

# WILLOW STREET IMPROVEMENTS 2015 CONCEPTUAL DESIGN REPORT

## BURLINGTON NORTHERN RAILROAD TRACKS NEAR NORTH COLLEGE AVENUE TO LINDEN STREET

October 22, 2015



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## **i. EXECUTIVE SUMMARY**

The Willow Street Conceptual Report (Report) is a joint effort between the City of Fort Collins (City), the Downtown Development Authority (DDA), Interwest Consulting Group and BHA Design. Willow Street is located within the Downtown River District (District), a sub district of Old Town bordered by the Poudre River, North College Avenue, Jefferson Street, and Lincoln Avenue. Willow Street is unique within the District. Recently, the District has begun a revitalization, with development and streetscape improvements beginning to transform the area. In an effort to support the development, the DDA and City initiated a project to design a cohesive plan for improvements within the right-of-way.

The goals for this project were as follows:

- Maximize on-street parking
- Create a “Sense of Place” by making a welcoming, visually pleasing environment for existing and future land uses
- Create significant urban design features as well as honoring the cultural and history of the River District
- Enhance linkages to Old Town, North College Avenue, and the Poudre River
- Enhance multimodal facilities

In 2008, a roadway cross section was developed for Willow Street as part of the Downtown River District Streetscape Improvements Project. This cross section included on-street center diagonal/outside parallel parking, 10’ and 20’ sidewalk, on-street bike lanes, and single travel lanes in each direction. This Report recommends revising this cross section to include on-street outside diagonal parking on both sides of the street, 15’ sidewalks, and a single travel lane in each direction. More detail is provided throughout this Report regarding the process behind this recommendation.

This project is funded through multiple sources including DDA funds, City Building on Basics 2 funds, and development obligations. Final Engineering and Construction of the improvements will begin as funding becomes available sometime between 2016 and 2025.





# 1. INTRODUCTION

## 1.1. Project Background

Willow Street is in a unique location and considered part of the District. The District is an area which connects Old Town, the Poudre River, light industrial businesses, modern housing, theaters, and the historic downtown Fort Collins. Along Willow Street near Lincoln Avenue is the Ranchway Feeds Complex which was originally a mill on the Poudre River. In 1867, the mill was built to serve local farmers and now adds significant historical value to the District. To power the mill, a millrace was constructed which diverted water from the Poudre River to the mill. The millrace offers a historical connection and theme for urban improvements along Willow Street and the surrounding District.

As part of the revitalization of the downtown area and the District, the Downtown Development Authority (DDA) and the City of Fort Collins (City) prioritized improvements along Willow Street.

The corridor improvements include the conceptual design for Willow Street from the Burlington Northern railroad tracks near North College Avenue southeast to the intersection with Linden Street (the Project). This portion of Willow Street was part of the 2008 Downtown River District Streetscape Conceptual Design Plans (the 2008 Plan). Since that time, the Linden Street Improvements have been implemented and a number of potential development proposals have been brought forward in this area. This corridor improvement study will update the conceptual design for this portion of Willow Street based on public input and specific design influences in this block. In addition, this report will serve as a guideline to better accommodate future development along Willow Street.





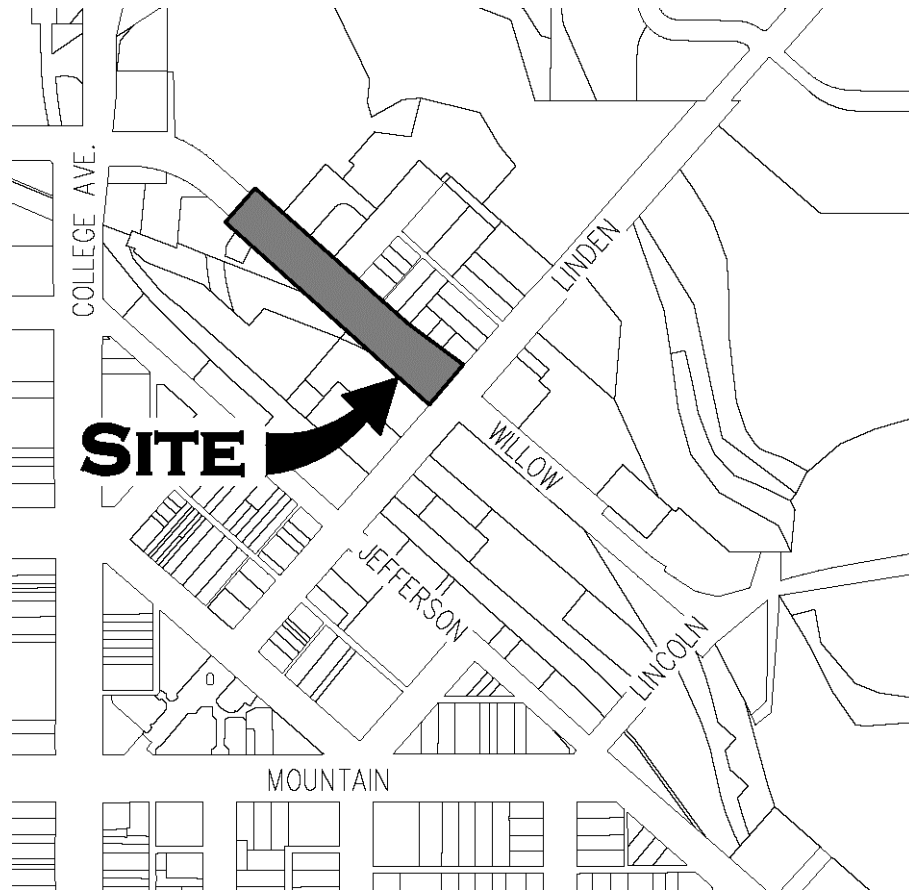


Figure 1 – Vicinity Map

### 1.2. Project Funding

This project is funded through multiple sources including DDA funds, City Building on Basics 2 funds, and development obligations. Final Engineering and Construction of the improvements will begin as funding becomes available sometime between 2016 and 2025.

### 1.3. Project Goals

The project goals for the Project include:

- Maximizing on-street parking
- Creating a “Sense of Place” by making a welcoming, visually pleasing environment for existing and future land uses
- Creating significant urban design features as well as honoring the cultural and history of the River District
- Enhancing linkages to Old Town, North College Avenue, and the Poudre River



- Enhancing multimodal facilities

#### 1.4. Public Involvement

In December 2014, four parking study plans were presented for Willow Street at an open house for the public and stakeholders. The parking study plans and sidewalk sections presented at the open house are included in Appendix A of this report. The parking studies presented at the open house were based on the 2008 Plan for Willow Street and presented modified designs based on property owner and City department input. The street designs varied with 13'/17' wide sidewalk and 10'/20' sidewalk sections. Center diagonal parking versus outside diagonal parking for both the interim and future conditions were also presented.

After the open house, numerous meetings with property owners and project area stakeholders continued. Based on these conversations, an additional roadway cross section was developed. This concept incorporated on-street diagonal parking on both sides of the street, 15' sidewalks, and a single travel lane in each direction.

## 2. EXISTING CONDITIONS

#### 2.1. Roadway Elements

Willow Street is a northwest to southeast roadway located in the River District with a 100' existing right-of-way. However, for the purpose of this project Willow Street will be described in a north/south direction with College Avenue to the north, Jefferson Street to the West, Linden Street to the South and the Cache la Poudre River to the east. Typical land use for Willow Street includes existing and future residential areas, cultural & art venues, commercial/retail centers, and industrial businesses. The City of Fort Collins' Azlтан Community Center is also located on the north end of this section of Willow Street.

#### 2.2. Traffic and Accident Data

Currently Willow Street is categorized as a collector street, with one lane of traffic in each direction and shoulders for bikes in both directions. Minimal parking is available along Willow Street near 401 Pine Street (Bas Bleu Theatre) and the urban condos just north of the theater.

The average daily traffic counts for Willow Street were conducted in July 2015 and includes:

Northbound: 2,846 vehicles



Southbound: 3,291 vehicles

As part of the Crash Data Report conducted in the City of Fort Collins in 2011, the crash density map shows Willow Street as green which means there are very minimal potential crash problem spots along its corridor.

### 2.3. Environmental Assessment

Based on historical data, there is a known petroleum hydrocarbon plume located north of Pine Street in the project corridor. An environmental field investigation was completed in July 2015 at preselected locations that represent the subsurface excavation. Based on field observations and laboratory results, the soils from the project area can be disposed of as non-hazardous soil to appropriate landfill facilities. If dewatering is necessary during construction, it is likely the effluent water will have to be treated prior to discharge. Historical environmental data and the environmental field investigation report are included in Appendix B of this report. Coordination with the City during the construction of the project will be imperative to ensure environmental compliance.

## 3. CONCEPTUAL DESIGN PROCESS & EVALUATION

The design team prioritized public outreach from the onset of the project. The design team conducted individual meetings with impacted property owners to better understand their current and future needs. The design team met with various other stakeholders as well as conducted a public open house to gather input. From these conversations, the team aimed to develop a design which would meet the immediate needs of the area, yet provide an enhanced streetscape for the District's long term vision.

Based on these discussions, the design team developed various sidewalk sections including the following:

- A 13' wide sidewalk on the west side of the roadway and a 17' wide sidewalk on the east side of the roadway
- A 10' wide sidewalk on the west side of the roadway and a 20' sidewalk on the east side of the roadway (the 10'/20' split was identified in the 2008 Plan).
- A 15' wide sidewalk on both sides of the street

The team paired center diagonal parking/outside parallel parking and outside diagonal parking





with each sidewalk scenario. The 10'/20' sidewalk widths and center diagonal parking/outside parallel parking scheme was part of the previously approved 2008 Plan.

There are several benefits associated with center diagonal parking when looking specifically at Willow Street; including no vehicle bumper overhang into sidewalk and amenity areas, maximizing the available parking in the interim conditions, and providing landscaping opportunities in the median areas. Some disadvantages to this parking scheme include a conflict zone for bikes/vehicles at the parallel parking spaces, no defined pedestrian crossing to parking, and delivery vehicles unloading from the street will block traffic.

As the design team further studied the preferred parking scheme for the 2008 Plan, several larger drawbacks to center diagonal parking were identified. These included:

- The center diagonal parking only provides a 17' wide travel way in each direction. The minimum fire lane width for a Poudre Fire Authority (PFA) truck is 20' wide for a building shorter than 30' tall, and the fire lane width required is 30' wide for buildings taller than 30' (those which would require aerial apparatus).
  - The team met with PFA staff and discussed options for buildings taller than 30' if this dimension was not accommodated. Development options were available, including "high rise" architectural features, gaps in the center parking for fire truck staging, etc. Any additional building features would increase the cost of development.
- The 17' wide travel lane is too narrow for cars trying to pull through the center diagonal parking.
- With the center of the street designated for parking, all of the private drives in the area become right in – right out access points.

Utilizing a similar methodology, the design team evaluated the benefits and drawbacks of the outside diagonal parking option. Benefits include:

- Minimum fire lane widths for the PFA are met
- Full access to all drives can be provided
- Urban design opportunities at intersection bulb outs
- Maximizes the distance between vehicular traffic and pedestrians.



Some disadvantages to outside diagonal parking include:

- Vehicle bumpers overhang curbs in sidewalk and amenity areas
- No opportunities for landscaped medians
- Roadway travel lane widths are narrower.

Based on comments from the public, interested stakeholders, one on one meetings with property owners, and the City, the ultimate conceptual design varies from the previously approved 2008 Plan for Willow Street. The preferred conceptual design for Willow Street includes 15' wide sidewalks on each side of the roadway with outside diagonal parking.

This conceptual design provides for safety of pedestrians and bicycles as well as provides large bulb out areas along the roadway corridor for urban design elements and landscaping. This preferred street layout was advocated by the property owners and is also consistent with Linden Street, which currently sets the tone for the District. In addition, based on the mill race design concept, the City felt a literal mill race with running water wasn't appropriate and looked at more interpretive mill race ideas to incorporate into a urban design which would carry more pedestrian traffic and allow for reduced sidewalk width on the east side of the project corridor.

## **4. DESIGN ELEMENTS FOR CONCEPTUAL DESIGN**

### **4.1. Roadway Cross-Section**

The typical roadway cross-section that was chosen after the public input phase and numerous one-on-one meetings with property owners is as follows:

- 10' wide sidewalks sloping at 2%
- 5' wide concrete amenity zone section with varying slope (5% max slope) to curb line
- 19' wide diagonal parking on both sides of the street
- 16' wide travel/bike lane.

The preferred Willow Street Final Conceptual Design plans and typical cross-section are included in Appendix C of this report.

### **4.2. Access**

Based on conversations with existing stakeholders, access into their facilities from all directions is crucial. The interim condition will provide multiple access points into parcels based on



existing business operations. However, once these parcels have been redeveloped, access points will be modified and likely reduced.

#### 4.3. Transit

Currently Transfort has Route No. 8 and No. 81 on this block of Willow Street for public transportation.

#### 4.4. Corridor Character, Theme & Streetscape Enhancements

The character for Willow Street begins with District materials and amenities, which include interlocking pavers, decorative fencing, decorative benches, pedestrian lighting, and planter pots intentionally designed and arranged to subtly reference Fort Collins' past using contemporary forms. To highlight the historic Mill Race water feature, which was located along present day Willow Street, artful modifications were made to the 'standard' District materials and amenities. Water features, reflexology plazas, blue lighting, Mill Race seating, and blue gardens which all reference the water history of the site have been identified for consideration during the final design development of the project. The outcome is a streetscape which fits well thematically into the overall District, while simultaneously highlighting the important historic Mill Race in unique and exciting ways. Willow Street Conceptual Design Urban Alternatives presented at the open house are included in Appendix D of this report.

#### 4.5. Floodplain/Floodway

Willow Street from North College Avenue to Lincoln Avenue is not located within the 100-year Floodplain or Floodway.

#### 4.6. Drainage & Water Quality

Currently storm water collected on Willow Street sheet flows off the roadway into roadside swales and is conveyed into existing area inlets. The only curb and gutter on Willow Street is where recent development has occurred near the north end of the roadway. As part of the redevelopment of Willow Street, curb and gutter will be placed along the roadway and proposed catch basins will be used to collect the storm water runoff. Existing water quality structures downstream in Linden Street will be used to treat the storm water before discharging into the Poudre River.

#### 4.7. Utilities

##### Waterlines:

An 8" waterline exists on the east side of Willow Street from Linden Street north to Pine Street.





The line resides where trees are proposed. The preferred option is to relocate the 8" waterline into the street corridor. In addition, there is an existing fire hydrant on the northeast corner of Linden and Willow intersection that may be relocated from Linden Street to Willow Street to provide additional parking on Linden Street.

#### Sanitary Sewer:

Based on the proposed grades of the roadway near the driveway entrance into the 223 Willow Street (Schrader's Oil Company) property, there is an existing sanitary sewer vault that will need to be adjusted.

#### 4.8. Compatibility with Other Proposed Area Improvements

Willow Street expands upon existing circulation networks within the District and Fort Collins. This will greatly improve vehicular, pedestrian, bicycle, and public (bus) transportation circulation systems along this street. The adjacent Linden Street project implemented the unique design character for the District, and the Willow Street design character fits well into the District, while simultaneously highlighting the important historic Mill Race in unique and exciting ways. Generous sidewalk widths throughout Willow Street ensure that streetscape uses will be adaptable for decades to come.

## **5. OPINION OF PROBABLE COST – CONCEPTUAL DESIGN**

### 5.1. Roadway and Streetscape Improvements

The roadway and streetscape improvements for Willow Street are from the Burlington Northern railroad tracks near North College Avenue southeast to the intersection with Linden Street which is approximately 865 linear feet.

The cost per linear foot for roadway improvements is approximately \$1,400/linear foot (Spring 2015) which is approximately \$1,200,000 for the project limits. This roadway cost includes curb to curb roadway improvements, storm sewer pipes, and structures. A breakdown of the Roadway Improvements Opinion of Probable Costs can be found in Appendix E of this report.

The costs for streetscape improvements with a high level of urban detail is approximately \$37/per square foot (Spring 2015). Based on the conceptual design, the streetscape improvement cost is approximately \$1,200,000 for Willow Street from Linden to the railroad tracks, including the APP Water Feature Plaza located at the corner of Willow Street and Linden Street (excluding the artist's water feature and seating, water feature pumps). The level of urban design improvements for the streetscape has not been finalized at this time, and will likely be funding-



dependent.

The total cost for roadway and streetscape improvements with a high level of urban detail is approximately \$2,400,000.

## 5.2. Utility Improvements

The utility improvements for Willow Street would include:

- Catch basins along Willow Street
- Storm sewer pipeline for new catch basins and tying into existing storm sewer pipes and the Linden Street System
- Relocation of 8" waterline on east side of Willow Street
- Relocation of fire hydrant on northeast corner of Willow and Linden intersection
- Adjustment of existing sanitary sewer vault near the southern driveway at 223 Willow Street (Schrader's Oil Company)

## 5.3. Willow St. and Linden St. Improvements

The recently improved intersection of Willow Street and Linden Street incorporated an interlocking paver timeline, highlighting Linden Street's and Fort Collins' colorful past. There would be minor improvements needed at this intersection to incorporate the newly developed parcel just north of 359 Linden Street (Feeder Supply) at 301-399 Willow Street (Mill House Condos). Also, improvements will be needed for the Art in Public Places work that is proposed for the northeast corner of this intersection.

# 6. **PHASING AND PRIORITIZATION**

## 6.1. Phasing Options

Phasing options will be needed for Willow Street since some parcels have already been developed on the north end of Willow Street; like 112 Willow Street (the City of Fort Collins Aztlan Community Center) and 220 Willow Street (the Willow Street Lofts). Redevelopment has also occurred on the west side of Willow Street at 301-399 Willow Street (Mill House Condos) and on the east side of Willow Street at 316 Willow Street (Wolverine Farm Publishing).

## 6.2. Interim and Final Conceptual Designs

The interim conceptual design plan for Willow Street includes redevelopment of the whole roadway corridor from the Burlington Northern railroad tracks south to Linden Street with



multiple access points into individual properties. As redevelopment occurs, there may be opportunities to further reduce the access points within the project limits which is represented in the final conceptual design plan. The Willow Street Conceptual Design plans are included in Appendix C of this report.

## **7. NEXT STEPS**

### **7.1. Design**

The Conceptual Design for Willow Street is now complete. The final engineering design will commence as funding becomes available sometime between 2016 and 2025.

### **7.2. ROW Acquisition**

The current Conceptual Design is located within the existing right-of-way. Temporary Construction Easements will be needed in order to construct the improvements.

### **7.3. Construction**

Construction of the improvements will begin as funding becomes available sometime between 2016 and 2025.

### **7.4. Maintenance of Improvements**

The City of Fort Collins will be responsible for the maintenance of streetscape improvements in the right-of-way along Willow Street.

### **7.5. Clearances, Permits, & Schedules**

The anticipated clearances and permits for this project include:

- Archaeological Survey & Historic Resource Inventory
- Stormwater Management Plan

The anticipated final engineering design schedule will be approximately 6 months. The ROW/Easement acquisition phase will run concurrent with the final engineering design phase. Construction will begin once ROW/easements have been secured.

## **8. REFERENCES**

City of Fort Collins Advance Planning, 2008 Downtown River District Streetscape Conceptual Design Plan





City of Fort Collins 2011 Traffic Safety Summary, June 2011

City of Fort Collins Utilities Department Maps

City of Fort Collins Master Utility & Drainage Plans

Feeder Supply Construction Plans

Aztlan Site Handbook (Environmental Summary)

Limited Phase II Environmental Site Assessment, Willow Street Project, CTL Thompson Inc.,  
July 2, 2015.

## **9. CONCEPTUAL DESIGN PLANS**

The Willow Street Conceptual Design plans are included in Appendix C of this report.



## APPENDIX A – PARKING STUDY PLANS AND SIDEWALK SECTIONS

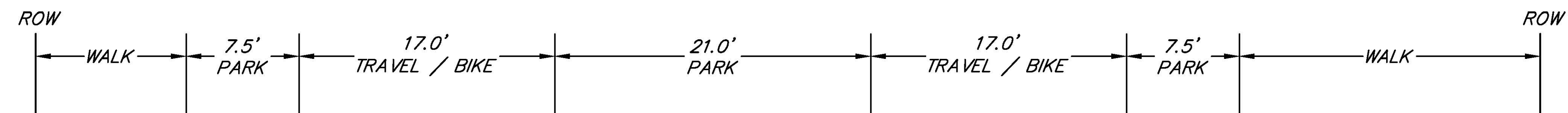
A





WILLOW STREET  
PARKING STUDY PLAN 1  
DECEMBER 10, 2014

INTERIM CENTER DIAGONAL  
TOTAL SPACES = 81



TYPICAL SECTION CENTER DIAGONAL PARKING

CENTER DIAGONAL PROS:

- CURRENT APPROVED PLAN GUIDING DEVELOPMENT
- NO BUMPER OVERHANG INTO AMENITY AREA
- MAXIMIZES PARKING IN INTERIM CONDITION
- MEDIAN AREAS PROVIDE DESIGN OPPORTUNITIES

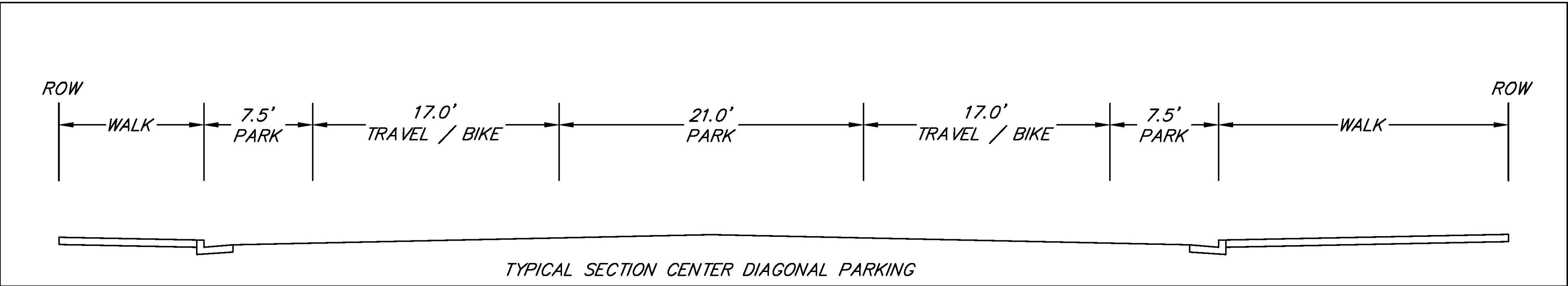
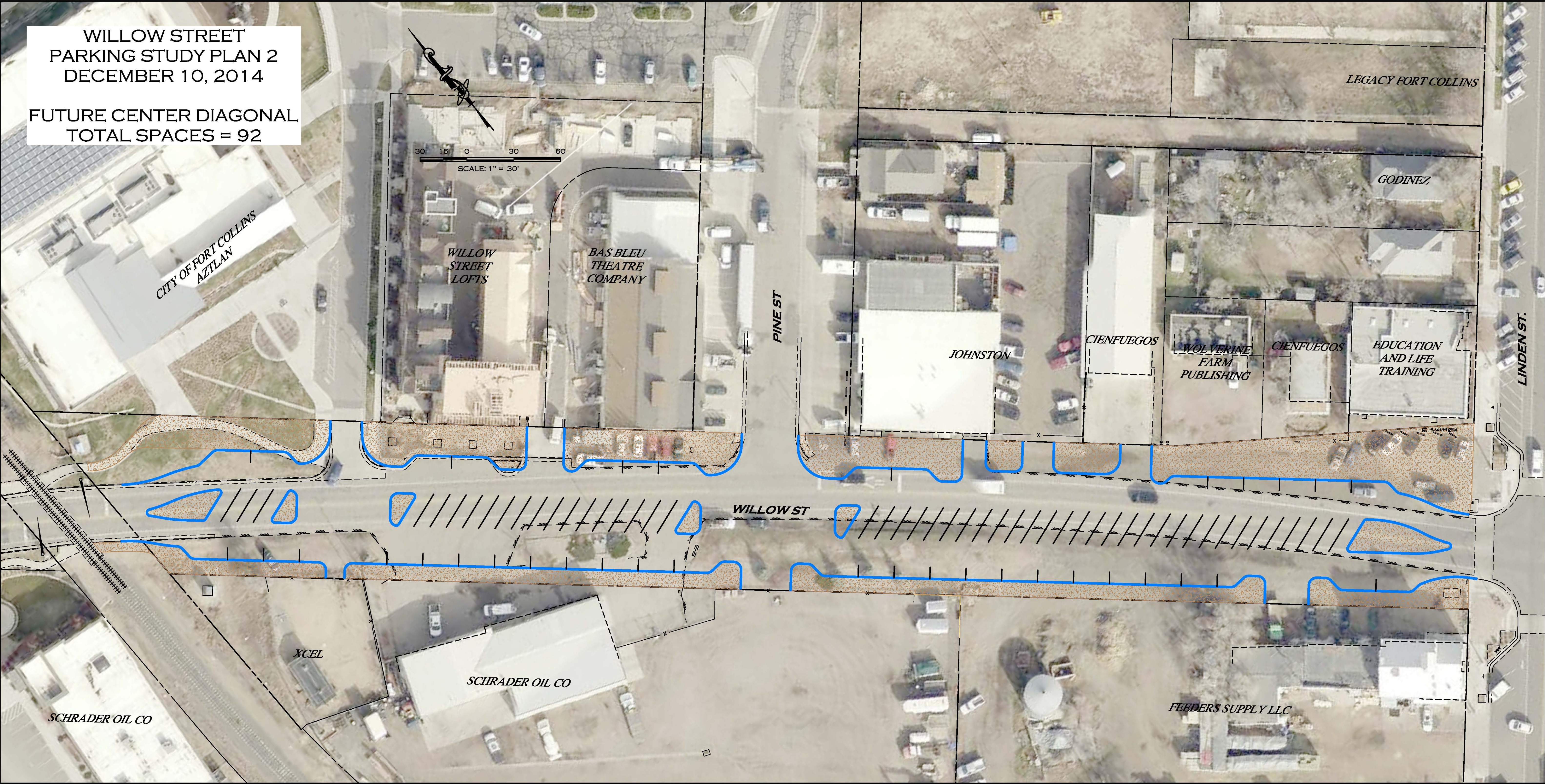
CENTER DIAGONAL CONS:

- BIKES IN PARALLEL PARKING DOOR ZONE
- TOO NARROW FOR CENTER CARS TO PULL OUT FORWARD
- DRIVES ALL RIGHT IN-RIGHT OUT
- DOES NOT MEET FIRE LANE REQUIREMENTS
- NO DEFINED PEDESTRIAN CROSSING TO PARKING
- LESS AREA IN BULB OUTS
- LESS ULTIMATE PARKING
- DELIVERIES MAY BLOCK TRAFFIC



WILLOW STREET  
PARKING STUDY PLAN 2  
DECEMBER 10, 2014

FUTURE CENTER DIAGONAL  
TOTAL SPACES = 92



CENTER DIAGONAL PROS:

- CURRENT APPROVED PLAN GUIDING DEVELOPMENT
- NO BUMPER OVERHANG INTO AMENITY AREA
- MAXIMIZES PARKING IN INTERIM CONDITION
- MEDIAN AREAS PROVIDE DESIGN OPPORTUNITIES

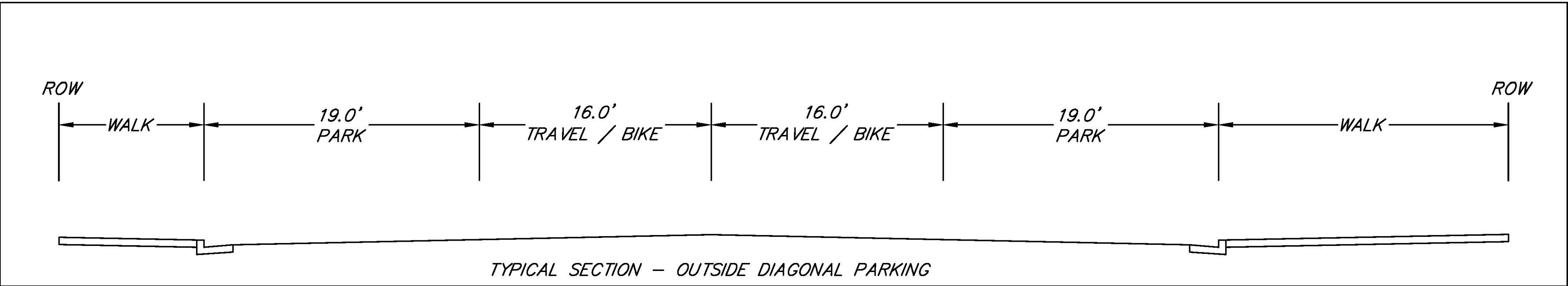
CENTER DIAGONAL CONS:

- BIKES IN PARALLEL PARKING DOOR ZONE
- TOO NARROW FOR CENTER CARS TO PULL OUT FORWARD
- DRIVES ALL RIGHT IN-RIGHT OUT
- DOES NOT MEET FIRE LANE REQUIREMENTS
- NO DEFINED PEDESTRIAN CROSSING TO PARKING
- LESS AREA IN BULB OUTS
- LESS ULTIMATE PARKING
- DELIVERIES MAY BLOCK TRAFFIC



WILLOW STREET  
PARKING STUDY PLAN 3  
DECEMBER 10, 2014

INTERIM OUTSIDE DIAGONAL  
TOTAL SPACES = 78



OUTSIDE DIAGONAL PROS:

- MATCHES LINDEN STREET (RIVER DISTRICT CONTINUITY)
- MEETS FIRE LANE REQUIREMENTS
- FULL ACCESS TO ALL DRIVES
- LARGER BULB OUTS FOR AMENITIES
- MAXIMIZES ULTIMATE PARKING COUNT
- MAXIMIZES DISTANCE BETWEEN TRAFFIC AND PEDESTRIANS

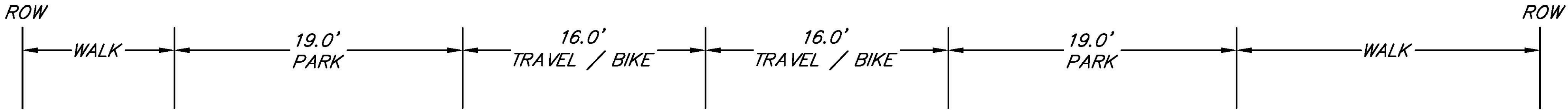
OUTSIDE DIAGONAL CONS:

- BUMPERS OVERHANG OVER CURBS INTO AMENITY AREA
- NO MEDIANS FOR AMENITIES
- NARROWER TRAVEL WIDTH



WILLOW STREET  
PARKING STUDY PLAN 4  
DECEMBER 10, 2014

FUTURE OUTSIDE DIAGONAL  
TOTAL SPACES = 95



TYPICAL SECTION - OUTSIDE DIAGONAL PARKING

OUTSIDE DIAGONAL PROS:

- MATCHES LINDEN STREET (RIVER DISTRICT CONTINUITY)
- MEETS FIRE LANE REQUIREMENTS
- FULL ACCESS TO ALL DRIVES
- LARGER BULB OUTS FOR AMENITIES
- MAXIMIZES ULTIMATE PARKING COUNT
- MAXIMIZES DISTANCE BETWEEN TRAFFIC AND PEDESTRIANS

OUTSIDE DIAGONAL CONS:

- BUMPERS OVERHANG OVER CURBS INTO AMENITY AREA
- NO MEDIANS FOR AMENITIES
- NARROWER TRAVEL WIDTH



# Willow Street Conceptual Design

## Sidewalk Section Alternatives

December 10, 2014

### 13'/17' SIDEWALK SECTION - OPTION 1



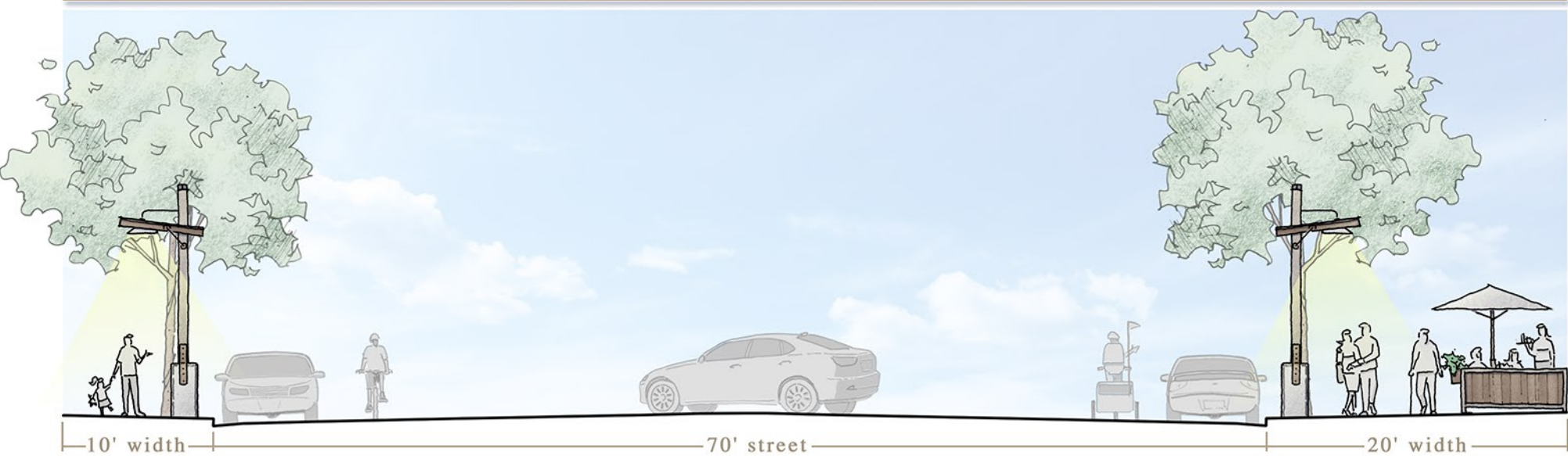
#### 13'/17' PROS:

- provides adequate room for outdoor dining/other sidewalk amenities
- reserves space for millrace
- oversized walk on sunny side of street
- meets the project goals

#### 13'/17' CONS:

- walk width not equally split on each side of street
- less available space for millrace (compared to 20' wide sidewalk)

### 10'/20' SIDEWALK SECTION - OPTION 2



#### 10'/20' PROS:

- maximize space for millrace
- oversized walk on sunny side of street
- meets approved River District development plan
- meets the project goals

#### 10'/20' CONS:

- walk width not equally split on each side of street
- difficult to achieve all of the desired amenities with a 10' wide sidewalk
- too much space on 20' wide sidewalk could create a desolate streetscape



## APPENDIX B – ENVIRONMENTAL DATA AND FIELD INVESTIGATION REPORTS

B



**APPENDIX C – WILLOW STREET CONCEPTUAL DESIGN PLANS**  
**AND TYPICAL CROSS-SECTION**

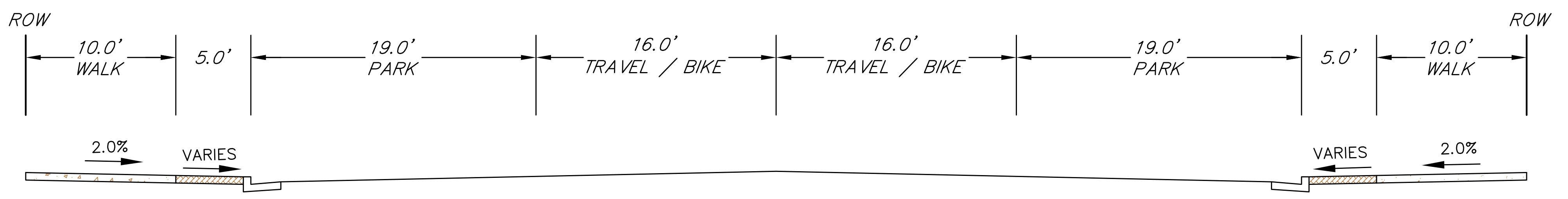
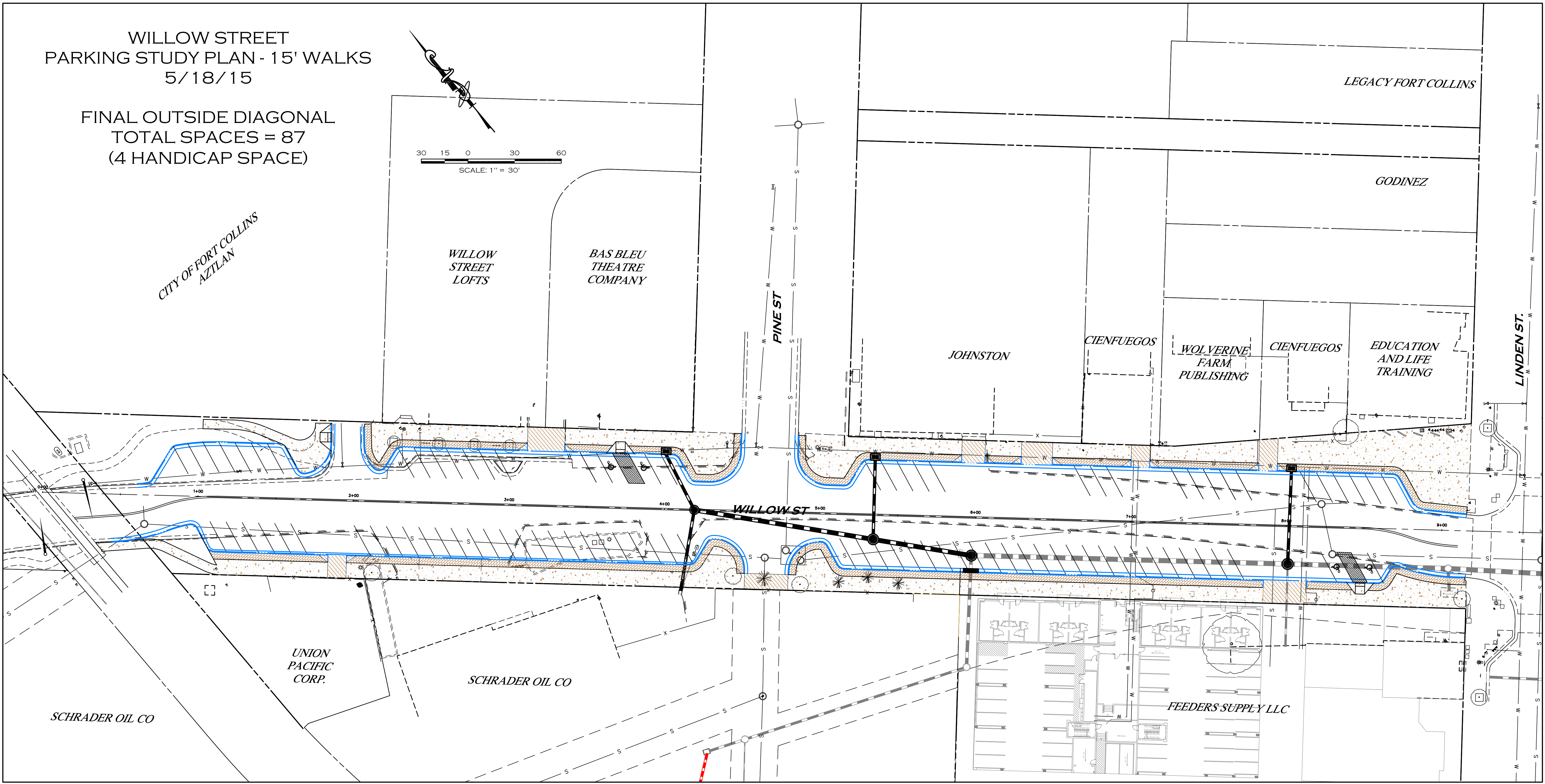
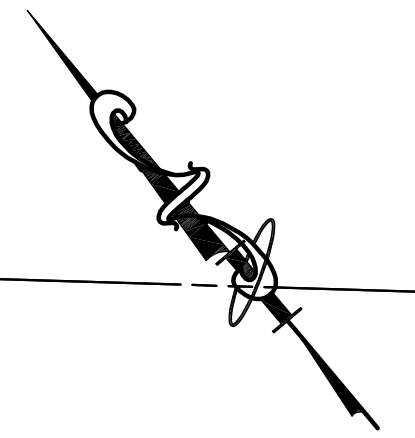
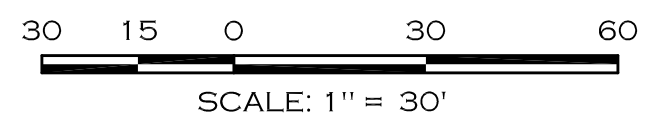
C





WILLOW STREET  
PARKING STUDY PLAN - 15' WALKS  
5/18/15

FINAL OUTSIDE DIAGONAL  
TOTAL SPACES = 87  
(4 HANDICAP SPACE)

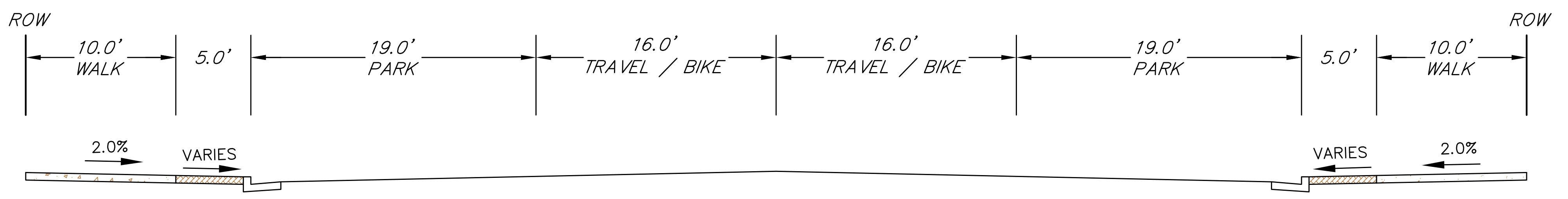
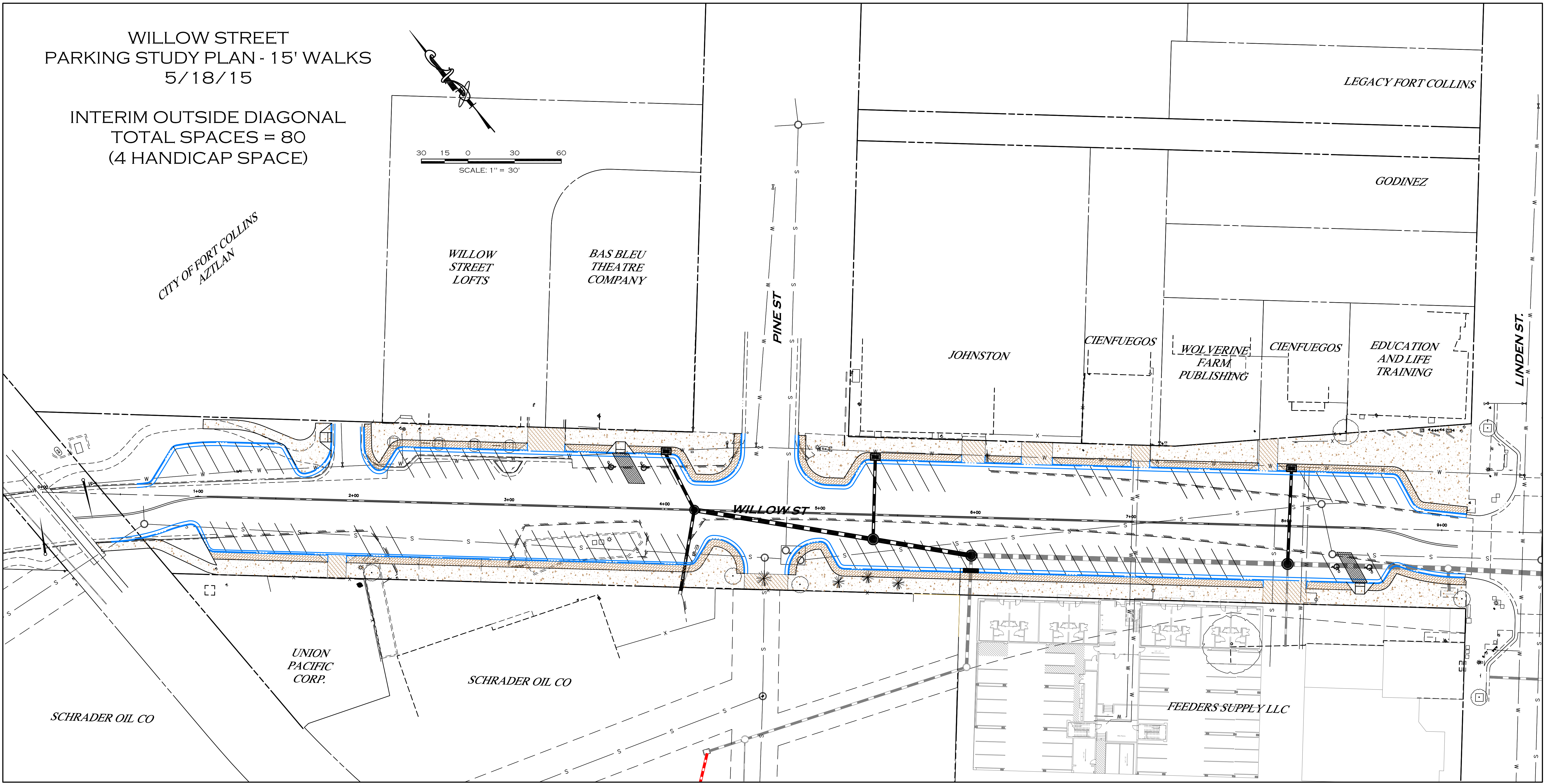
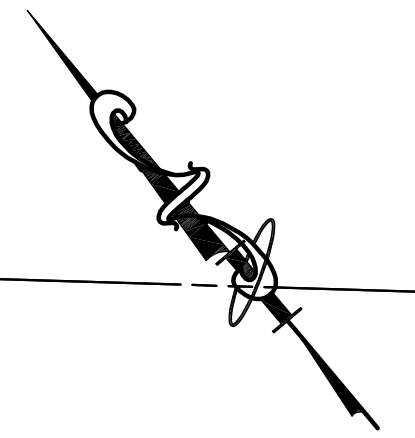
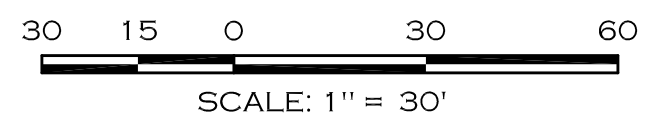


TYPICAL SECTION - OUTSIDE DIAGONAL PARKING



WILLOW STREET  
PARKING STUDY PLAN - 15' WALKS  
5/18/15

INTERIM OUTSIDE DIAGONAL  
TOTAL SPACES = 80  
(4 HANDICAP SPACE)



TYPICAL SECTION - OUTSIDE DIAGONAL PARKING



## APPENDIX D – CONCEPTUAL DESIGN URBAN ALTERNATIVES

D





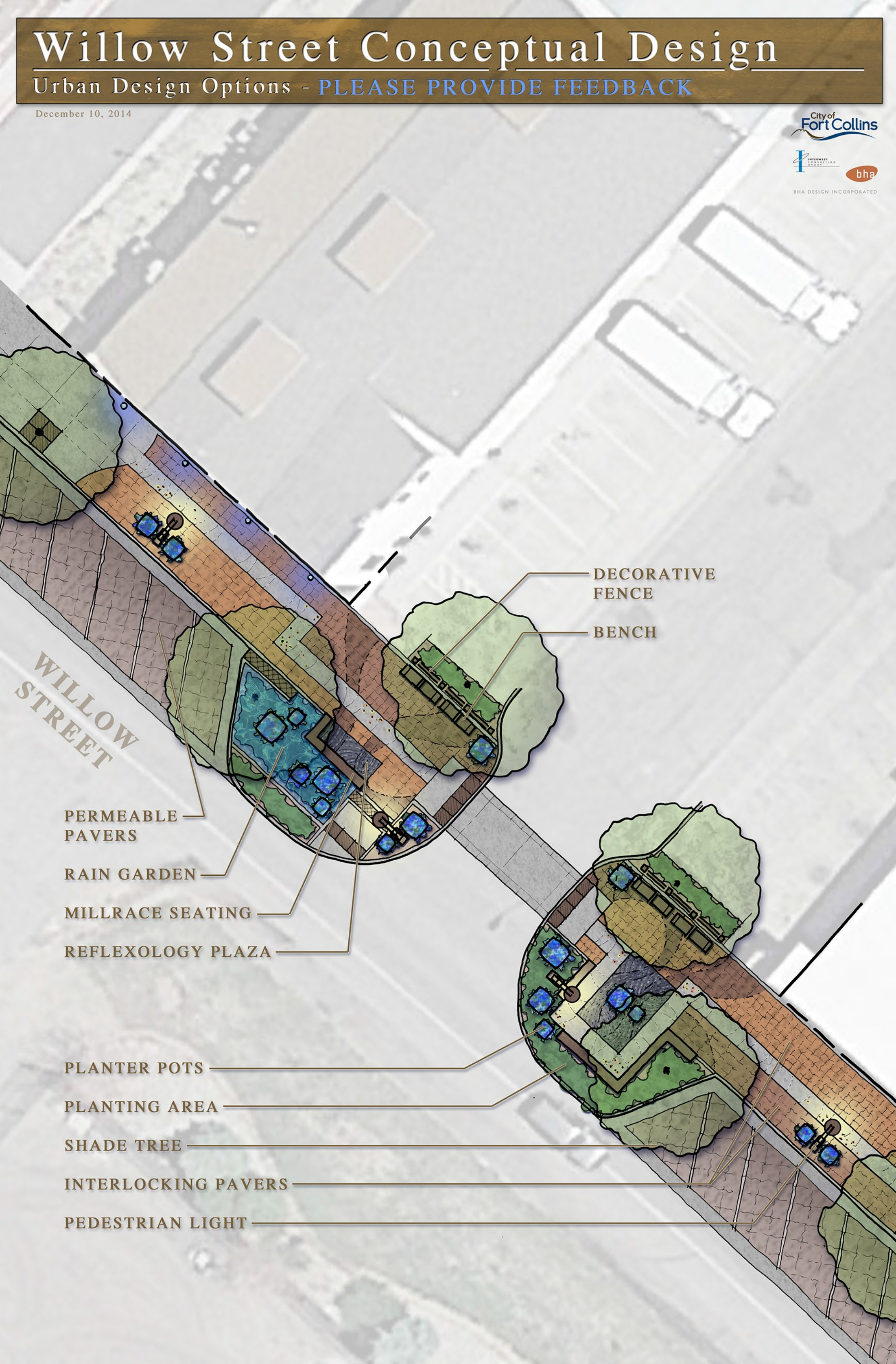
# Willow Street Conceptual Design

Urban Design Options - PLEASE PROVIDE FEEDBACK

December 10, 2014



BHA DESIGN INCORPORATED



WILLOW STREET

PERMEABLE  
PAVERS

RAIN GARDEN

MILLRACE SEATING

REFLEXOLOGY PLAZA

PLANTER POTS

PLANTING AREA

SHADE TREE

INTERLOCKING PAVERS

PEDESTRIAN LIGHT

DECORATIVE  
FENCE

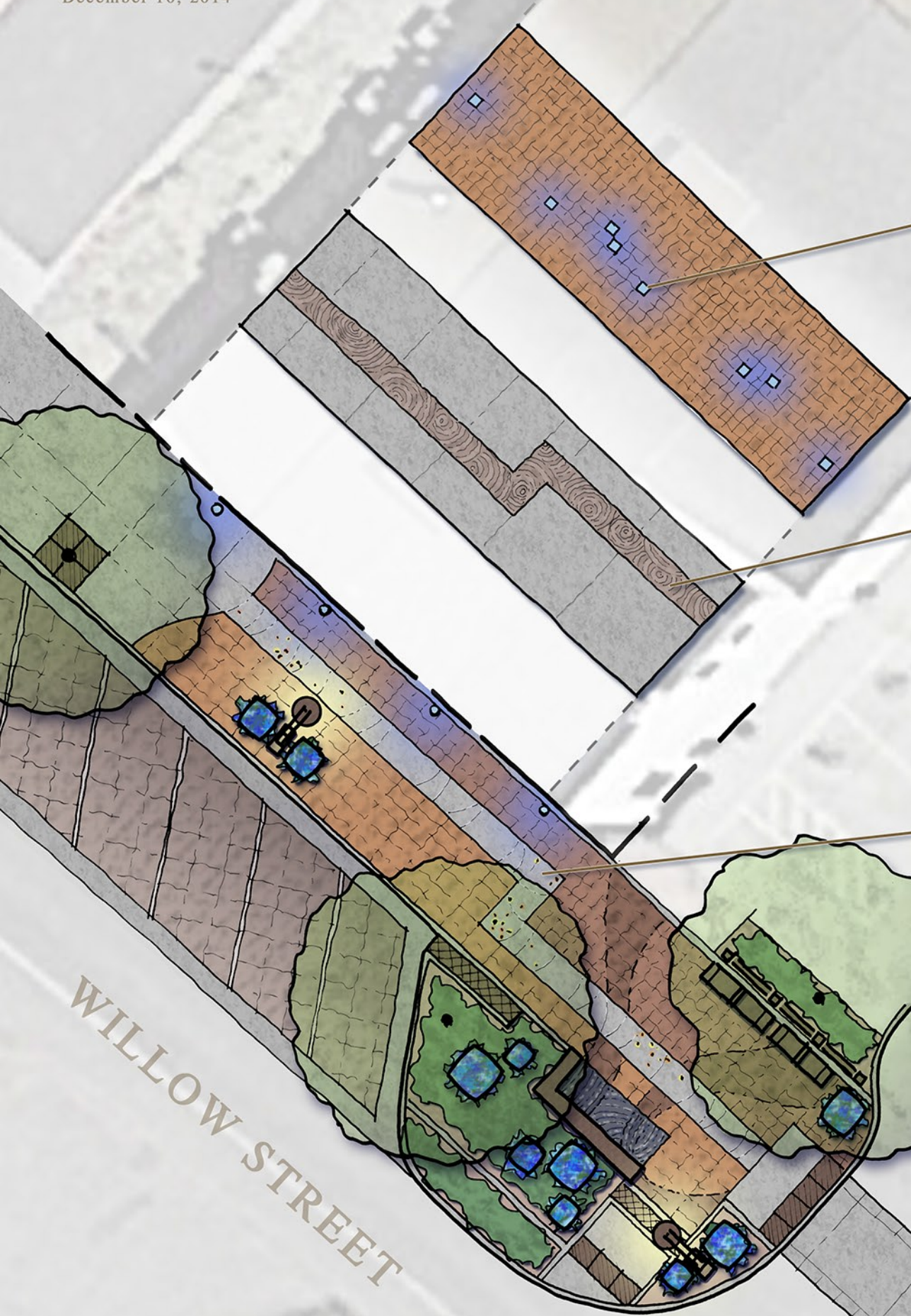
BENCH



# Willow Street Conceptual Design

Urban Design Options - PLEASE PROVIDE FEEDBACK

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## SIDEWALK OPTION A

Blue lit pavers (or metal grates uplit with blue light) are inset throughout the walk, recreating the path of the historic millrace.



## SIDEWALK OPTION B

Concrete walks flank pavers installed in radial patterns, which mimic the form of raindrops on a pond, reminiscent of the historic millrace.



## SIDEWALK OPTION C

A paver walkway flanks gray concrete jointed to mimic moving water, with patterned and stained concrete leaves interspersed throughout.



## REFLEXOLOGY PLAZA

Smooth river stones arranged in fluid patterns create a unique urban plaza.



## MILL RACE SEATING

Aged timbers of a massive scale with riveted steel strapping evoke the memory of past industrial uses, specifically Auntie Stones' flour mill. River cobble enclosed in steel mesh creates a gabion bench on the back of the seating, and 'MILLRACE' is burned or stained into the timbers, creating a historic brand.

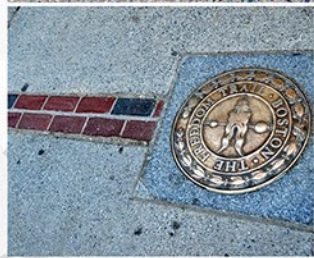
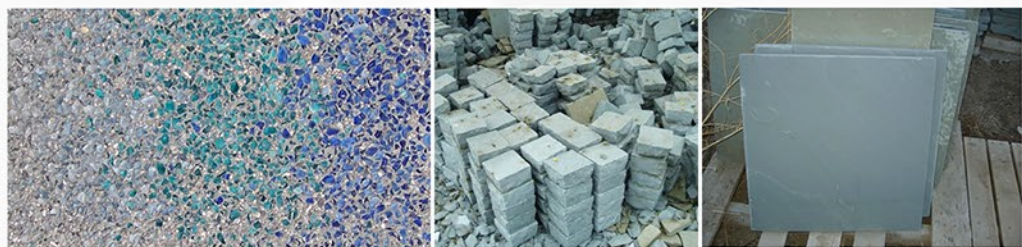




# Willow Street Conceptual Design

Urban Design Options - PLEASE PROVIDE FEEDBACK

December 10, 2014



## SIDEWALK OPTION D

Similar to how the Freedom Trail is marked using red brick in Boston, blue-green stone or crushed glass embedded in concrete could be used to recognize the millrace (please see other boards for sidewalk options A, B, and C).

## MOVING WATER SOUND ART

Speakers located throughout Willow Street can play the sounds of trickling water, industrial waterwheels turning, etc.



## BLUE LIGHTING

Building facades fronting Willow Street can be side lit with a wash of distinct blue light, providing a unique and memorable nighttime effect.

## BLUE GARDEN

Located in planter pots or planting beds, carefully selected plants with blue flowers awaken the senses to the water history of the site.



WILLOW STREET



## MILLRACE FURNISHINGS

River District pedestrian lights and fence panels can be fabricated to include blue 3Form acrylic panels (pictured at left). This allows the Willow Streetscape design to fit within the larger River District context, while simultaneously recognizing the site specific millrace history of Willow Street.





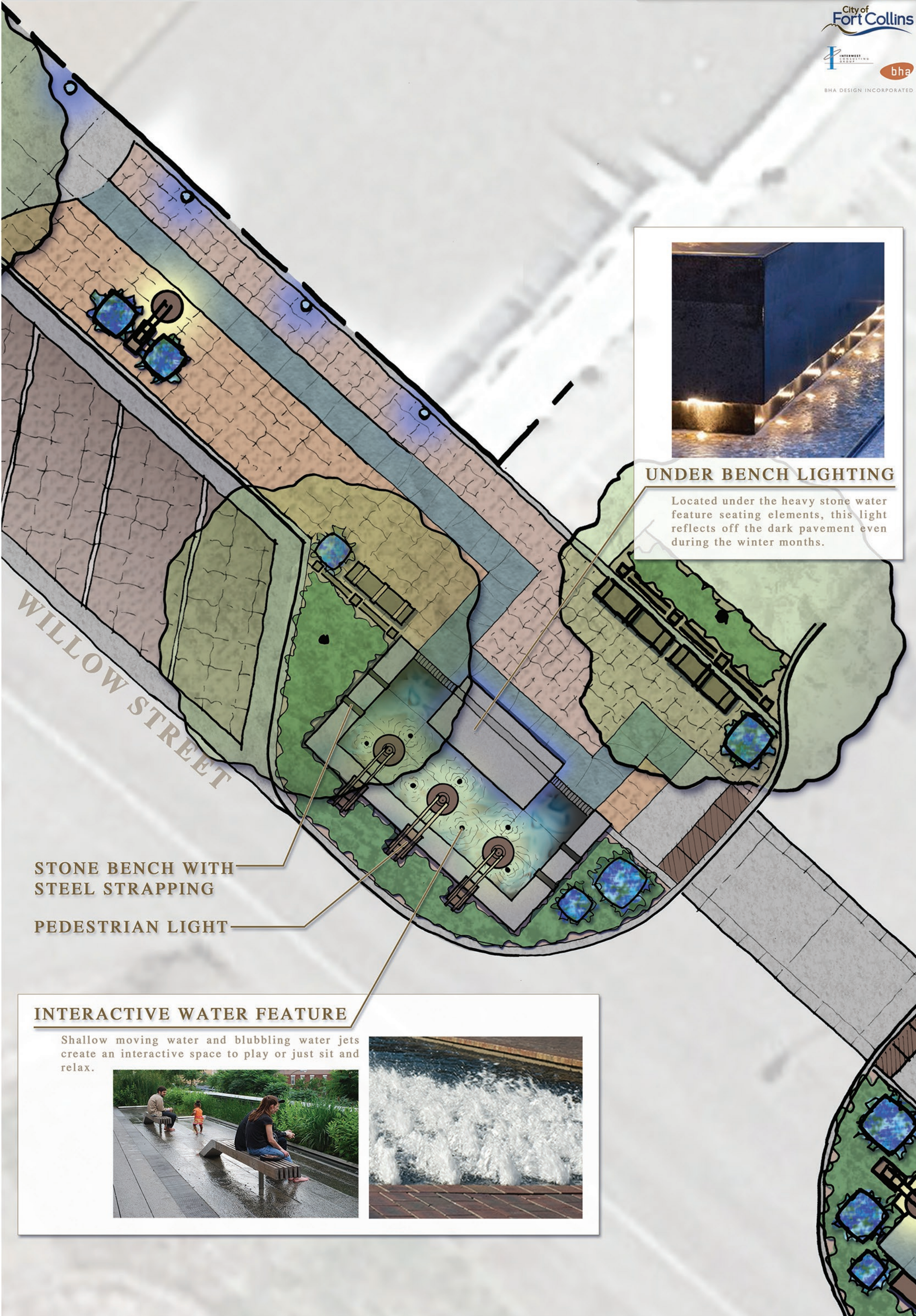
# Willow Street Conceptual Design

Urban Design Alternatives-PLEASE PROVIDE FEEDBACK

December 10, 2014



BHA DESIGN INCORPORATED



## UNDER BENCH LIGHTING

Located under the heavy stone water feature seating elements, this light reflects off the dark pavement even during the winter months.

STONE BENCH WITH  
STEEL STRAPPING

PEDESTRIAN LIGHT

## INTERACTIVE WATER FEATURE

Shallow moving water and blubbling water jets create an interactive space to play or just sit and relax.





## APPENDIX E – OPINION OF PROBABLE COST

E

