

appendix: J
FINAL DESIGN CONSIDERATIONS

INTRODUCTION

During plan development, City staff worked with various private property owners to identify existing conditions and understand interests/concerns specific to their properties. This appendix is intended to document the discussions and provide a starting point for considerations for final design. It is not intended to represent ALL issues for consideration, and others may be added in the future. This appendix includes the following elements:

- Wells
- Drainage and Irrigation Ditches
- Driveways and Parking
- Existing Fences
- Sight Distance
- Trees
- Sidewalks and Tree Lawns
- Noise
- Temporary Construction Easements
- Maintenance

WELLS

Several historic wells exist throughout the west segment of the corridor, the majority of which are on private property and are not expected to be impacted by the Recommended Design. One well has been identified as being within the public right-of-way (ROW) and is documented in more detail than others that are not expected to be impacted in any way by the Recommended Design. The final design should take note of these wells and strive to avoid potential impacts to their structures. The following images depict the various wells identified throughout the conceptual design phase.

Well within public right-of-way (ROW)

2730 West Elizabeth Street - Well



- Well owner name: Peter Rhoades, 2730 West Elizabeth Street
- Registered in 2005, constructed (hand-dug and brick-lined) in 1932
- Because it was constructed prior to well permits being required it is considered “grandfathered” by the Colorado Division of Water Resources.
- The well platform is approximately 5’ and is located within the public right-of-way (ROW) approximately 11’ from the property line (north of well) and approximately 11’ from the edge of the existing pavement (south of well).

- The final design should be done in a way to avoid damage to the well structure (likely extremely sensitive due to the hand-dug nature); owner requested that final design concrete work stay 5' from the well and that pre, during and post inspections be performed by an inspector who is selected by the property owner.

Wells outside of the public ROW

The Recommended Design work is not expected to impact these wells as they are outside of the public ROW; however, they are documented here for future reference.

2510 West Elizabeth - Well



2504 West Elizabeth - Well



2450 West Elizabeth - Well



Other addresses with well permits from the Colorado Division of Water Resources (wells not visible from the street):

- 2830 West Elizabeth
- 2740 West Elizabeth
- 2736 West Elizabeth
- 2621 West Elizabeth

DRAINAGE AND IRRIGATION DITCHES

At least one (and possibly more) drainage and/or irrigation ditch runs east/west along the north side of West Elizabeth Street between approximately Kimball Road and Ponderosa Drive. These are located on private property and are not anticipated to be impacted by the Recommended Design. The following images were taken of the existing facilities in the area:

Drainage and irrigation ditches between Kimball and Ponderosa





Drainage improvements will be made as part of the West Elizabeth project in a manner consistent with all City and State regulations. These facilities will be built within the public ROW to handle both conveyance and water quality treatment requirements of all additional runoff that will be generated by this project. Whenever possible, sustainable green infrastructure methods will be used to convey and treat such runoff. Additionally, areas that are currently draining into the ROW will be accommodated to prevent any flooding hazards and to treat and minimize any pollution from that runoff to the maximum extent practicable and in compliance with the City’s Municipal Separated Sewer System (MS4) permit issued by the State of Colorado.

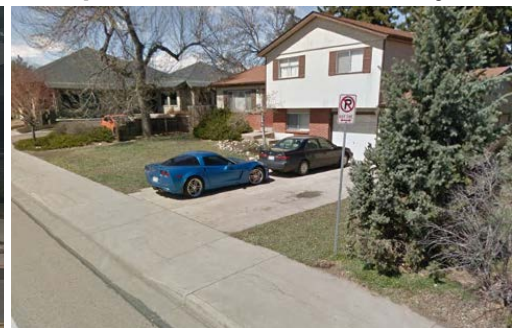
DRIVEWAYS AND PARKING

Currently many driveways have access on West Elizabeth Street. The Recommended Design was developed to minimize impacts to driveways as much as possible. For example, protected barriers for bike lanes are not included in areas where they would impede driveways and driveway length is preserved (or lengthened in several cases) in the majority of locations. Many driveways throughout the corridor are long enough to accommodate double stacking of vehicles as shown in the photos. During final design, the City’s Engineering Department will work with property owners on an individual basis to ensure driveways are viable. If needed, some of the possible improvements that can be made to private property owner driveways include: increasing a single drive-cut to a double (increasing the parking area in front of one’s home) and/or possibly shifting a driveway off of West Elizabeth to a lower volume side street (if feasible).

Example between Cypress and Ponderosa



Example between Taft Hill and Skyline



The north side of West Elizabeth between Taft Hill and Skyline is one area where driveways may be reduced by a few feet; all other driveway lengths in the corridor are either preserved or lengthened.

EXISTING FENCES

Several properties have front yard fences that are actually located within the City ROW. During final design, the City will meet with individual property owners to find a mutually agreeable solution for fence location. The City will work with owners to either relocate or reconstruct fences, at the cost of the project. Per current City code, fences shall be located at least 2' behind the ROW line or at least 2' behind the back of sidewalk; in some cases variances to the City's fence code may be required.

SIGHT DISTANCE

The corridor has several side streets that have limited sight distance for turning onto West Elizabeth, Ponderosa being one of the most commonly mentioned and shown below. In addition, some comments have been noted that trees depicted in the Recommended Design drawings may, upon growth, become sight distance challenges. During final design, the Larimer County Urban Area Street Standards (LCUASS) sight distance analysis will be considered when tree placement is finalized.

South facing vehicle turning left on to West Elizabeth from Ponderosa



TREES

There are many mature trees in the West Elizabeth corridor and it is the City's intent to preserve and support the tree canopy. During final design, the City's Engineering Department will work with the City's Forestry Department to limit the impact to existing trees, and where tree removal is necessary, mitigation trees will be planted in the area per City Code. In cases where existing mature trees are within the LCUASS sight distance triangle, a case by case evaluation of potential mitigation will be made that balances public safety and tree preservation.

Existing mature tree at 2510 West Elizabeth



Existing tree berm at 2450 West Elizabeth



Existing tree at 2738 West Elizabeth and existing tree lawn on south side of Elizabeth near Azuro



SIDEWALKS AND TREE LAWNS

The Americans with Disabilities Act (ADA) requires sidewalks to be a minimum of 4' wide with a 5' passing zone at least every 200'. The City's typical standard is to provide 6' sidewalks on arterial streets like West Elizabeth Street based on extensive research completed on the pedestrian environment and overall community character as part of the development of the Land Use Code in 1997. The research included a visual preference survey to help identify the desired pedestrian environment. This survey overwhelmingly revealed that citizens prefer detached sidewalks (in which a tree lawn separates the sidewalk from the roadway) to sidewalks attached to the street curb. Staff carefully considered the minimum preferred

dimensions for the tree lawn, thinking about comfortable separation for people walking in a defined sidewalk's space, long-term tree health, long-term protection of concrete flatwork from tree root heaving, and the ability to irrigate turf grass.

Staff also evaluated sidewalk widths by taking neutral people out on different width sidewalks. The experience showed that 4.5' is the absolute minimum width that two people can walk together and deemed this width appropriate for local residential streets. On collector and arterial streets with more potential activity, 5-7' sidewalks were preferred as a way to increase pedestrian comfort and to provide enough room for people passing each other and bikes occasionally using sidewalks due to higher traffic volumes.

The Recommended Design proposes a combination of 5' and 6' sidewalks throughout the west segment of the corridor. Five-foot sidewalks are proposed in locations where ROW is limited and/or specific site constraints exist, whereas 6' sidewalks are proposed in areas where adequate ROW exists. A context-sensitive approach will be applied during final design. For example, some 6' sidewalks may be reduced to 5' to help preserve existing mature trees or wells.

Existing sidewalks are narrow and incomplete as noted in the project's Corridor Understanding Report. The images below show some of the existing sidewalk conditions.

Existing sidewalks



West of Ponderosa (5')



West of Ponderosa (3.5')



West of Skyway (5')



West of City Park (5')



East of Skyway (3.5')

NOISE

Property owners have indicated that they regularly experience high levels of noise from the traffic on West Elizabeth Street. The Recommended Design does not increase speed limits in the area, but rather intends to increase the compliance with the existing speed limit of 30 MPH. Some of the design elements intended to reduce speeds include: narrowing of travel lanes, adding central landscaped medians and landscaped parkways in areas where spaces allows, and adding new pedestrian crossings and bus stop islands. These design elements have been proven to help slow traffic and are appropriate for an arterial street like West Elizabeth Street. Additionally, in most cases travel lanes are proposed to be further away from homes than the current travel lanes which may help reduce traffic noise by a small amount.

Other approaches to reducing sound that may be considered include: Transfort's transition to Compressed Natural Gas (CNG) buses, which are quieter than common diesel engines; and the potential for taller fences and potential shrub landscaping.

TEMPORARY CONSTRUCTION EASEMENTS

During final design, the City will meet with individual property owner's to determine if Temporary Construction Easements (TCEs) are needed to complete the work. TCEs are often needed for improvements such as relocating fences, reconstructing landscaping, and constructing sidewalks/driveway aprons. A TCE is a "rented" space used during construction to provide access for the Contractor. The property owner is financially compensated for the use of the space and the TCE agreement expires at the end of construction.

MAINTENANCE CONSIDERATIONS

The Recommended Design includes many elements that are new to many of the property owners in the West Elizabeth Corridor and as such there have been many questions about maintenance responsibilities and how they will change over time. This information is documented in Appendix I.