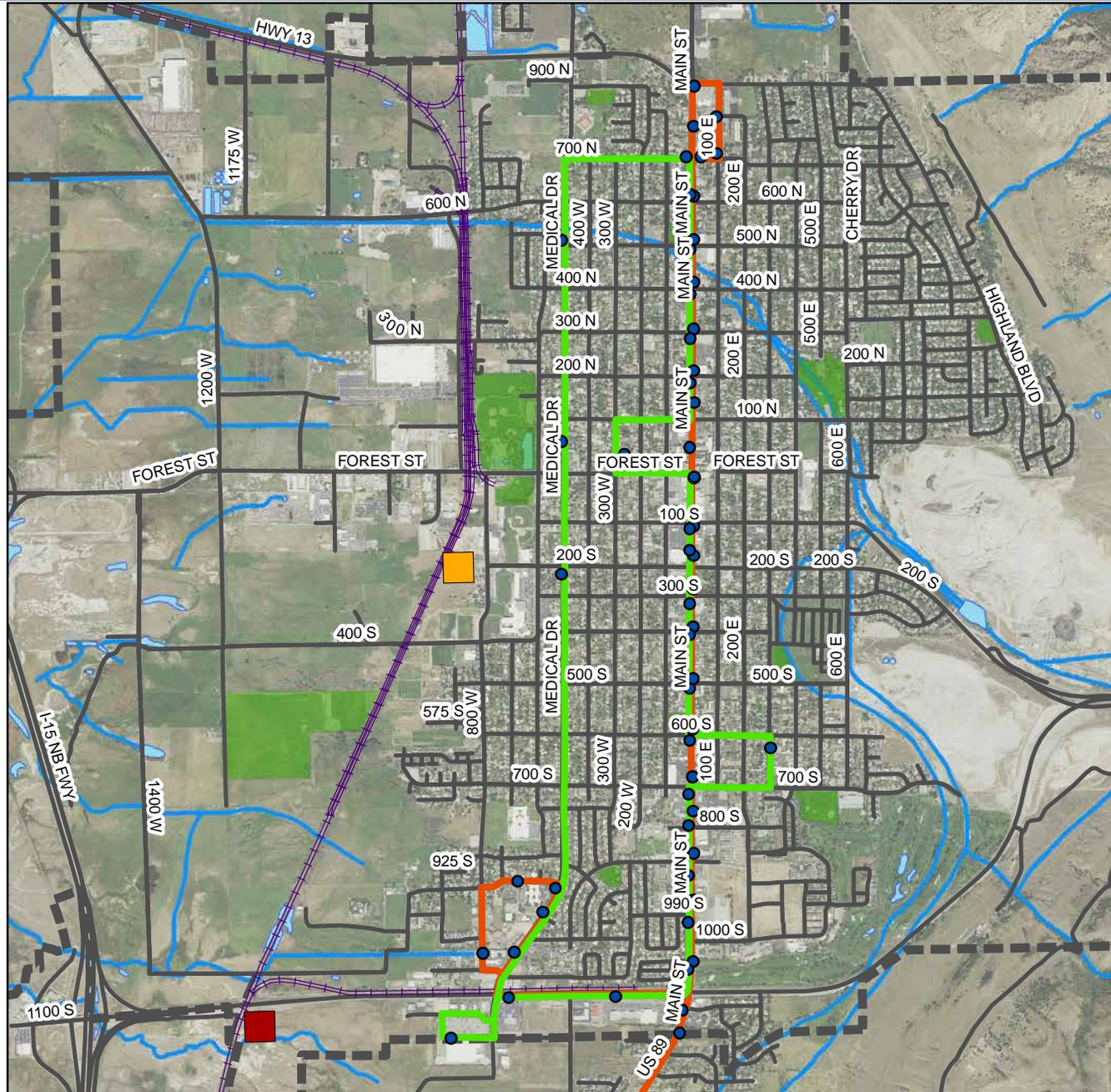
1. Enforce Implementation: By ordinance, enforce developer implementation of the west-side roadway master plan as development occurs. If rezoning occurs amend the transportation master plan accordingly with proposed road layouts that preserve Brigham City's intent of generating a highly connected street system. Keep Transportation Plan current and in force.
2. Pursue Corridor Preservation Funding: For key vision corridors, such as 1200 West, pursue UDOT local corridor preservation funding and other revenue sources to ensure the possibility of future roadway completion along threatened corridors (such as the connection from 400 South to 1200 East just east of the tracks).

Goal 6. Make Transit Service More Effective: Create a revised circulating bus route for Brigham City and explore regional transit options.

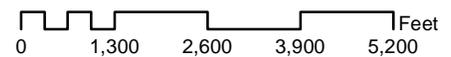
Strategies

1. Change the Existing Bus Route: Work with UTA to explore increasing bus frequency within Brigham City and eliminating the hospital loop from the current route in order to develop a local route that better serves Brigham City residents.
2. Develop Express Bus to Ogden: Facilitate meetings between Brigham City representatives, UTA and perhaps key major employers in the Ogden area that could help identify the effectiveness and routing of an improved regional express commuter bus route.
3. Develop Express Bus to Logan: Facilitate meetings between UTA and Cache Valley Transit District (CVTD) representatives to determine the long-term feasibility and jurisdictional implications of an express bus connecting USU campuses in the two cities.

EXISTING BUS ROUTES



- UTA Station Option at 1100 S ■
- UTA Station Option at 200 S ■
- Existing Bus Stops ●
- Existing Brigham City to Ogden Commuter Route —
- Existing Brigham City Lift Route —
- Brigham City Boundary
- Railroads —+—+—+—+—
- Streets —
- Parks ■
- Lakes ■
- Streams —

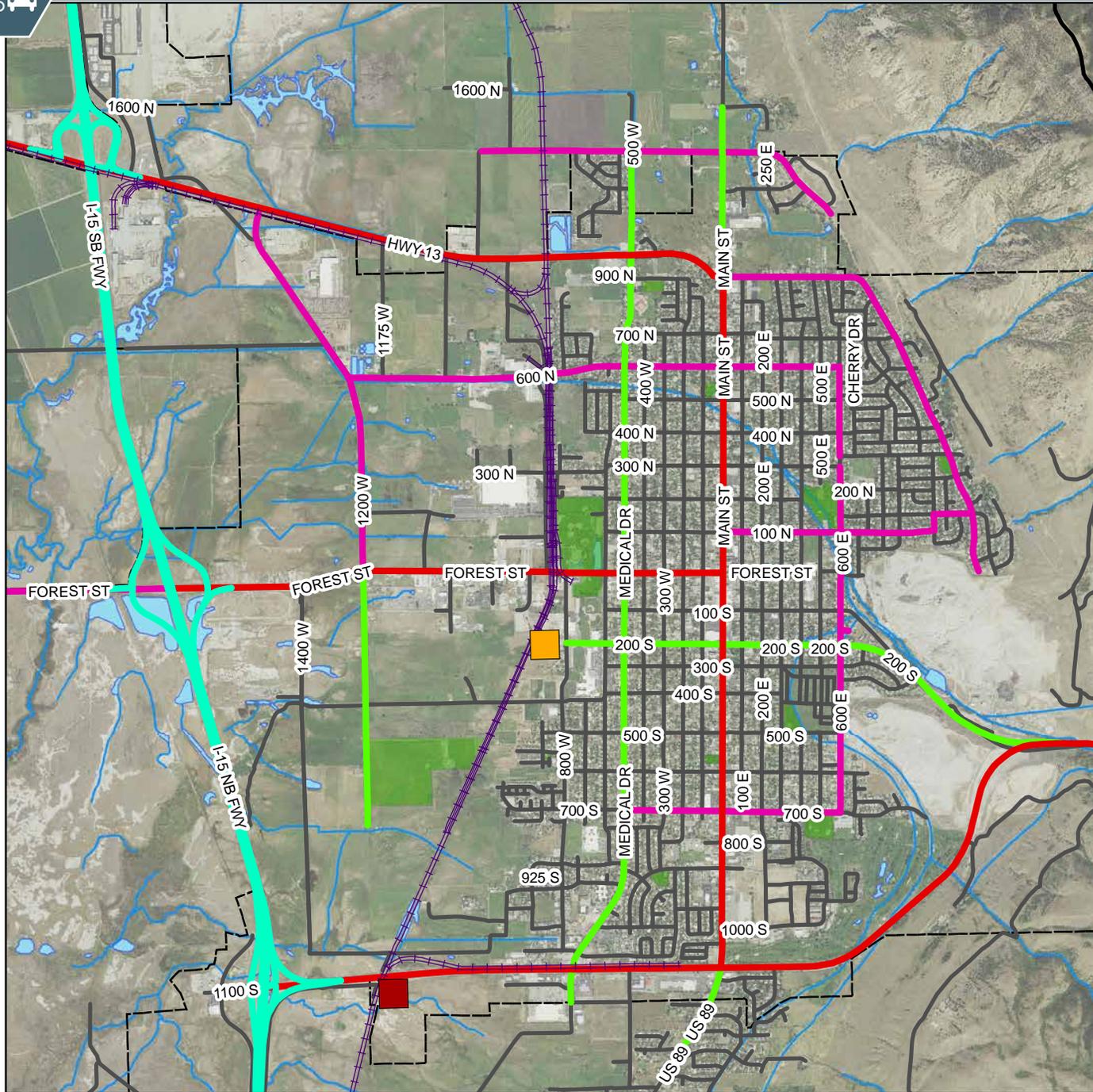


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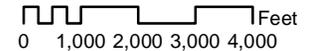
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EXISTING TRANSPORTATION SYSTEM

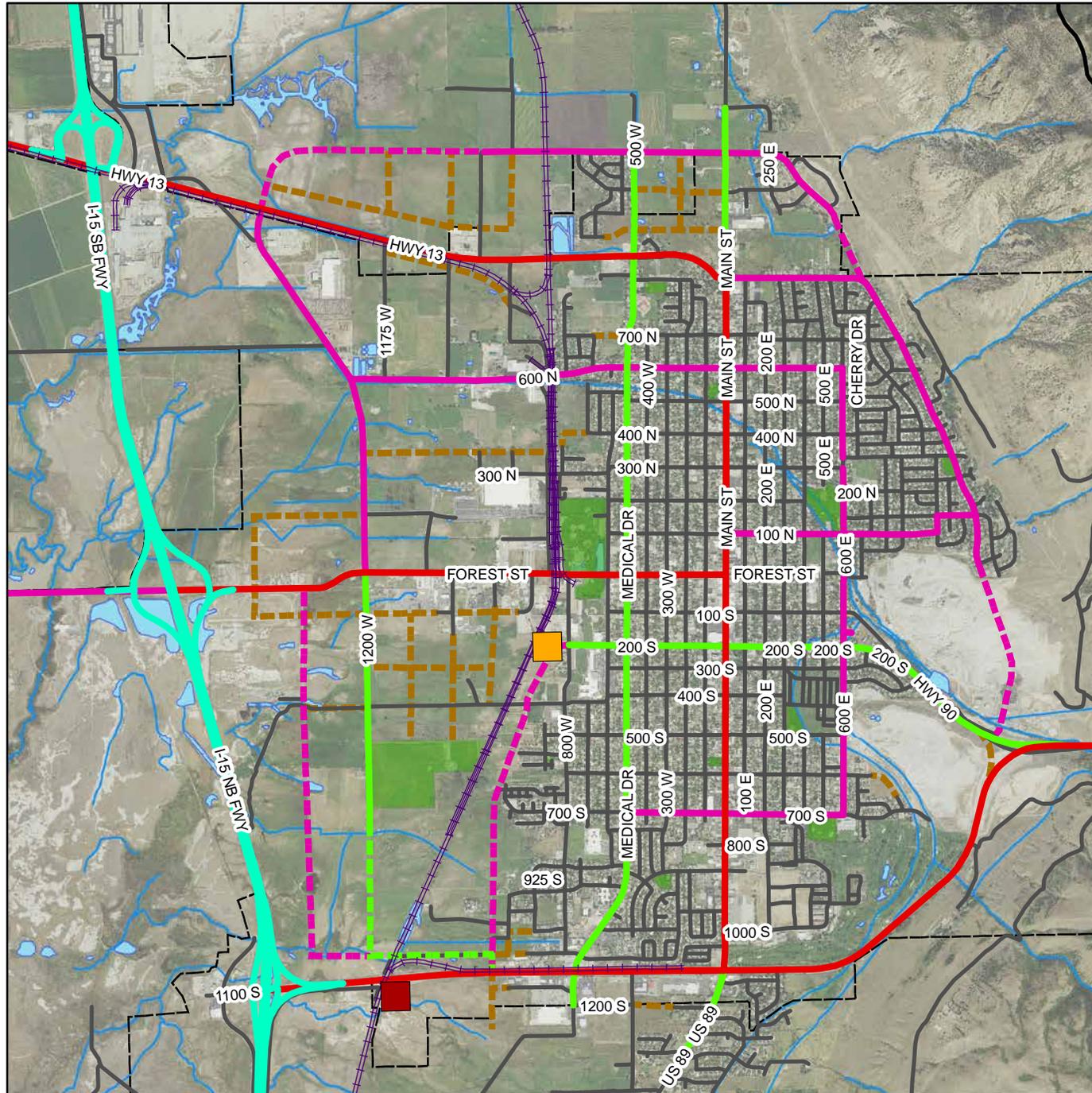


- UTA Station Option at 1100 S ■
- UTA Station Option at 200 S ■
- Railroads
- Freeways
- Principal Arterial
- Minor Arterial
- Collector
- Local Streets
- Brigham City

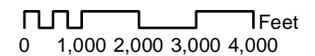


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- UTA Station Option at 1100 S ■
- UTA Station Option at 200 S ■
- Railroads —+—+—+—
- Freeways —
- Principal Arterial —
- Minor Arterial —
- Proposed Minor Arterial - - -
- Collector —
- Proposed Collector - - -
- Local Streets —
- Proposed Local Streets - - -
- Brigham City



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COMPLETE STREETS INCLUDE MULTIPLE MODES AND USERS

COMPLETE STREETS POLICY OF BRIGHAM CITY

There is a tendency to think of roads simply as conduits for moving vehicles quickly and efficiently. This may be the case for freeways or high-speed highways, but most city streets, especially residential ones, should also serve the role of public space. Places where people can stop and enjoy a conversation or a meal or where you might even find children playing. In many communities, the car-focused approach has simply created streetscapes that are too inhospitable for pedestrians or cyclists to use.

By contrast, a “complete street” design integrates diverse modes of transportation in a way that benefits the widest portion of a city’s population as possible. A basic complete street would typically include bike lanes, comfortably-sized

adjacent sidewalks, and narrower traffic lanes for speed calming. Complete streets could also include a paved multi-use path, dedicated transit lanes, street furniture, other traffic calming devices, and transit stations. Curb bulb-outs and raised crosswalks are also ways to increase crossing safety. The width and placement of these additional amenities will vary depending on the size and type of facility.

The residents of Brigham City represent a diversity of ages and incomes. Though the majority of trips taken within Brigham City are by automobile, many Brigham City residents are dependent on others for

their transportation needs. As of 2010, 34.2% of the population was under 18, and an additional 12.1% of the population is over 65, two age groups that tend to suffer mobility challenges. In other words, it is possible that approximately 46.3% of the Brigham City population would enjoy increased mobility options if offered transportation solutions beyond the automobile. Undoubtedly many who do have access to an automobile would still enjoy the option of getting around using other methods whether for practical, health, or recreational reasons.

It is the policy of Brigham City on all new projects and retrofit projects to include facilities that will make travel use by all users possible, regardless of age, handicap, or mode of transportation. Even though not every facility has to accommodate every type of user, the transportation network as a whole should provide



thorough coverage for all. Many major collectors and local roads within the community could be appropriately re-sized, re-striped, or re-designed in order to better accommodate other modes. The following planning project principles have been adapted for Brigham City's use from the WFRC "Complete Streets Vision, Mission, and Principles" Document and should be considered during the planning and design phases of all public infrastructure improvement projects:

- Regional Approach
 - Complete Streets means accommodating all users within the transportation network, but does not mean all modes are on all roads.
 - Engage with WFRC in the regional planning and programming processes to encourage the funding of a balanced, multi-modal transportation system within Brigham City's borders and between them. Significant coordination is needed at the boundary between Brigham City and the City of Perry.
- Network Design
 - All modes and user needs should be considered when projects are designed and implemented in the public right-of-way. Standards should be developed and consistently applied to consider these needs. Development of standards should, among other things, consider the function, adjacent land uses and context of roadways.
 - Consider multi-modal improvements with each street investment in the context of the built environment, existing standards, best practices, regional networks, community impacts, project type, and broad financial constraints.
 - High speed, high volume roads should be evaluated and designed in conjunction with local street connections and with the bike and pedestrian network to provide the most safe and direct routes and crossings as is practicable.
- Integrate local land use and regional transportation systems
 - Promote safe and convenient street crossings and community auto, bike, and pedestrian connections to the regional transportation system, paying particular attention to major destinations and transit stations.
 - Support the development of the Wasatch Choice for 2040 Vision Centers, Main Street Communities, and Boulevard Communities. <http://wasatchchoice2040.com/envisioning-centers>
 - Consider adjacent land use when planning multi-modal transportation systems.
- Consider public health and safety
 - Facilitate physical activity and support healthy lifestyle choices through enhanced street design, maintenance, and operations.
 - Promote improved air quality and accident reduction by reducing the growth in vehicle cold
- The bike and pedestrian network should focus on access to major destinations (as identified in the Sidewalk and Pedestrian Master Plan), transit access, other transportation linkages, ADA access, safe and convenient road crossings, and easily implemented projects.
- Consider all projected future needs in right-of-way acquisitions and street construction in order to minimize expensive system retrofitting.
- Consider changes that make the network more safe, livable, understandable, and hospitable for all modes, users, and trip types including recreational and commuter bicycle riders, pedestrians of all ages and abilities, auto and transit users, and large freight haulers.



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- starts and vehicle miles traveled.
- Calm traffic and reduce accident severity through context sensitive design of public rights-of-way.
- Enhance the regional economy
 - Empower transit riders and non-drivers to broader workforce participation through more and better transportation options.
 - Provide for freight trucks on designated routes and at critical network connections.
 - Increase the economic value of business districts and neighborhoods through more transportation choices and community amenities; focus on cost savings through full utilization of existing infrastructure.
 - Attract a highly skilled labor force to the City through transportation-related quality of life improvements.
- Strengthen sense of community
 - Facilitate more community participation by people who do not own a car through more transportation options.
 - Reflect and create a sense of place through context sensitive design.
 - Restore connectivity to portions of the community divided by large roadways and intersections.
 - Provide children and the elderly with opportunities to safely walk, bike, and ride transit in their community.
 - Increase opportunity for human interaction within the community through multi-modal transportation enhancements.
 - Consider both the comfort of all users and aesthetics in planning, building, and operating streets.

Government for use as an airstrip, the airport has evolved into a fully operational and successful general aviation airport servicing local business, farmers and recreational needs. The airport functions as an important asset to the City and is used by businesses like Autoliv, ATK, and Procter & Gamble in providing executive business travel and specialty express freight services. City residents can easily access the airport via “New Airport Road” by traveling west on SR-13 (900 North). The airport completes a crucial linkage in Brigham City’s multi-modal transportation system.

Based on the current Brigham City Municipal Airport Master Plan that was prepared in August 2012, the Airport is expected to almost double its traffic between 2011 to 2030. The additional required infrastructure to meet this demand will total approximately \$20.8 million with the majority of this money expected to come from grants from the FAA administered through the Airport Improvement Program (AIP). For more information please refer to the “Airport Master Plan - Executive Summary” found at this link: http://siterepository.s3.amazonaws.com/1276/brigham_city_executive_summary.pdf

BRIGHAM CITY MUNICIPAL AIRPORT

Originally constructed in the 1930’s by the Federal

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CONCLUSION

They say you can't steer a ship that isn't moving. This and other sections of the General Plan represent an effort to propel the ship forward through practical and immediate implementation of workable strategies. Nonetheless, since this is intended to be a living document, it is expected that course corrections may be required. Hence, this section should be amended as conditions change and unforeseen obstacles arise. The intent of this chapter is to provide effective and durable tools that will help City staff and officials to fully integrate transportation and land use planning in such a way that will help Brigham City to remain economically vibrant, beautiful, and prosperous.