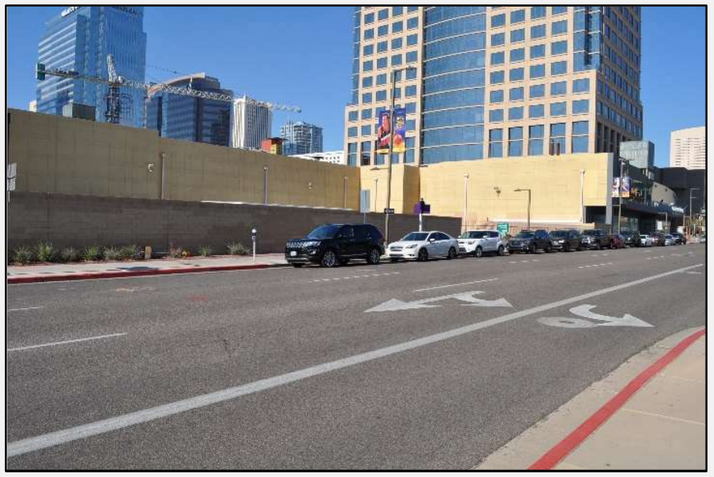
3rd Street Pre-Design and Feasibility Study Of Roadway Improvements: Washington Street to Lincoln Street

Project No: ST87100163-1

Final Feasibility Report

April 2019



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EXPIRES 12/31/2019

EXECUTIVE SUMMARY

This Pre-Design and Feasibility Study evaluated proposed modifications to 3rd Street from Lincoln Street to Washington Street identified in the City of Phoenix Comprehensive Bicycle Plan (PCBP) and Downtown Phoenix Comprehensive Transportation Plan (DPCTP). The recommendations in these plans, adopted by the City Council, includes converting 3rd Street from a one-way to a two-way street and enhancing infrastructure for bicyclists and pedestrians. Other modifications include maintaining on-street parking, integrating passenger pick-up/drop-off locations, and creating a railroad crossing quiet zone.

Goal and Objective

The goal of the study was to develop a feasible solution that incorporated the recommendations from the DPCTP and PCBP, to enhance better mobility and access to area businesses, residents, and downtown development. The objective was to develop a preliminary engineering concept plan that is generally accepted by the major stakeholders within the study corridor. The concept plan included a two-way bicycle facility, sidewalk, maintaining on-street parking and pick-up/drop-off areas, railroad crossing/quiet zone conversion, and converting one-way traffic to two-way on 3rd Street. In addition, the concept plan must provide flexibility to accommodate the Downtown Events Management Plan or "Sunburst Plan" which was developed to manage the distribution of inbound and outbound event traffic using the downtown street network and parking facilities.

This study examined the existing condition with daily commuters, existing railroad crossing, pedestrian and bicycle access, planned development within the corridor, and issues associated with event-related conditions. The process evolved through a series of six key steps.

Stakeholder Engagement

The major stakeholders included the Warehouse District, Talking Stick Resort Arena, Chase Field Ballpark, Sports Organizations (Phoenix Suns and Diamondbacks), and Phoenix Convention Center. Outreach meetings were held with major stakeholders to understand the issues, concerns, and opportunities for the purpose of identifying potential solutions in meeting the project goal and objective.

Alternatives Development and Evaluation

A total of four alternatives including the No-Build were developed and evaluated. These included various combinations of lane reconfiguration within the existing curb to add bicycle lanes and a northbound motor vehicle travel lane along the corridor. Lane reconfiguration was accomplished by narrowing lanes, repurposing one of the three existing southbound motor vehicle travel lanes, and repurposing the on-street parking on the east side of 3rd Street. One alternative included reconstructing the sidewalk on the west side of 3rd Street to add a raised two-way cycle track.

The major stakeholders along the corridor provided input regarding streetscape elements and operations that were important to their businesses. This included maintaining two lanes of southbound capacity for special event traffic, maintaining an ADA-accessible drop-off area south of Jefferson, being able to execute an egress flushing pattern from the Jefferson Street garage with minimal conflicts with pedestrians and bicyclists, and providing a high-comfort bicycle facility between the Warehouse District and Downtown.

Preferred Alternative

A phased solution was identified to meet the project's goal and objectives that balanced the desires and concerns of the stakeholders. The existing curb lines will remain with lane reconfiguration accomplished via paint striping to facilitate mobility for bicyclists, maintain motor vehicle capacity, and allow day-to-day flexibility to accommodate varying special event needs.

Phase 1 of the Preferred Alternative includes the following elements:

- Perform micro-sealing of the existing pavement to create a uniform pavement surface for the lane reconfiguration.
- Between Lincoln St and the Union Pacific Railroad (UPRR), restripe the roadway cross-section from west to east with an 11-foot two-way cycle track; 8.5-foot parking lane; two 10-foot southbound travel lanes; and one 10.5-foot northbound travel lane.
- Terminate the northbound travel lane at the proposed Ballpark Apartments 3rd Street driveway.
- Install traffic signal modifications at 3rd St/Lincoln St to permit northbound motor vehicle traffic.
- Between the UPRR and Jefferson St, restripe the roadway cross-section from west to east with an 11-foot two-way cycle track; 8.5-foot parking lane; two 10-foot southbound travel lanes; and one 11-foot southbound travel lane.
- Install traffic control for the northbound bicycle lane at Jackson St (signs) and Jefferson St (bicycle signal face and revise signal timing).
- Between Jefferson St and Washington St, restripe the roadway cross-section from west to east with an 11-foot two-way cycle track; 8.5-foot parking lane; two 10-foot southbound travel lanes; and one 11-foot southbound dedicated left-turn lane.
- Install traffic control for the northbound bicycle lane at Washington St (bicycle signal face and revise signal timing).
- Perform minor ADA and curb modifications along the corridor.
- Install vertical separation between parking lane and cycle track where feasible.
- Install dashed green pavement markings along the cycle track at driveway and intersection conflict areas.

Phase 2 of the preferred alternative would implement the following in addition to the Phase 1 elements:

- Reconstruct railroad crossing gates to convert the UPRR crossing to accommodate both southbound and northbound traffic and implement a permanent quiet zone.
- Modify pavement markings to extend an 11-foot northbound travel lane along east side curb lane from the proposed Ballpark Apartments to Washington Street.
- Install traffic control sign, signals, and pavement markings for the northbound motor vehicle lane along 3rd St and where 3rd St intersects with Jackson Street, Jefferson Street, and Washington Street.
- Repurpose the parking lane between Jackson Street and Washington Street to a southbound travel lane to maintain southbound capacity through the 3rd St/Jefferson St intersection and adjacent to the Jefferson Street Garage

The Preferred Alternative incorporates several local, regional, and national innovations including: roadway reconfiguration; pedestrian safety countermeasures; cool pavement; and a separated bicycle facility with green pavement markings and bicycle signal faces.

The total estimated cost for the Preferred Alternative is $1,545,300 which includes $352,100 for Phase 1 and $1,193,200 for Phase 2. A detailed cost estimates are included in Section 8.0 of this report.

Downtown Transportation Plan Update

At the time of this report, the City is conducting a Downtown Transportation Plan Update to evaluate overall traffic circulation through year 2025, and options to alleviate potential challenges from increased development, special events and Light Rail Transit in the Downtown area. The study builds upon the DPCTP and focus on two primary areas.

- System improvements to improve accessibility and circulation.
- Area specific plan recommendations for three high growth locations – Entertainment Area/Convention Center; Roosevelt Arts District North; and Bio-Campus/Arizona Center.

Depending on the findings and recommendations of the Downtown Transportation Plan Update, the Preferred Alternative should be evaluated and the proposed improvements modified, if necessary, to support the Downtown Transportation Plan Update.

1.0 INTRODUCTION

1.1 Purpose of Study

The purpose for the 3rd Street Pre-Design and Feasibility Study is to evaluate proposed modifications to 3rd Street from Lincoln Street to Washington Street that were identified in the City of Phoenix Comprehensive Bicycle Plan and Downtown Phoenix Comprehensive Transportation Plan. The pre-design and feasibility study will evaluate recommendations in these plans adopted by the City Council which includes converting 3rd Street from a one-way to a two-way street, incorporating bicycles and pedestrians. Other modifications include maintaining on-street parking, enhancing passenger pick-up/drop-off locations, and creating a railroad crossing quiet zone. This study will prepare a recommended design concept for approval by City management and the community. This will allow the City to proceed into the next phase of implementation.

1.2 Study Area

The 3rd Street corridor within the study area is a north-south collector street which runs through downtown Phoenix. The study area is approximately one-half mile in length from Washington Street to Lincoln Street.

Presently, 3rd Street, between Lincoln Street and Washington Street, is a one-way street in the southbound direction with three vehicular lanes and on-street parking. This segment of 3rd Street has three signalized intersections, one all-way stop controlled intersection, one minor street stop-controlled intersection, and an at-grade railroad crossing of the Union Pacific Railroad (UPRR) controlled by flashing lights and automated gates for southbound traffic. The Phoenix Convention Center, Talking Stick Resort Arena, and Chase Field are located in the vicinity of the north end of the study area. The south half of the study area is located within the Phoenix Warehouse District. This corridor also serves as a pedestrian connector and an alternative vehicular route into downtown Phoenix. The study area is shown in **Figure 1.**

2.0 BACKGROUND

In 2014 the City of Phoenix completed the Phoenix Comprehensive Downtown Transportation Study (PDCTS) to provide a new vision for downtown access and a multi-year mobility plan for improving the downtown transportation system. The impetus for the study was that better mobility and access will benefit area businesses, residents, and downtown development. Study recommendations included specific improvements for 3rd Street within this project's study area including:

- Converting 3rd Street from one-way to two-way motor vehicle traffic, improving connections to Arizona State University's (ASU) Downtown Campus, and enhancing access for residents and businesses in the Phoenix Warehouse District.
- Adding bicycle lanes to 3rd Street defining it as a bicycle corridor into and out of downtown.
- Enhancing the Downtown Events Management Plan (Sunburst Plan) to minimize travel delays for special events.

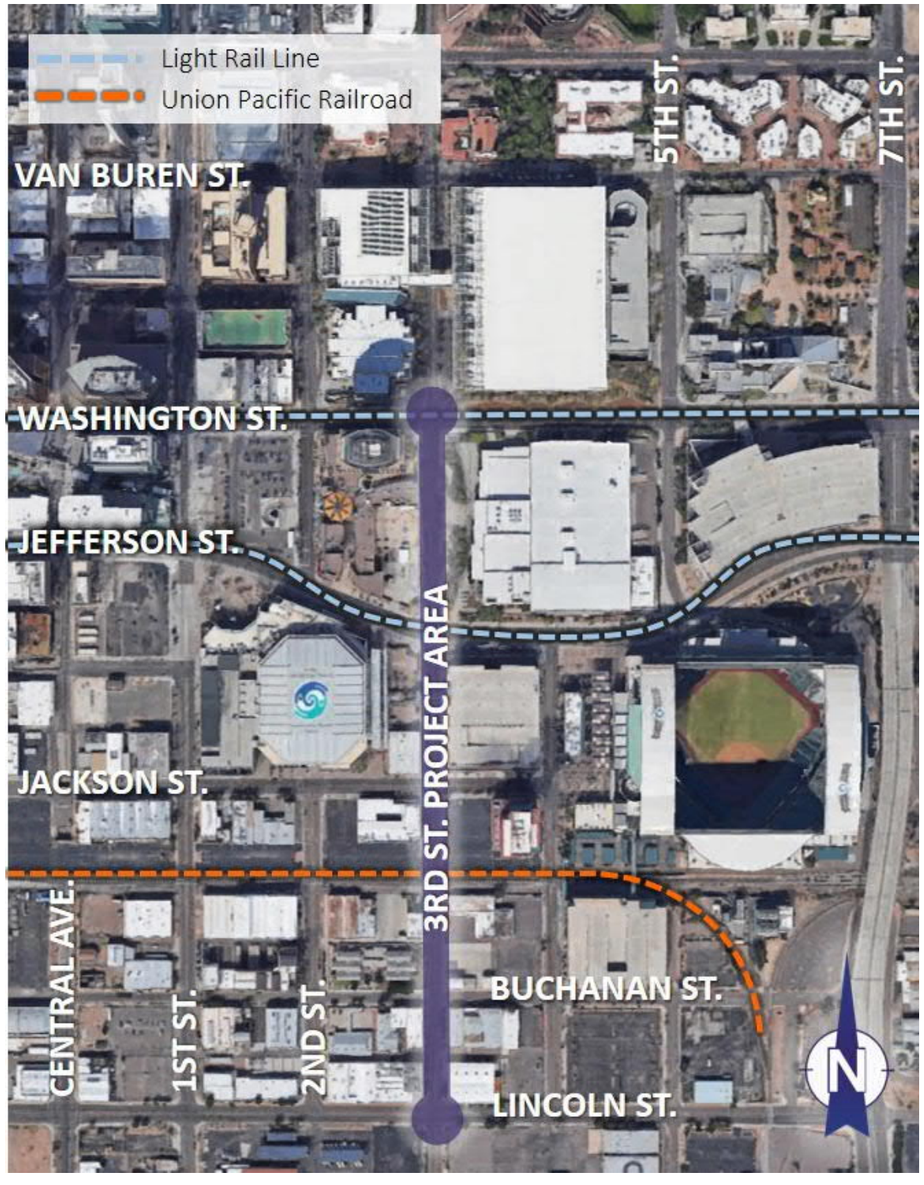


Figure 1: Project Study Area

In addition to the Downtown Transportation Study, there are other initiatives and studies by the City geared towards identifying improvements in downtown Phoenix that directly or indirectly impact the study area. These include Reinvent PHX whose primary goal is to develop walkable, opportunity-rich communities along the light rail system. The study area falls within the Phoenix Zoning Ordinance, Downtown Code, Business Core which is current through Ordinance G-6529 passes December 2018.

The City of Phoenix established a goal to achieve "Platinum-Level Bicycle Friendly Community" status within the next 20 years by improving existing bicycle facilities including bicycle lanes, bicycle routes, and shared use paths. The 2014 City of Phoenix Comprehensive Bicycle Master Plan (BMP) establishes the following goals:

- Increase bicycle mode share.
- Enhance comfort and safety for all users.
- Build out the existing bicycle network and improve the connections with adjacent agencies.
- Provide connections to bikeways, shared use paths, and trails within Phoenix and adjoining communities to provide longer-distance recreation and commuting opportunities.
- Improve mobility to connect neighborhoods, access to downtown Phoenix, and connections to schools, parks, shopping, work and other activity centers.

In another initiative, the City has developed Phoenix Transportation 2050, a 35-year plan for investments in bus service, light rail construction, bicycle infrastructure, and street improvements. Funding for Transportation 2050 is being generated by a 0.7 percent sales tax approved by voters which became effective Jan. 1, 2016. Transportation 2050 includes enhancements in bicycle infrastructure with plans for phased project implementation to complete the bicycle network.

The City of Phoenix has laid out future bicycle infrastructure plans in the BMP. The City of Phoenix expanded upon planned bike improvements for the immediate future with a complimenting document, City of Phoenix: Five-Year Bicycle Program-Shifting Gears. This document is a compilation of work that will be initiated by the City of Phoenix in the next five-years to progress the City to meet the goals detailed in the BMP. In this document, 3rd Street is intended to have bike lanes throughout the corridor by 2022.

Based on an analysis of existing conditions, public comment, and a latent demand analysis, the BMP prioritized 3rd Street from Indian School Road to Buckeye Road as a Tier 1 Corridor that was ranked as #1 in the list of 39 priority bicycle facility improvement projects. **Table 1** shows a list of planning documents which will be reviewed in conjunction with this study.

Table 1: Summary of Planning Documents Reviewed

Report or Study	Agency	Date
Downtown Code: Business Core, Warehouse	City of Phoenix	2018
Five-Year Bicycle Program-Shifting Gears	City of Phoenix	2017
Phoenix Transportation 2050	City of Phoenix	2015
Reinvent PHX	City of Phoenix	2015
Plan PHX	City of Phoenix	2015
Walkable Urban Code	City of Phoenix	2015
Comprehensive Downtown Transportation Study	City of Phoenix	2014
Comprehensive Bicycle Master Plan	City of Phoenix	2014
Complete Street Policy	City of Phoenix	2014
2035 Regional Transportation Plan	MAG	2014
Complete Street Guide	MAG	2011
Tree and Shade Master Plan	City of Phoenix	2010
Downtown Events Management Plan (Sunburst Plan)	City of Phoenix	1999

2.1 Existing Physical Conditions

3rd Street, between Lincoln Street and Washington Street, is a one-way facility serving southbound motor vehicle traffic with three vehicular travel lanes and on-street parking between Washington Street and Buchanan Street. South of Buchanan Street, 3rd Street currently provides two through lanes with parking on both the east and west sides of the street. The corridor provides a multitude of features for roadway users that vary between the different segments of the corridor. **Table 2** provides a summary of existing roadway features broken down by segment.

The project corridor has three signalized intersections, one all-way stop controlled intersection, one minor street stop-controlled intersection, and a flashing-light, automatic gate controlled at-grade railroad crossing as discussed in the following sections.

3RD STREET AND WASHINGTON STREET

The 3rd Street/Washington Street intersection is controlled by a traffic signal. Washington Street is one-way in the westbound direction and 3rd Street is one-way in the southbound direction. At the intersection, the Valley Metro Light Rail runs along the north side of Washington Street passing through the intersection in the westbound direction. There are no bike lanes on either 3rd Street or Washington Street. There are sidewalks along both sides of both streets. Marked crosswalks exist on all four legs of the intersection. Dual wheelchair ramps with truncated dome tactile strips exist on each corner of the intersection and there are pedestrian pushbuttons serving the north/south movements while the east/west pedestrian phase runs in recall mode.

Table 2: Summary of Existing Roadway Features

Summary of Existing Roadway Features					
Segment	**Washington St. to Jefferson St.**	**Jefferson St. to Jackson St.**	**Jackson St. to Union Pacific Railroad**	**Union Pacific Railroad to Buchanan St.**	**Buchanan St. to Lincoln St.**
Lane/Width	3 lanes @ 11' width	3 lanes @ 11' width	3 lanes @ 11' width	3 lanes transition to 2 lanes	2 lanes
Sidewalk Width	Sidewalk is 10' on the west side, 11'-16' on the east side	Sidewalk is 14' on the west side, 8'-14' on the east side	Sidewalk is 6' or greater on the west side, and 5'or greater on east side	Sidewalk is 6' on the west side, and 5' on the east side	Sidewalk is 13.5' on the west side (not traditional concrete, ~2x2ft squares), 6-15' on the east side.
Sidewalk Condition	Good	Good	Adequate	Adequate (west side). Adequate but discontinuous (east side).	Adequate
Shade	No shade on the west side, minimal shade on the east side	Minimal shade on both sides	Partial shade the west side, no shade on the east side	Northwest side shaded, no shade on east side or southwest.	Minimal shade on the west side, no shade on the east side
Buffer	No buffer on the west side, Landscape buffer on the east side	No buffer on the west side, Some landscaping buffer on the east side	Some landscape buffer on the west side, No buffer on the east side	Landscaping buffer on the west side, No buffer on the east side	Non-landscaped buffer on the east side, No buffer on the southeast and west side
Continuous Sidewalk	Yes on both sides of 3rd Street	Yes on both sides of 3rd Street	Yes on both sides of 3rd Street	No. Sidewalks end at railroad right of way.	Yes on both sides of 3rd Street
Pedestrian Ramps	Appears to meet ADA ramp requirements on all corners	Appears to meet ADA ramp requirements on all corners	Ramps present at all corners, appears to meet ADA ramp requirements on SW corner	No ramps at railroad crossing. Ramps at SW and NW corners of Buchanan St do not appear to meet ADA ramp requirements	Appears to meet ADA ramp requirements: -NE, SE and SW corner of Lincoln St. & 3rd St. Ramps present at all other corners
Truncated Domes at Ramps	Located on all ramps	Located on all ramps	Located on the SW corner ramp	No ramps at railroad crossing	Located on NE, SE and SW corner of Lincoln St. & 3rd St.
Lighting	Overhead and pedestrian lighting present	Overhead lighting present	Two power pole mounted luminaires face away from 3rd Street, no other overhead lighting present.	Minimal overhead lighting present	One light attached to an electric pole on the west side, no other overhead lighting present.
On Street Parking	Parking along the west side	Minimal parking available	Parking along the west side	Parking along the west and southeast side.	Parking along both sides
Pavement Condition	Good	Good	Fair	Fair	Fair

Signs restrict right turns on red in both the southbound and westbound directions. The southbound approach consists of a through lane and a shared through/right-turn lane. The westbound approach consists of three through lanes and a dedicated right-turn lane.

3RD STREET AND JEFFERSON STREET

The 3rd Street/Jefferson Street intersection is controlled by a traffic signal. Jefferson Street is one-way in the eastbound direction. 3rd Street continues as one-way in the southbound direction. At the intersection, the Valley Metro Light Rail runs along the south side of Jefferson Street passing through the intersection in the eastbound direction. There are no bike lanes on either street. There are sidewalks along both sides of both streets. Marked crosswalks exist on all four legs of the intersection. Dual wheelchair ramps with truncated dome tactile strips exist on each corner of the intersection with two pedestrian pushbuttons on each corner serving all four directions.

There are signs restricting right turns on red in the eastbound direction. The eastbound approach consists of four through lanes and a dedicated right-turn lane. The southbound approach consists of a left-turn lane, a shared left-turn/through lane and two through lanes.

3RD STREET AND JACKSON STREET

The 3rd Street/Jackson Street intersection is controlled by an all-way stop. 3rd Street is one-way serving southbound traffic while Jackson Street serves both eastbound and westbound vehicles. There are no bike lanes on either 3rd Street or Jackson Street; however, there are sidewalk facilities along both sides of each roadway. Marked crosswalks exist on all legs of the intersection. Single wheelchair ramps exist on each corner of the intersection. The southwest corner ramp has a truncated dome tactile surface. The southbound approach consists of a shared left-turn/through lane, a through lane, and a shared through/right-turn lane. The eastbound and westbound approaches both consist of one shared left-turn/through/right-turn lane.

3RD STREET AND UNION PACIFIC RAILROAD (UPRR)

The UPRR crosses 3rd Street between Jackson Street and Buchanan Street. This at-grade railroad crossing is controlled by flashing lights and automatic gates. The gates are only located north of the tracks because 3rd Street which is a one-way street in the southbound direction. Currently this crossing is not established as a Quiet Zone by the Federal Railroad Administration (FRA). There are sidewalks on both sides of the street north of the railroad tracks but is discontinuous on the south side.

3RD STREET AND BUCHANAN STREET

The 3rd Street/Buchanan Street intersection is controlled by a two-way stop with Buchanan Street stopping for 3rd Street. 3rd Street remains one-way in the southbound direction. There are no bike lanes on either street. There are sidewalks along both sides of both streets. Marked crosswalks exist on the north and west legs of the intersection. Single wheelchair ramps without truncated dome tactile strips are on each corner of the intersection. The southbound approach consists of a shared through/left-turn lane and a shared through/right-turn lane. The eastbound and westbound approaches both consist of one shared left turn/through/right-turn lane.

3RD STREET AND LINCOLN STREET

The 3rd Street/Lincoln Street intersection is controlled by a traffic signal. 3rd Street is one-way north of Lincoln Street and two-way south of Lincoln Street. There are no bike lanes on either street. There are sidewalks along both sides of both 3rd Street and Lincoln Street. Marked crosswalks exist on all four legs of the intersection. Single wheelchair ramps with truncated dome tactile strips are on each corner of the intersection with the exception of the northwest corner. The ramp on the northwest corner has grooved pavement rather than a truncated dome surface. The northbound approach consists of a left-turn lane and a right-turn lane. The southbound approach consists of a left-turn lane and a shared through/right-turn lane. The eastbound approach consists of a through lane and a shared through/right-turn lane while the westbound approach consists of a left-turn lane and two through lanes.

Table 3 below shows the posted speed limits within the study area.

Table 3: Study Area Speed Limits

On Road	Location	Posted Speed Limit (mph)
3rd Street	Between Washington Street and Jackson Street	30
3rd Street	Between Jackson Street and Lincoln Street	25
Washington Street	At 3rd Street	25
Jefferson Street	At 3rd Street	25
Jackson Street	At 3rd Street	25
Buchanan Street	At 3rd Street	25
Lincoln Street	At 3rd Street	35

The number of lanes on 3rd Street varies within the project limits. Three through lanes are maintained on 3rd Street with on-street parking between Washington Street and Buchanan Street. South of Buchanan Street, 3rd Street transitions to two lanes with parking on both the east and west sides of the street. **Figure 2** shows the number of lanes within the 3rd Street corridor study area. The existing lane configurations and traffic control as described above are shown in **Figure 3.**

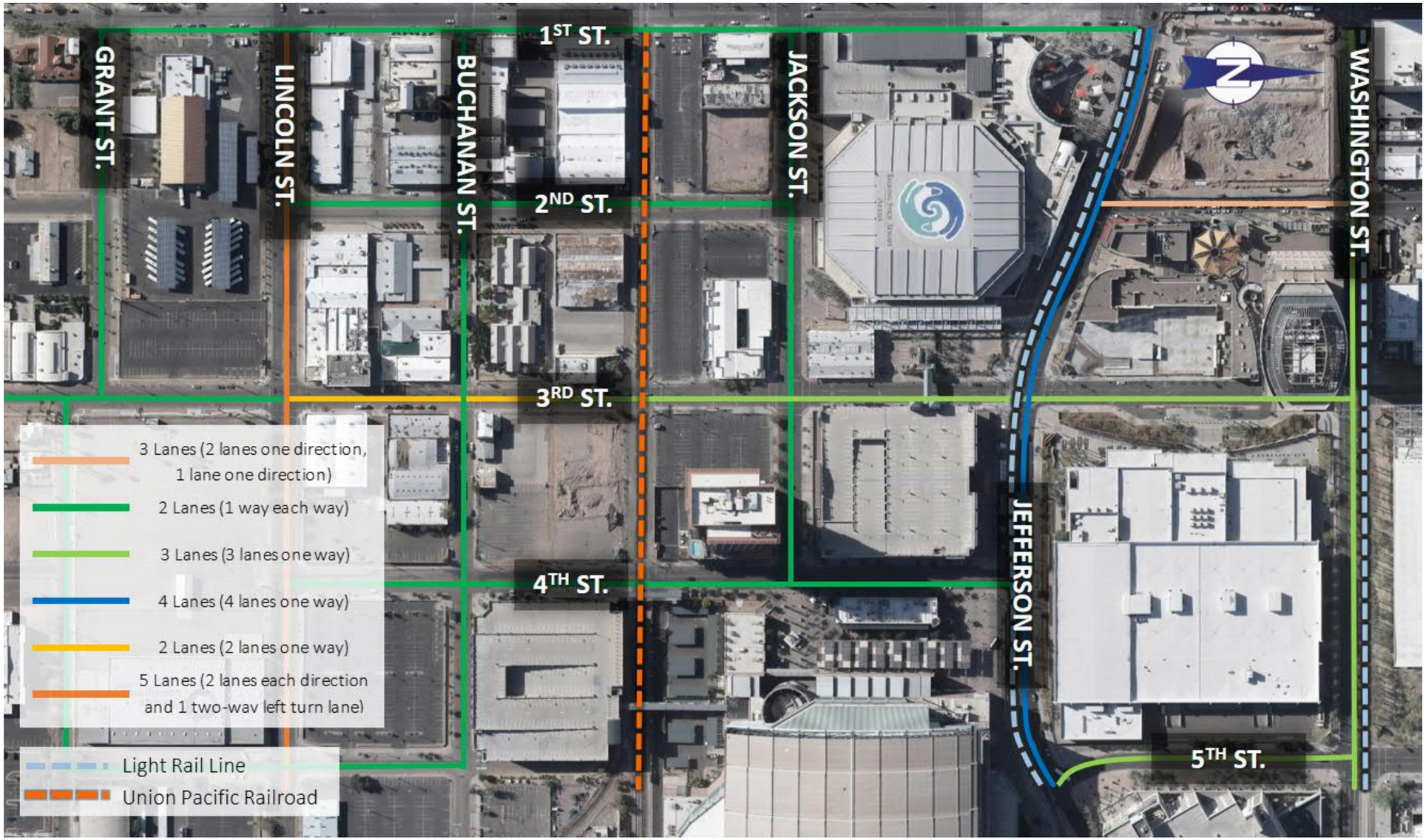


Figure 2: Study Area Roadway Cross-Sections

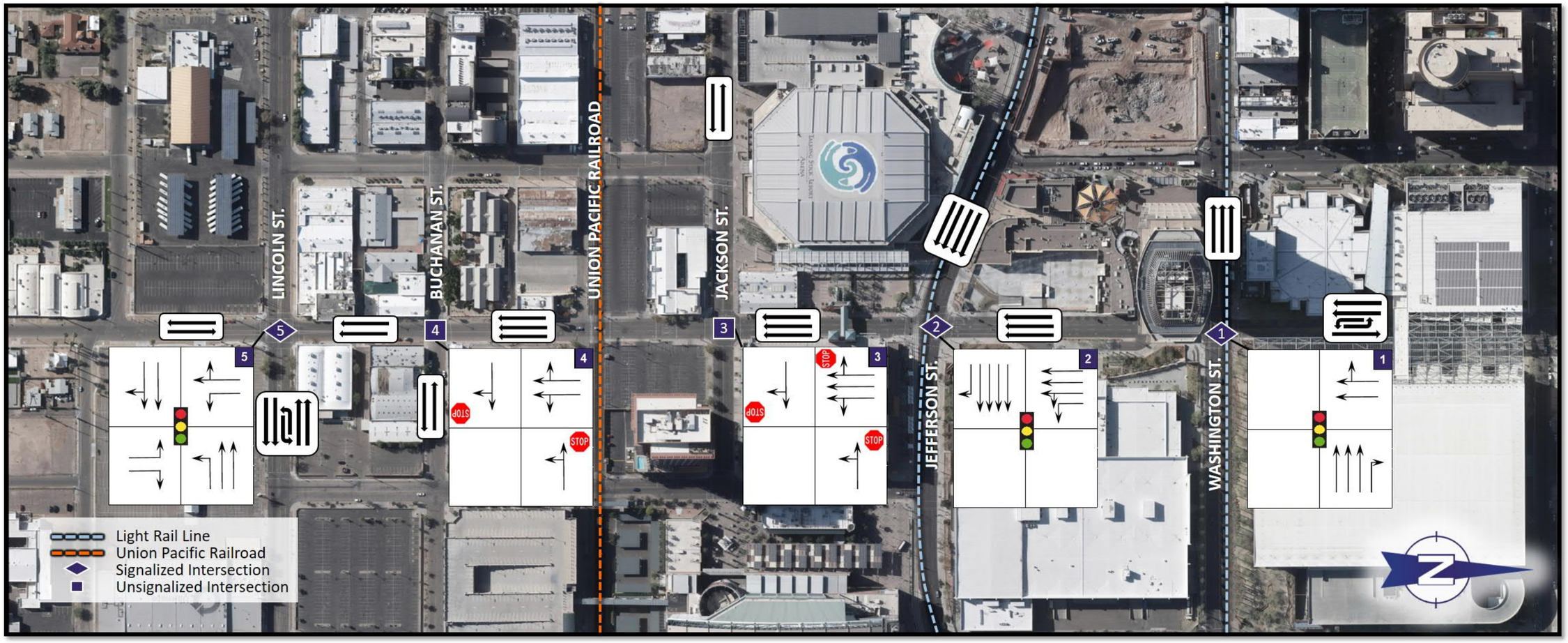


Figure 3: Existing Lane Configurations and Traffic Control

The Phoenix BMP prioritized 3rd Street from Indian School Road to Buckeye Road as a Tier 1 Corridor for bicycle facility improvement. This project, in conjunction with the 3rd Street Promenade which will be adding bike lanes between Indian School Road and Roosevelt Street, will begin to fill the existing gap in north/south bike routes in downtown Phoenix. **Figure 4** depicts the existing bicycle network in this area with the project corridor shown in grey.

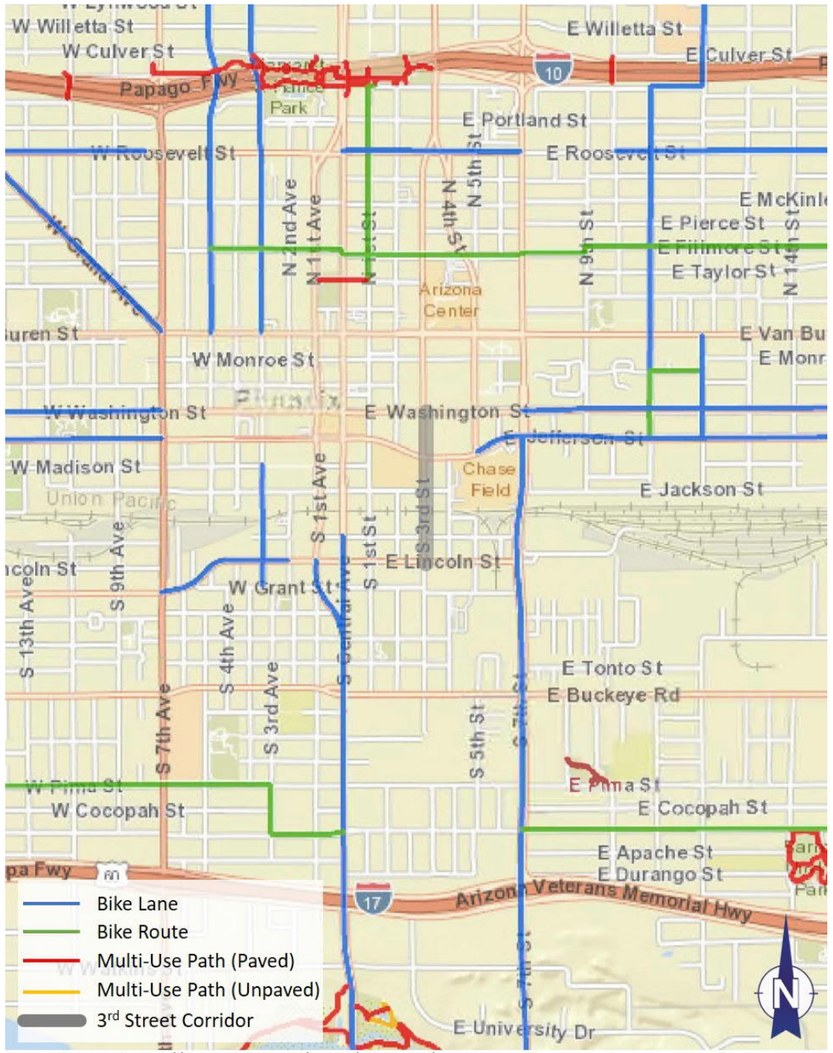


Image Source: https://geo.azmag.gov/maps/bikemap/

Figure 4: Existing Bicycle Network in Phoenix

2.2 Existing Transit

The 3rd Street corridor is served directly by Valley Metro Light Rail stations on Washington Street and Jefferson Street. Indirectly the project is served by Valley Metro bus service on Central Avenue, 7th Street, Washington Street and Jefferson Street.

Valley Metro Light Rail provides a connection to the east toward Tempe and Mesa along Jefferson Street and a connection to the northwest through Phoenix to 19th Avenue/Dunlap Avenue. The light rail operates from approximately 4:00 am to 1:00 am on weekdays and Sundays with extended (overnight) hours on Friday and Saturday evenings according to the Valley Metro Light Rail schedule. On weekdays, the light rail arrives every 12 minutes from 7:00 am to 6:30 pm. On weekends, the light rail trains arrive every 15 minutes from 6:00 am to 7:30 pm. In all other hours, the train arrives every 20 minutes. **Figure 5** shows the Valley Metro Light Rail routes as well as nearby bus routes.

Bicyclists and pedestrians are complementary to transit. Connections to transit stops are important for the usefulness of a transit network and for users to be able to access transit stops by bicycle as well as on foot. Transit users should feel that they have a safe and convenient route to and from transit stops. With this project adding bicycle lanes and improving sidewalks on 3rd Street, connectivity will improve for all roadway users.

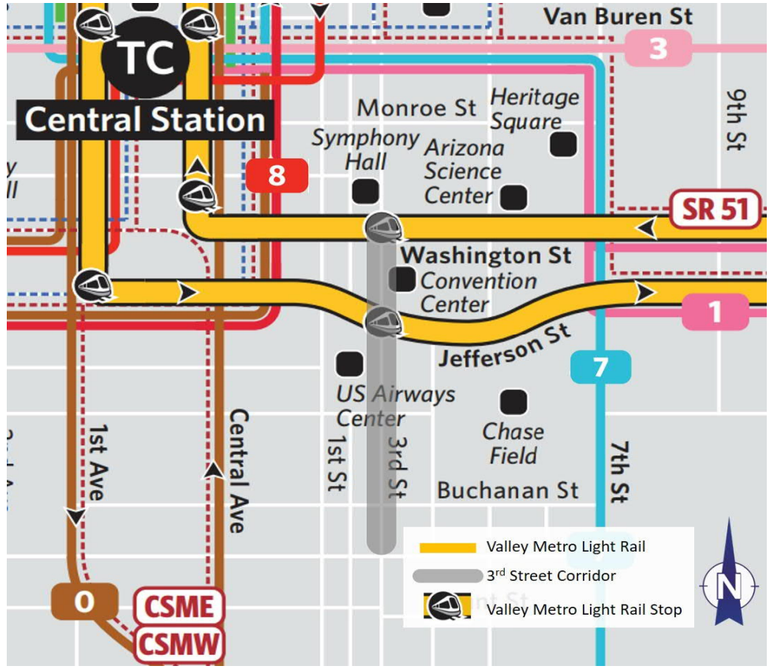


Figure 5: Existing Transit Map

2.3 Regional Plans

The 2011 Maricopa Associations of Government (MAG) Complete Streets Guide identifies steps and recommendations for implementing Complete Streets in the MAG region. This guide describes strategies to implement Complete Streets projects relevant to the 3rd Street project and identifies separated bike lanes as a potential best practice to provide a "safe place" for bicyclists. The Complete Streets Guide references the MAG Pedestrian Policies and Design Guidelines, which detail recommended minimum standards for 'safe,' 'comfortable,' and 'destination' facilities, such as sidewalk width and shade coverage.

MAG has also developed standards and guidelines for its regional off-street network (Valley Path), including graphic standards, MUTCD drawings, and wayfinding guidelines. The wayfinding guidelines address topics such as destination priorities, on/off-street transitions and path-roadway intersections. These will not apply to this corridor.

MAG is currently developing a regional Active Transportation Plan that will serve as a guide for improving, expanding and connecting the MAG region's bicycle and pedestrian network. It will identify opportunities for routes and investments that will place an emphasis on bicycle and pedestrian connections, bicycle and pedestrian connections to transit, quality of life factors and safety that will change the culture of the Valley and enhance the transportation infrastructure. 3rd Street may be identified as a regional corridor as part of this plan.

2.4 National Best Practices

Best practices on bicycle facility design have evolved and expanded since the most recent local and regional planning documents were adopted by MAG. National research indicates that separated bicycle facilities increase bicyclist comfort and confidence, create a designated separation between cyclists and motor vehicles and improve predictability and interaction between bicyclists and motor vehicles. National best practice for bicycle facilities is emerging with FHWA, NACTO, and AASHTO providing written guidance and recommendations for conventional or buffered bicycle lanes, two one-way separated bicycle lanes, a two-way separated cycle track and side paths.

Bicycle lanes are most effective for streets with greater than 3,000 ADT, streets with a posted speed equal to or greater than 25 mph, or streets with a high transit vehicle volume (NACTO). According to FHWA, designers should consider issues such as bicycle volumes, connectivity and access to destinations, and potential conflicts. National best practices also recommend that the selected bicycle lane design address other contextual issues such as interaction with transit and conflicts at intersections and driveways.

2.5 Right-of-Way

The existing 3rd Street right-of-way from Washington Street to Lincoln Street is 40 feet on each side of the road centerline for a total of 80 feet. The street right-of-way encompasses the entire road from curb to curb and including the sidewalks.

2.6 Utilities

The existing utilities along the 3rd Street corridor within the study area include Arizona Public Service (APS) overhead power lines and underground electric conduit duct banks, Southwest Gas, Swissport Fuel, Valley Metro, Century Link, City of Phoenix facilities, COX Communications, Level 3 Communications, Verizon Wireless, Zayo Group, and Northwind Phoenix. These utilities are summarized in **Table 4**.

Table 4: Existing Utilities

Utility	Description
Arizona Public Service	• Underground power on both sides of 3rd Street from Washington to Jackson. • Underground duct bank in the middle of 3rd Street from Washington to Buchanan. • Overhead power from just north of the railroad tracks to south of Buchanan.
Southwest Gas	• 4" gas line at 3rd Street and Washington. • 2" gas line at 3rd Street and Jackson. • 8" gas line at 3rd Street and Buchanan. • 2" gas line at 3rd Street and Lincoln.
Swissport Fuel	• 10" jet fuel pipeline at 3rd Street and UPRR.
Valley Metro	• Light rail trunk line at 3rd Street and Washington. • Light rail truck line at 3rd Street and Jefferson.
Century Link	• Underground telecommunication lines on east side of 3rd Street from Jackson to Lincoln.
Verizon Wireless	• Underground cable at 3rd Street and Washington. • Underground cables at 3rd Street and UPRR.
COX Communications	• Underground fiber optic cables from Washington to Lincoln.
Zayo Group	• Underground cable at 3rd Street and Washington. • Underground cable in 3rd Street from Washington to UPRR.
Level 3 Communications	• Underground fiber optic lines in 3rd Street from Washington to Lincoln
Northwind Phoenix	• Two 20" chilled water pipelines in 3rd street from Jefferson to Jackson
City of Phoenix Communication	• Underground infrastructure at 3rd Street and Washington. • Underground infrastructure at 3rd Street and Jefferson.
City of Phoenix Water & Sewer	• 12" waterline in 3rd Street from Washington to Lincoln with laterals. • Multiple sewer crossings of 3rd Street within project limits.

3.0 EXISTING TRAFFIC ANALYSIS

3.1 Existing Traffic

Existing traffic counts were obtained as part of this study. Field Data Services of Arizona (FDS) utilized a proprietary video collection method, for the AM (7:00 am to 9:00 am) and PM (4:00 pm to 6:00 pm) peak hours on a typical weekday. In addition, turning movement counts were collected for during a "special event" evening (4:00 pm to 10:00 pm) in which an activity was occurring at the Talking Stick Resort Arena. Turning movement counts and approach counts were provided in 15-minute intervals and included pedestrian, bicycle and vehicular movements at the intersections. The following intersections were counted as shown in **Figure 6** for a typical weekday AM/PM peak hour and **Figure 7** for a special event peak hour:

- 3rd Street/Washington Street
- 3rd Street/Jefferson Street
- 3rd Street/Jackson Street
- 3rd Street/Buchanan Street
- 3rd Street/Lincoln Street

Table 5 shows the total peak hour pedestrian and bicycle crossings at the primary project intersections during the AM, PM and special event peak hours.

Table 5: 2018 Existing Pedestrian and Bicycle Peak Hour Crossings

Intersection	Weekday Pedestrian Crossings			Weekday Bicycle Crossings		
	AM	PM	Special	AM	PM	Special
3rd Street/Lincoln Street	27	88	156	2	1	5
3rd Street/Buchanan Street	23	92	123	2	2	1
3rd Street/Jackson Street	43	564	1342	5	16	12
3rd Street/Jefferson Street	137	492	920	5	20	16
3rd Street/Washington Street	530	184	225	9	4	11

Twenty-four-hour traffic counts were recorded between Monday, February 19, 2018 and Wednesday, February 21, 2018. These dates were specifically chosen to align with a day that had a special event at Talking Stick Resort Arena and a "typical" weekday. The traffic counts were conducted in February, which is typically considered one of the busier traffic months for the metropolitan Phoenix area.

Table 6 shows the existing three-day average daily traffic volumes for various segments within the project area as recorded on a typical weekday. Counts were taken on 4th Street, 1st Street and Jackson Street to obtain a sense of potential northbound traffic if 3rd Street is opened to two-way traffic.

Table 6: 2018 Existing Daily Traffic Volumes

Roadway Segment			2018 Existing Daily Traffic
	From	To	
3rd Street	Lincoln Street	Grant Street	900
3rd Street	Buchanan Street	Lincoln Street	1,700
3rd Street	Jackson Street	Buchanan Street	1,400
3rd Street	Jefferson Street	Jackson Street	2,000
3rd Street	Washington Street	Jefferson Street	2,600
3rd Street	Monroe Street	Washington Street	3,200
1st Street	Jackson Street	Buchanan Street	2,500
4th Street	Buchanan Street	Lincoln Street	2,700
4th Street	Jefferson Street	Jackson Street	1,400
Jackson Street	2nd Street	3rd Street	1,100

3.2 Existing Traffic Analysis Methodology

Level of service (LOS) is a way to quantitatively measure the functional ability of a transportation system to transport vehicles through a network. The LOS scale ranges from LOS A to LOS F, LOS A being ideal conditions and LOS F indicating high congestion. LOS at intersections is based on average delay as defined by criteria set forth in the Highway Capacity Manual.

Table 7 below provides the LOS criteria for unsignalized and signalized intersections. **Figure 8** depicts the LOS analysis results for the primary project intersections was prepared for the weekday AM and PM peak hour. **Figure 9** depicts the LOS analysis results for the peak hour of a special event. Each analysis utilized Synchro 10 software. The result of the analysis shows that all movements are operating at adequate LOS D or better.

Table 7: Level of Service Criteria for Intersections

Level-of-Service	Average Delay (seconds per vehicle)	
	Unsignalized	Signalized
A	≤ 10	≤ 10
B	> 10 to 15	> 10 to 20
C	> 15 to 25	> 20 to 35
D	> 25 to 35	> 35 to 55
E	> 35 to 50	> 55 to 80
F	> 50	> 80

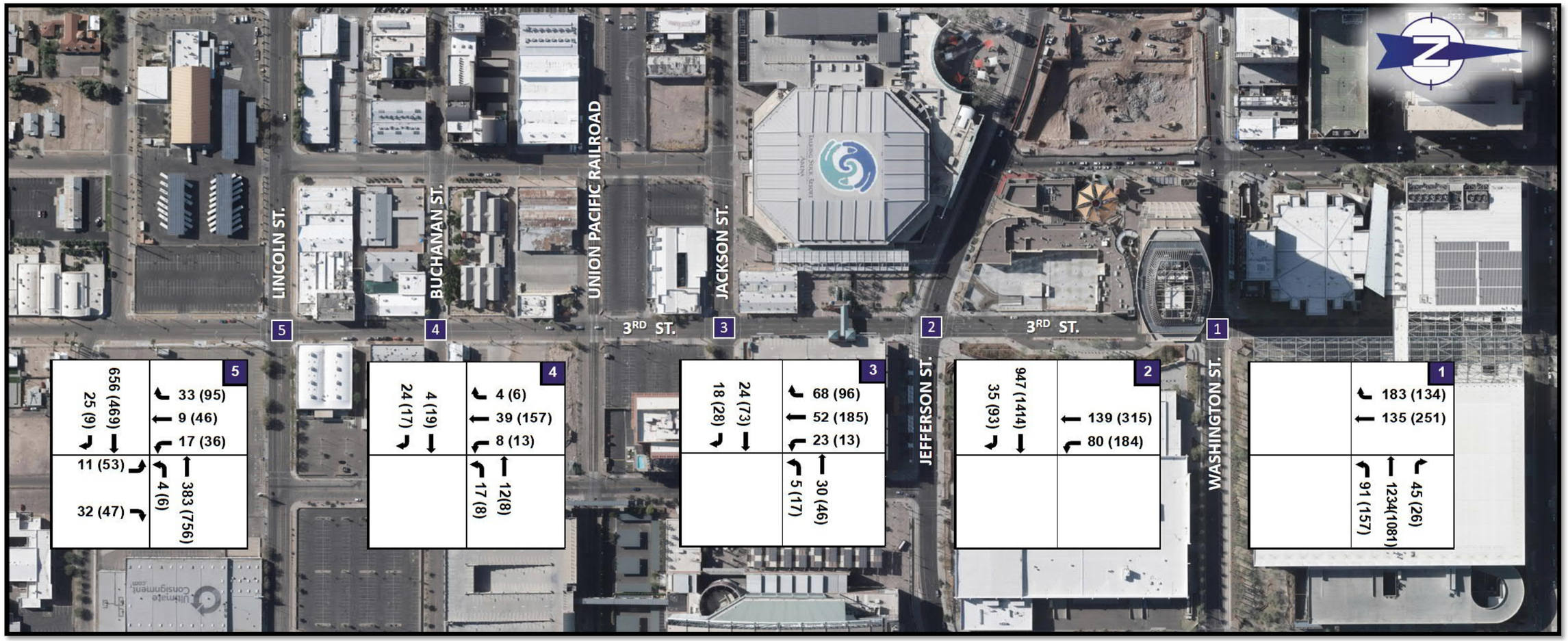


Figure 6: Existing 2018 Weekday Peak Hour Traffic Volumes

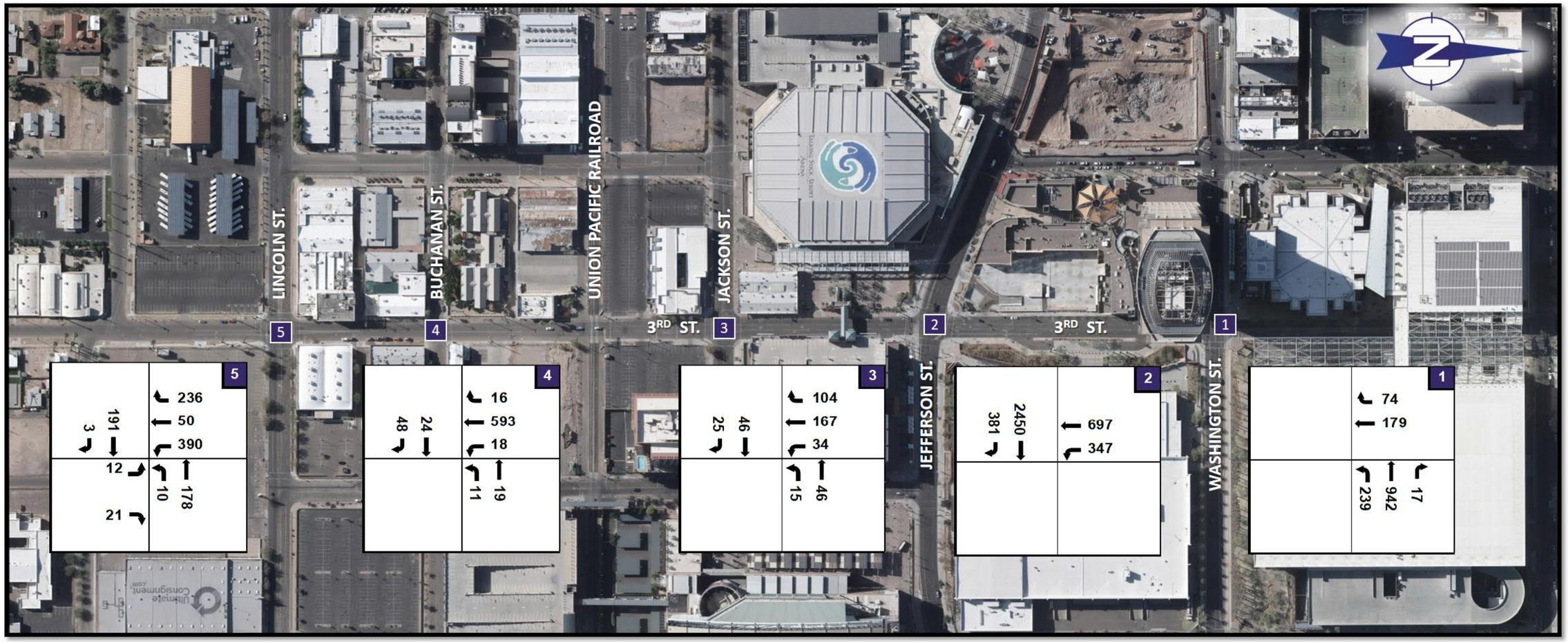


Figure 7: Existing 2018 Special Event Peak Hour Traffic Volumes

Figure 8: Existing 2018 Level of Service

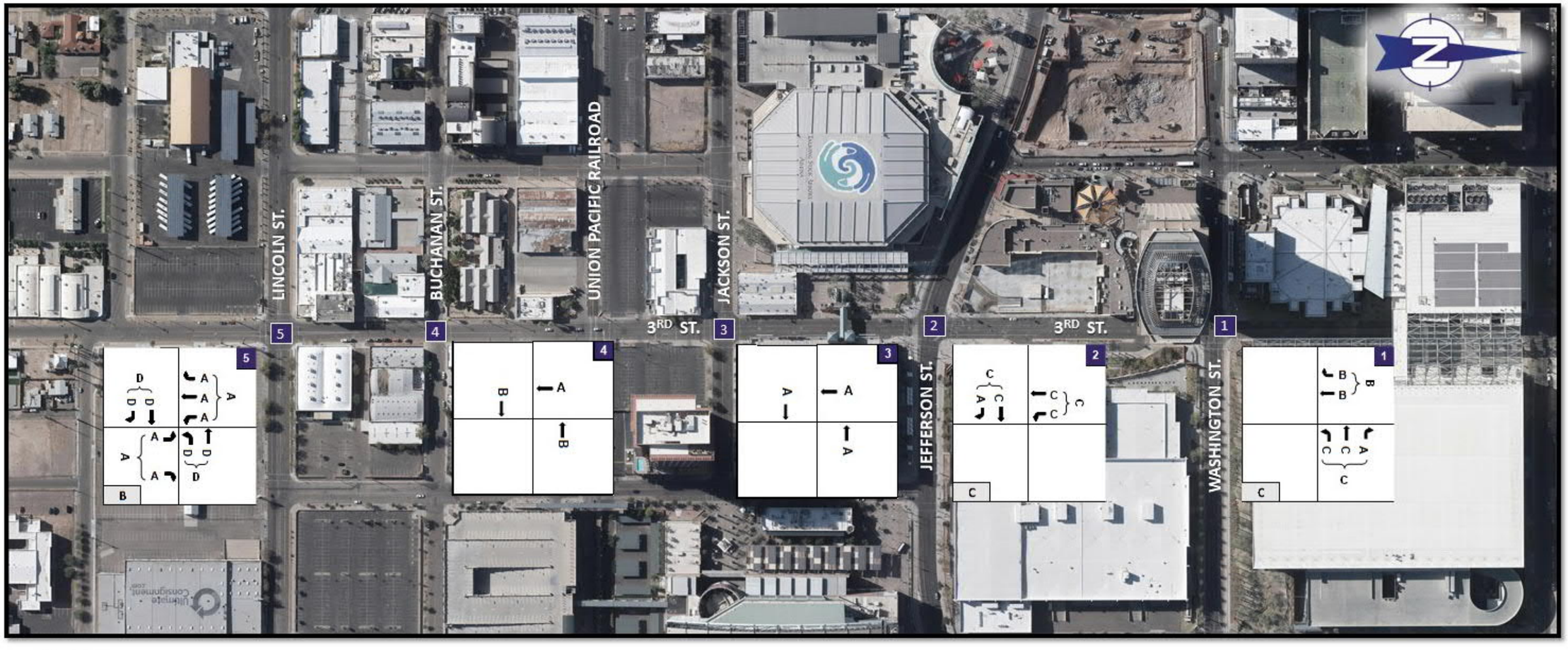


Figure 9: Existing 2018 Special Event Level of Service

4.0 STAKEHOLDER ENGAGEMENT

The study team held meetings with major stakeholders to examine the issues, concerns, and provide a forum for discussing potential solutions. Specifically, inputs were sought from major stakeholders along the 3rd Street corridor which include:

- Phoenix Convention Center
- Talking Stick Arena
- Chase Field Ballpark
- Sports Organizations – Phoenix Suns and Diamondbacks
- Warehouse District
- Phoenix Police Department – traffic control during major events (Sunburst Plan)

The major stakeholders along the corridor provided input regarding streetscape elements and operations that were important to their businesses. The meetings with the stakeholders provided the study team with the following understanding of specific concerns relating to daily commuters, special event traffic, existing railroad crossing, pedestrian and bicycle access, planned development, streetscape, and issues associated with special event-related conditions.

- School field trips occur weekly during fall, winter, and spring months that require parking for two rows of school buses adjacent to the sidewalk on the west side of 3rd Street from Washington Street to Jefferson Street. One southbound travel lane remains open to traffic. It is imperative to maintain pavement width equal to three lanes with flexible use of the street.
- Access to the existing Convention Center pull-out on the east side of 3rd Street between Washington Street and Jefferson Street must be maintained for southbound traffic. The direction of flow for the pull out will be reversed if a northbound lane is installed. Re-development of the Convention Center in this area will likely occur in the near future.
- Re-development of the Collier Center on the west side of 3rd Street between Washington Street and Jefferson Street will maintain the existing access on 3rd Street.
- The existing ADA-accessible passenger loading and drop-off area south of Jefferson Street on the west side of 3rd Street is a streetscape element that must be retained for operations and mobility. It is acceptable for the location to be relocated as long as it remains between Jefferson Street and Jackson Street and is ADA-accessible.
- The Jefferson Street Garage is a 1,450 space multi-level garage located between Jefferson Street and Jackson Street, and 3rd Street and 4th Street. The main entrance is located on 3rd Street just south of Jefferson Street. Southbound vehicle throughput at the intersection of 3rd Street and Jefferson Street is important for special event ingress to the Jefferson Street Garage.
- It is imperative for special event traffic to be able to execute an egress flushing pattern from the Jefferson Street garage with minimal conflicts with pedestrians and bicyclists. Currently, pedestrians and bicyclists use the sidewalk and street along the west side of 3rd Street during special event egress.
- To accommodate various traffic conditions for more than 200 events each year, two southbound lanes be maintained, at a minimum, within the entire corridor with the desire for pavement width equal to three lanes between the Jefferson Street Garage and Lincoln Street to have the capacity during egress in the event the UPRR crossing is blocked by a train.
- The warehouse district is thriving and new office spaces are anticipated to bring thousands of new jobs to the area. Existing businesses rely on short-term on-street parking along 3rd Street to meet parking demand. It is important that short-term on-street parking continues to be available along 3rd Street between Jackson Street and Lincoln Street.
- The Ballpark Apartments is under development on the northeast corner of 3rd Street and Buchanan Street. The preliminary site plan for the Ballpark Apartments was approved by the City with a northbound lane on 3rd Street to access to the development.
- A high-comfort bicycle facility is critical for safe and healthy mobility between the Warehouse District and Downtown Phoenix. Design of 3rd Street pavement markings and the bicycle facility should reflect innovative and contemporary urban design guidance provided by NACTO and other national resources.

5.0 ALTERNATIVES DEVELOPMENT AND EVALUATION

5.1 No Build

The No Build alternative would not result in any improvements. This alternative will not meet the project goal and objectives identified in the City of Phoenix Comprehensive Bicycle Plan and Downtown Phoenix Comprehensive Transportation Plan. Keeping 3rd Street in its existing condition would also not serve the re-development and growth of the area.

5.2 Alternative 1

This alternative will convert one southbound lane to northbound from Lincoln Street to Jackson Street as shown in Appendix A. This northbound lane will provide access to the future Ballpark Apartments just south of the Union Pacific Railroad tracks. The preliminary site plan for the Ballpark Apartments was approved by the City with a northbound lane on 3rd Street to access to the development.

In the southbound direction, three lanes will continue south from Washington Street to Jefferson Street. At the Jefferson Street intersection, two lanes will continue south through the intersection. The third lane will become a left-turn only lane onto Jefferson Street.

South of Jefferson Street, two lanes will continue southbound to Lincoln Street with one northbound lane from Lincoln Street to Jackson Street as noted above.

An 11-foot two-way raised cycle track will be constructed on the west side from Lincoln Street to Washington Street. Raised cycle tracks may be at the level of the adjacent sidewalk, or set at an

intermediate level between the roadway and sidewalk to segregate the cycle track from the pedestrian area. In this alternative, the existing sidewalk will be widened to accommodate the cycle track.

A total of 12 existing parking spaces (3 metered and 9 unmetered) will be eliminated in order to accommodate the proposed improvements.

Pros

- Widens west sidewalk by 11 feet for pedestrian and bicycle mobility which is also benefits pedestrians during special events.
- Maintains on-street parking (35 metered, 10 un-metered).
- Maintains ADA drop-off area, south of Jefferson Street.
- Northbound access to Ballpark Apartments.
- Three southbound travel lanes in the vicinity of the Jefferson Street Garage.
- Maintains southbound circulation at the Convention Center pull-out.
- Creates large pedestrian storage areas at intersections for special event crowds and reduces pedestrian crossing distances.

Tradeoffs

- Two continuous southbound lanes instead of three.
- To have two southbound right turn lanes at Lincoln during special events, the second lane will be turning right from the lane marked as a left turn lane.
- Narrows street-level pavement area north of Jefferson Street which does not allow for flexibility to park two rows of school buses. This section could be converted to a protected cycle track at the street level.
- Narrows street-level pavement area south of Jefferson which does not allow for flexibility desired for special event traffic operations.
- Construction cost is anticipated to be higher due to the amount of new sidewalk, and curb and gutter being reconstructed.

Alternative 1 is not recommended due to lack of flexibility in how the street can be used, which is important to achieve the desired multi-faceted uses of the roadway.

5.3 Alternative 2

This alternative will convert one southbound lane to northbound from Lincoln Street to Jackson Street as shown in Appendix A. This northbound lane will provide access to the future Ballpark Apartments just south of the Union Pacific Railroad tracks. The preliminary site plan for the Ballpark Apartments was approved by the City with a northbound lane on 3rd Street to access to the development.

In the southbound direction, three lanes will continue south from Washington Street to Jackson Street. At the Jackson Street intersection, three lanes will continue south through the intersection and will taper to two southbound lanes approaching Buchanan Street. South of Buchanan Street, two lanes will continue southbound to Lincoln Street with one northbound lane from Lincoln Street to Jackson Street as noted above.

A 10-foot two-way cycle track will be constructed on the west side from Lincoln Street to Washington Street and will be at street level. Forms of separation could include a rail and post system, bollards, road armadillos, or parking stops. The existing sidewalk will remain with no reconstruction needed.

A total of 41 existing parking spaces (32 metered and 9 unmetered) will be eliminated in order to accommodate the proposed improvements.

Pros

- Provides a two-way cycle track on the west side for bicycle mobility without moving the existing curb.
- More options in the types of separation for the protected cycle track due to removal of on-street parking.
- Three continuous southbound lanes during special events with time-of-day use of the parking lane as a travel lane.
- Northbound access to Ballpark Apartments.
- Four southbound lanes in the vicinity of the Jefferson Street Garage
- Maintains southbound circulation at the Convention Center pull-out.
- Construction cost is anticipated to be lowest of the alternatives.

Tradeoffs

- 10-foot two-way cycle track is narrower than conventional guidance for minimum widths.
- Highest reduction of on-street parking. Only 6 metered and 10 un-metered will remain.
- Removes ADA drop-off area, south of Jefferson Street.
- If a northbound lane is extended north to Washington Street in the future, there will only be two continuous southbound lanes in lieu of three lanes.

Alternative 2 is not recommended it does not meet the minimum width criteria for the bicycle facility, the removal of on-street parking, and the removal of the ADA drop-off area south of Jefferson.

5.4 Alternative 3

This alternative has two phases. In Phase 1, one southbound lane will be converted to northbound from Lincoln Street to the future Ballpark Apartments just south of the Union Pacific Railroad tracks. A two-way cycle 11-foot track will be constructed on the west side from Lincoln Street to Washington Street and will be at street level. The existing sidewalk will remain with no reconstruction needed.

In the southbound direction, three lanes will continue south from Washington Street to Jackson Street. At the Jackson Street intersection, three lanes will continue south through the intersection and will taper to two southbound lanes approaching the Union Pacific Railroad. South of the railroad tracks, two lanes will continue southbound to Lincoln Street.

In Phase 2, the northbound lane will extend north from the Ballpark Apartments to Washington Street as shown in Appendix A. The reason for the 2nd phase is to defer improvements for the railroad crossings, which will require significant cost and coordination with Union Pacific Railroad. In the southbound direction, two lanes will continue south from Washington Street to Lincoln Street.

A total of 30 existing parking spaces (19 metered and 11 unmetered) will be eliminated in order to accommodate the proposed improvements. These are primarily parking spaces that currently exist on the east side of 3rd Street

Pros

- Provides a high comfort bicycle facility that meets conventional design guidance.
- Maintains some on-street parking (19 metered, 8 un-metered).
- Maintains ADA drop-off area north of Jackson Street located approximately two hundred feet south of its current location.
- Northbound access to Ballpark Apartments.
- Three continuous southbound lanes during special events with time-of-day use of the parking lane as a travel lane.
- Three southbound travel lanes in the vicinity of the Jefferson Street Garage.
- Northbound access to Washington Street which may align with future development desires and long-term circulation goals.
- Maintains southbound access to the Convention Center pull-out.
- Allows flexibility to park two rows of school buses and manage fluctuations in special event traffic.

Tradeoffs

- The operations of the Convention Center pull-out will be converted to the northbound direction.
- Construction cost is anticipated to be higher than Alternative 2 but lower than Alternative 1.

Alternative 3 achieves the greatest number of improvements and balances the needs and desires of major stakeholders and the community. Alternative 3 is recommended as the preferred alternative.

6.0 DESIGN GUIDELINES

The guidelines and criteria used in the development of this section are from the current editions of the AASHTO Guide for the Development of Bicycle Facilities, A Policy on Geometric Design for Highways and Streets (AASHTO), the Manual on Uniform Traffic Control Devices (MUTCD), FHWA Separated Bike Lane Planning and Design Guide, and the National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide. The guidelines for vehicle, bicycle, and pedestrian facilities are described in the following sections.

The design criteria applicable to this project include, but are not limited to:

1. City of Phoenix Street Planning and Design Guidelines, current edition
2. AASHTO A Policy on Geometric Design of Highways and Streets, current edition;
3. AASHTO Guide for the Development of Bicycle Facilities, 2012, Fourth Edition;
4. AASHTO Guide for the Development of Bicycle Facilities, 2018, Fifth Edition;
5. Manual on Uniform Traffic Control Devices (MUTCD), 2009;
6. Arizona Supplement to the 2009 MUTCD;
7. National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide, 2012;
8. FHWA Separated Bike Lane Planning and Design Guide, 2015;
9. City of Phoenix Traffic Barricade Manual, 2017;
10. City of Phoenix Standard Specifications and Details for Public Works Construction, Current Edition;
11. MAG Uniform Standard Specifications and Details for Public Works Construction, Current Edition;
12. ADA Design Guidelines, 2010;
13. Public Right-of-Way Accessibility Guidelines (PROWAG), 2012;

Design exceptions may be required for this project to implement green pavement markings and bicycle signal faces for bicycle facilities.

6.1 Roadway Facilities

Roadway Alignment and Cross Slopes

The existing roadway horizontal geometry, profile, and cross-slopes are anticipated to be maintained. No significant earthwork is anticipated for this project.

Pavement

Cool pavement sealcoating is a lighter alternative to asphalt, designed to reflect the sun's energy by 15 - 30% which cools surface temperatures by 10 - 15oF compared to traditional asphalt surfaces. Cool pavement sealcoating is being implemented through pilot programs in southern California to combat Urban Heat Island (UHI) effects. An UHI is when an urban area is warmer than surrounding rural areas. Generally, this is caused by a large amount of heat absorbing asphalt, which accounts for 35-40% of surface areas in large metropolitan areas. Additional benefits of cool pavement sealcoating, beyond the reduction of surface temperatures are: increased night-time illumination levels, reduced water runoff damage, and many environmental benefits such as an overall reduction in energy use and improved air quality.

Figure 10: Cool Pavement Application in Los Angeles

Cool pavement sealcoating is made of a polymer that is more energy intensive to produce than the standard seal, which is made of rock. As such, the upfront environmental impact of adding cool pavement is negligible compared to the negative impact of production. The environmental benefits of cool pavement increase over the lifecycle of the material. Asphalt pavement chip seals range in cost from $0.09 to $0.14 per square foot, while their cool pavement, reflective counterparts could cost up to $3.00 per square foot.

Traffic Signs

All existing traffic signs within the project limits will be reviewed during final design for compliance with the most current version of the MUTCD. It is anticipated that all existing traffic control signs will be replaced with new signs. The conversion of one-way to two-way traffic will require the removal of many "One-Way" and "Wrong Way" signs. All traffic signs will be located and installed to current City of Phoenix standards. With the change in traffic control from one-way and two-way traffic, existing wayfinding signage should be reviewed to determine its appropriateness. Existing wayfinding signage for pedestrians is expected to remain.

Speed Limit

The current posted speed limit of 30 MPH between Washington Street and Jackson Street and 25 MPH between Jackson Street and Lincoln Street. This appears to be appropriate for existing conditions and should remain the same with the proposed improvements.

Lighting

The recommended improvements include enhanced overhead roadway lighting, between Lincoln Street and Jackson Street, with upgrades to include LED equipment. In addition, new roadway lighting, south of Jackson Street should include facilities that illuminate the sidewalks and two-way cycle track. The north portion of the project currently has themed, decorative, light poles on both sides of the street and will remain. In the southern portion of the project, between Lincoln Street and Jackson Street, additional sidewalk and overhead lighting poles/fixtures with upgrades to include LED equipment are recommended where feasible on the east side of the street. In addition, new street lighting should include facilities that illuminate the sidewalks and two-way cycle track.

Properly designed street lights will improve driver's ability to detect and react to pedestrians and bicyclists during low light conditions. The new lighting will conform to the City's lighting requirements, with standard spacing, and requirements of the local power company (Arizona Public Service). The existing luminaires will be upgraded to LED within the corridor.

6.2 Vehicle Facilities

Vehicle Lanes

The width of vehicle travel lanes shall be a minimum of 10 feet wide. Left turn lanes shall be designed to accommodate the anticipated queue at each intersection, using a length of 25 feet for every vehicle in the queue as specified by AASHTO. A dedicated right-turn lane shall be provided when right-turn volumes exceed 150 vehicles per hour in the peak hour.

Pavement Markings

Pavement markings within the project limits will be reviewed during final design for compliance with the most current version of the MUTCD and City of Phoenix requirements. Long line pavement markings within the City of Phoenix are typically painted. With the proposed lighter shade of asphalt, black contrast tape may be needed in order to enhance visibility of the pavement markings. In this case, the City may consider using thermoplastic in-lieu of paint. Green pavement marking is proposed at all bicycle facility transition and conflict areas and will require Federal Highway Administration's (FHWA) interim approval.

On-Street Parking

The width of vehicle on-street parking shall be a minimum of 8 feet wide and 22 to 26 feet long, except for end spaces which may be 20 feet long. The NO PARKING ZONE on the approach to a marked or unmarked crosswalk shall be a minimum of 30 feet from the edge of the last parking space to the beginning of the crosswalk. Parking spaces should be marked with a short vertical white line to mark the side of the space and a short horizontal white line crossing it to mark each end of the space. Additional design guidance for parking space markings is described in Part 3 of the MUTCD.

6.3 Bicycle Facilities

Bicycle Lanes

Two-way cycle tracks (also known as protected bike lanes, separated bikeways, and on-street bike paths) are physically separated cycle tracks that allow bicycle movement in both directions on one side of the road. The two-way cycle track is proposed to be configured as a protected cycle track—at street level with a parking lane or other barrier between the cycle track and the motor vehicle travel lane. Since cycle tracks offer a higher level of separation, they make traveling by bicycle a more attractive option for a wider range of people. In many ways, riding on these cycle tracks can feel like riding on a bike path.

Figure 11: Two-Way Cycle Track
Image Source: NACTO Urban Bikeway Design Guide

The bicycle lane shall be a minimum of five feet wide against a curb or adjacent parking lane. If the curb includes a gutter pan, the width of gutter plan should not be counted towards the bicycle lane width since bicyclists are typically unable to use this space. This project proposes to overlay the existing gutter pan along the west side of the street with asphalt and stripe an 11-foot two-way protected cycle track comprised of a 5-foot wide southbound bicycle lane against the curb, 4.5-foot northbound bicycle lane, and 1.5-foot buffer.

Pavement Markings & Signs

Pavement markings within the cycle track will consist of a white helmeted bicycle rider symbol (in each direction) with spacing between symbols not to exceed 1,000 feet. At a minimum, the helmeted bicycle rider symbol shall be placed on the far side of every major and collector street intersection. A "DO NOT ENTER" sign (R5-1) with "EXCEPT BIKES" plaque shall be posted along the facility to permit use only by bicycles. In addition, at cross-streets and driveways, additional signage should be installed to inform the driver of the conflict, especially with the contra-flow bicycle traffic.

Green bike-cross markings (dotted green lines) should be used at all driveway crossings, intersections, and mixing zones for intersection/driveway approaches with right-turn only lanes. The use of "YIELD TO BIKES" signs can help roadway users to identify the conflict area. A dashed center lane should be used to separate the two directions of bicycle traffic. Gutter seams, drainage inlets, and utility covers within the bicycle lane should be flush with the pavement and positioned to avoid conflict with the bicycle wheel path.

The green pavement marking used at a driveway crossing is shown in Figure 12: "Bike-Cross" Dashed Green Pavement Marking in Conflict Areas.

The pattern of the green colored pavement should be in a manner matching the pattern of the dotted lines; filling in only the areas directly between a pair of dotted line segments (MUTCD Interim Approval IA-14).

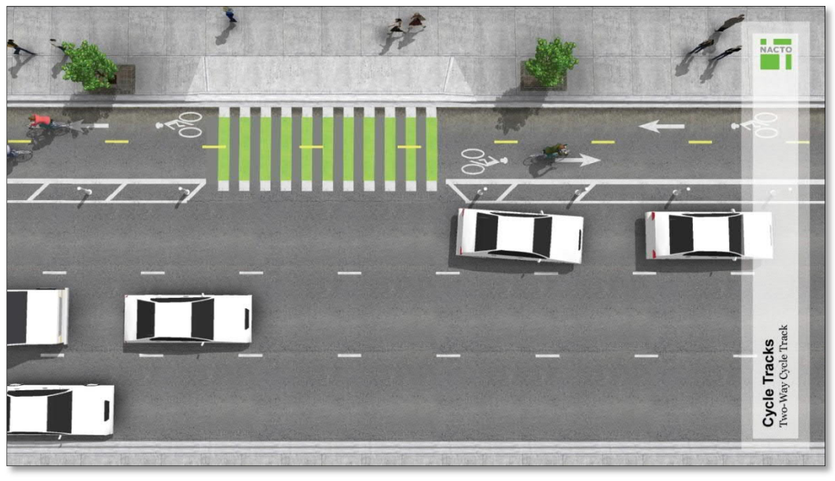


Figure 12: "Bike-Cross" Dashed Green Pavement Marking in Conflict Areas
Image Source: NACTO Urban Bikeway Design Guide

Bicycle Signals

Where there are conflicting movements, the vehicle turning movement shall be separated from the bicycle through movement using a different signal phase. There are no proposed dedicated right-turn lanes to the left of the proposed cycle track. For the southbound approach of 3rd Street and Lincoln Street, a flashing yellow arrow may be considered where the separated bicycle lane is to the right of a shared thru-right lane. Intersection traffic controls along the street shall be oriented towards and visible to contra-flow bicyclists.

Bicycle signal faces and bicycle detection will be required at each crossing of the two-way cycle track with the signalized intersections at Lincoln Street and Jefferson Street. Northbound bicyclists approaching Washington Street, should use a bike box and have a bicycle signal phase to be able to cross to the east side of 3rd Street in order to continue north on 3rd Street. The FHWA Memorandum, "Interim Approval for Optional Use of a Bicycle Signal Face (IA-16)" released in 2013 describes the purpose, background, research and details about how bicycle signal faces should be used at signalized intersections. The existing traffic signal poles in place at Washington Street and Jefferson Street appear to be capable of housing any necessary new bicycle equipment. Bicycle detection signs should be designed which include an LED feature to inform the cyclist that they have been detected by the traffic signal.

Figure 13: Bicycle Signal Application in Fort Collins, CO

Forms of Separation

On-street parking will be maintained along portions of the corridor. While not a barrier type on its own, parked cars can provide an additional level of protection and comfort for bicyclists. Additional vertical elements such as periodic delineator posts should be paired with this design. Barrier types that obstruct the opening of car doors or create tripping hazards should be avoided. Thus, bollards (10 – 40 feet typical spacing) may be another solution that will provide a vertical element to the narrow 1.5-foot buffer space. Large ceramic pavement markers, referred to as "dagmars", or linear plastic pavement markers, referred to as "road armadillos", or parking stops may create tripping hazards to pedestrians entering and exiting parked cars or create a fall hazard for bicyclists. Additional evaluation of the vertical separation element for

the separated bicycle lanes on 3rd Street from Washington to Lincoln, and discussion with stakeholders (e.g. traffic services, fire, convention center) should occur in the future design phases.

6.4 Pedestrian Facilities

ADA Pedestrian Ramps

This study proposes to reconstruct the existing sidewalk ramps at all four corners of each intersection along the corridor to comply with ADA standards and PROWAG guidelines. Several existing single ramps south of Jefferson Street will be replaced with new dual ramps where two crossings exist and there is sufficient right-of-way. Accessible pedestrian signal (APS) push buttons are in place at Washington Street and Jefferson Street but new APS push buttons will be required at Lincoln Street.

The sidewalk ramps shall comply with PROWAG guidelines, using the directional, two-ramp design and have a maximum of a 1:12 slope. The ramps shall include a tactile surface as a warning measure at the bottom 24" of the ramp. The tactile surfaces shall have a 70% color hue difference from the ramp surface and the ramps shall be the same concrete finishes as the sidewalk. Driveway crossings shall be updated to provide ADA accessible wrap-a-rounds and all facilities shall be evaluated for ADA compliance. No additional new right-of-way is anticipated to upgrade the sidewalk ramps and driveways.

Crosswalks

Crosswalks within the corridor are recommended to be striped in accordance with City of Phoenix Standards. If a lighter asphalt color is used for the project, then black contrast tape or some other style or FHWA compliant crosswalk pattern should be considered.

Traffic Signal Detection and Push Buttons

The push buttons for accessible pedestrian signals (APS) shall be located between 1.5 feet and 6 feet from the edge of curb in accordance with the guideline of MUTCD. If this is not feasible due to physical constraints, the push buttons shall be located no further than 10 feet from the edge of curb. In addition, APS pushbuttons should be located as close as possible to the crosswalk line furthest from the center of the intersection and at the top of the curb ramp. At 3rd Street's intersection with Washington Street and Jefferson Street, pedestrian push buttons are in place near the top of each ramp.

6.5 Union Pacific Railroad Facilities

UPRR Crossing

The City and UPRR will have to enter into an agreement to convert the at-grade railroad crossing between Jackson Street and Buchanan Street to accommodate two-way vehicular traffic on 3rd Street. An on-site meeting will be required with UPRR, Arizona Corporation Commission and City to review the proposed improvements and upgrades (new signal equipment) necessary for the crossing. The estimated time to convert the at-grade crossing is 13 months.

Quiet Zone

Quiet zones are established by the Federal Railroad Administration (FRA). The City will initiate the process to create a quiet zone at this crossing. A Quiet Zone Risk Index (QZRI) will be prepared to determine if the QZRI is equal to or less that the Nationwide Significant Risk Threshold (NSRT) and if additional safety measures will be required. A diagnostic review of the crossing will be conducted by a team consisting of the UPRR, FRA and City representatives to ensure the crossing meets the necessary safety requirements.

The City will submit a Notice of Intent (NOI) to FRA, State agencies and UPRR for the proposed quiet zone and plans for implementing improvements within the quiet zone. These agencies will have 60 days to provide comments to the City on the proposed plan. Once the proposed improvements and safety measures installed, the City will file a Notice of Establishment (NOE) to all affected parties.

7.0 RECOMMENDATION

Alternative 3 is recommended as the Preferred Alternative. The two phased approach provides the most flexibility in meeting the overall project goal and objectives for every day commuters and accommodating traffic during special events.

8.0 ITEMIZED ESTIMATE OF PROBABLE COSTS

The order of magnitude estimate of probable costs for the Preferred Alternative is $1,545,300 as shown below.

3RD STREET ROADWAY IMPROVEMENTS
WASHINGTON STREET TO LINCOLN STREET
15% ESTIMATE RECAPITULATION

DESCRIPTION	TOTAL	3RD STREET PHASE 1	3RD STREET PHASE 2
3RD STREET - PHASE 1	$253,600	$253,600	
3RD STREET - PHASE 2	$59,900		$59,900
SUBTOTAL CONSTRUCTION:	$313,500	$253,600	$59,900
CONSTRUCTION ENGINEERING	$62,800	$50,800	$12,000
CONSTRUCTION CONTINGENCIES	$15,700	$12,700	$3,000
RAILROAD CROSSING LIGHTS AND EQUIPMENT	$1,000,000		$1,000,000
NON-BID SUBTOTAL:	$1,392,000	$317,100	$1,074,900
ENGINEERING DESIGN	$139,300	$31,800	$107,500
POST DESIGN	$14,000	$3,200	$10,800
PROJECT TOTAL:	**$1,545,300**	**$352,100**	**$1,193,200**

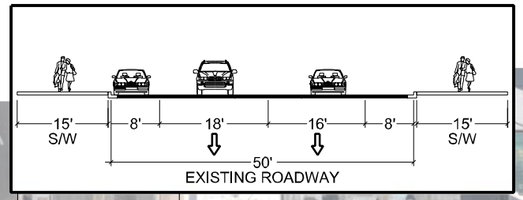
ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
PHASE 1 - ITEMS				
REMOVAL OF CONCRETE CURB AND GUTTER	L.FT.	71	$15.00	$1,065
REMOVAL OF CONCRETE SIDEWALKS, DRIVEWAYS AND SLABS	SQ.FT.	338	$8.00	$2,704
ASPHALTIC CONCRETE SECTION	TON	1	$350.00	$350
MICROSEAL	SQ. YD.	11,670	$3.50	$40,845
CONCRETE CURB AND GUTTER	L.FT.	103	$25.00	$2,575
CONCRETE SIDEWALK RAMP	EACH	1	$3,500.00	$3,500
REMOVAL OF PAVEMENT MARKINGS	L.SUM	1	$3,000.00	$3,000
PAVEMENT MARKINGS	L.SUM	1	$21,400.00	$21,400
RETRACTABLE BOLLARDS	EACH	57	$850.00	$48,450
NEW SIGNS	L.SUM	1	$12,000.00	$12,000
REMOVE SIGNS	L.SUM	1	$2,000.00	$2,000
SIGNAL MODIFICATIONS	L.SUM	1	$1,500.00	$1,500
NEW SIGNAL EQUIPMENT	L.SUM	1	$1,500.00	$1,500
RELOCATE BIKE RACK	EACH	1	$750.00	$750
RELOCATE FIRE HYDRANT	EACH	1	$5,000.00	$5,000
RELOCATE LIGHT RAIL POLE	EACH	1	$25,000.00	$25,000
SUBTOTAL - ABOVE ITEMS				**$171,700**
MOBILIZATION		10%		$17,200
TRAFFIC CONTROL		5%		$8,600
CONTRACTOR QUALITY CONTROL		3%		$5,200
CONSTRUCTION SURVEYING AND LAYOUT		5%		$8,600
SUBTOTAL PROJECT				**$211,300**
UNIDENTIFIED ITEMS		20%		$42,300
TOTAL CONSTRUCTION ITEMS				**$253,600**
CONSTRUCTION ENGINEERING		20%		$50,800
CONSTRUCTION CONTINGENCIES		5%		$12,700
TOTAL CONSTRUCTION COST				**$317,100**
OTHER PROJECT COSTS:				
ENGINEERING DESIGN		10%		$31,800
POST DESIGN		1%		$3,200
			PHASE 1 - TOTAL	**$352,100**

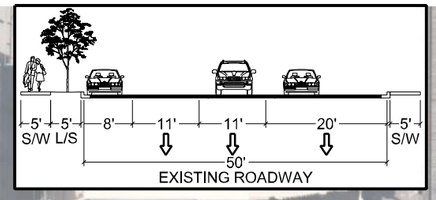
ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
PHASE 2 - ITEMS				
REMOVAL OF CONCRETE CURB AND GUTTER	L.FT.	33	$15.00	$495
REMOVAL OF ASPHALTIC CONCRETE PAVEMENT	SQ.YD.	17	$25.00	$425
ASPHALTIC CONCRETE SECTION	TON	1	$350.00	$350
REMOVAL OF PAVEMENT MARKINGS	L.SUM	1	$5,000.00	$5,000
PAVEMENT MARKINGS	L.SUM	1	$5,000.00	$5,000
NEW SIGNS	L.SUM	1	$5,000.00	$5,000
REMOVE SIGNS	L.SUM	1	$2,000.00	$2,000
SIGNAL MODIFICATIONS	L.SUM	1	$10,000.00	$10,000
NEW SIGNAL EQUIPMENT	L.SUM	1	$12,000.00	$12,000
SUBTOTAL - ABOVE ITEMS				**$40,300**
MOBILIZATION		10%		$4,100
TRAFFIC CONTROL		5%		$2,100
CONTRACTOR QUALITY CONTROL		3%		$1,300
CONSTRUCTION SURVEYING AND LAYOUT		5%		$2,100
SUBTOTAL PROJECT				**$49,900**
UNIDENTIFIED ITEMS		20%		$10,000
TOTAL CONSTRUCTION ITEMS				**$59,900**
CONSTRUCTION ENGINEERING		20%		$12,000
CONSTRUCTION CONTINGENCIES		5%		$3,000
RAILROAD CROSSING LIGHTS AND EQUIPMENT				$1,000,000
TOTAL CONSTRUCTION COST				**$1,074,900**
OTHER PROJECT COSTS:				
ENGINEERING DESIGN		10%		$107,500
POST DESIGN		1%		$10,800
			PHASE 2 - TOTAL	**$1,193,200**

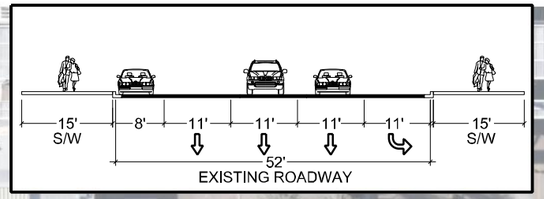
APPENDIX A: ALTERNATIVES

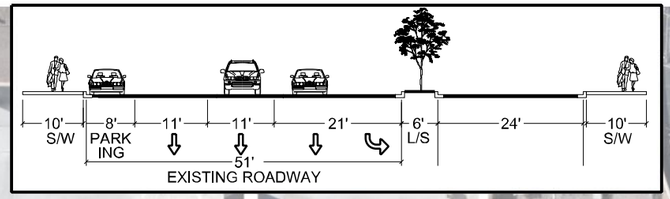
POINT ENGINEERS

TOTAL METERED PARKING = 39
TOTAL UN-METERED PARKING = 18









City of Phoenix

NO - BUILD
SHEET 1 OF 1

CITY OF PHOENIX, ARIZONA
STREET TRANSPORTATION DEPARTMENT

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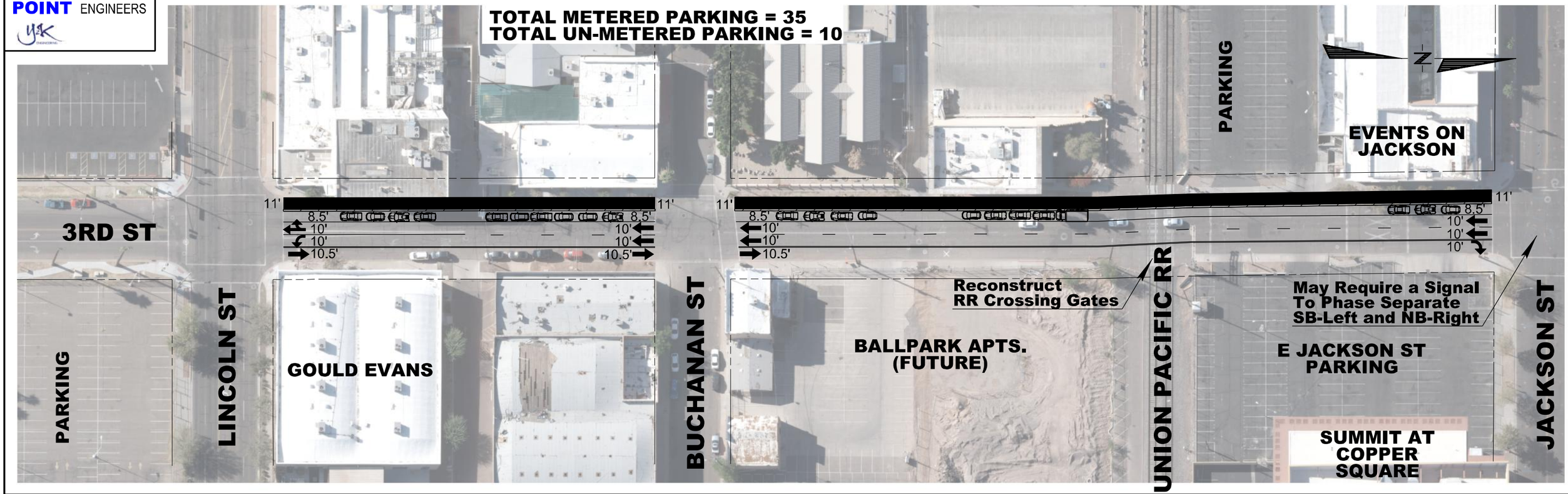
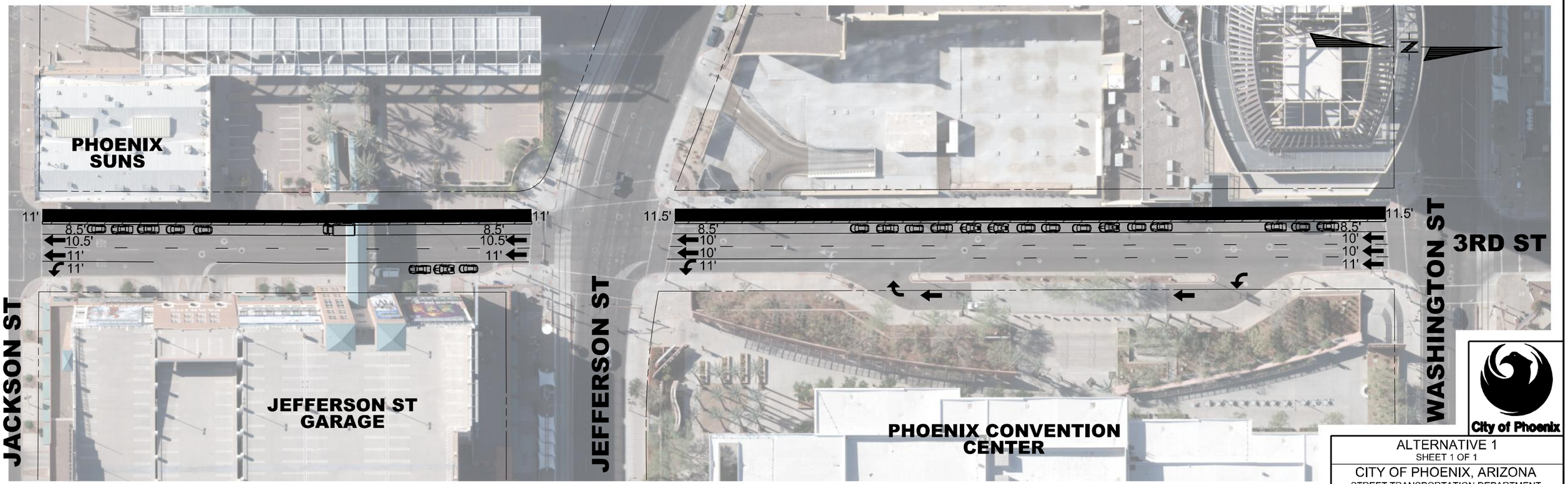
POINT ENGINEERS

TOTAL METERED PARKING = 35
TOTAL UN-METERED PARKING = 10





City of Phoenix

ALTERNATIVE 1
SHEET 1 OF 1

CITY OF PHOENIX, ARIZONA
STREET TRANSPORTATION DEPARTMENT

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POINT ENGINEERS

TOTAL METERED PARKING = 6
TOTAL UN-METERED PARKING = 10

N

3RD ST

No Parking After XX:00 PM/
Lane During Events

10' 10' 10' 10' 10' 10' 10' 10' 10'

PARKING

LINCOLN ST

GOULD EVANS

BUCHANAN ST

BALLPARK APTS.
(FUTURE)

UNION PACIFIC RR

PARKING

EVENTS ON
JACKSON

10' 20' 10' 10' 10' 10' 10' 10' 9.5'

Reconstruct
RR Crossing

Reconstruct Curb & Gutter,
Sidewalk and Driveways

May Require a Signal
To Phase Separate
SB-Left and NB-Right

E JACKSON ST
PARKING

SUMMIT AT
COPPER
SQUARE

JACKSON ST

PHOENIX
SUNS

11' 10' 10.5' 10.5' 10.5' 10.5' 10.5' 11' 11'

JACKSON ST

JEFFERSON ST
GARAGE

JEFFERSON ST

PHOENIX CONVENTION
CENTER

11' 10' 10' 10' 10' 10' 8.5' 10.5' 10.5' 10.5' 11'

WASHINGTON ST

3RD ST

City of Phoenix

ALTERNATIVE 2
SHEET 1 OF 1

CITY OF PHOENIX, ARIZONA
STREET TRANSPORTATION DEPARTMENT

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POINT ENGINEERS

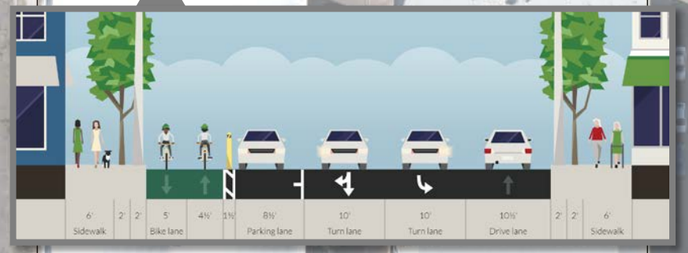
TOTAL METERED PARKING = 35
TOTAL UN-METERED PARKING = 8
NET PARKING LOSS/GAIN = -14

3RD ST

PARKING

LINCOLN ST

15' 12' 12' 8.5' 3.5' 10' 10' 10.5'



BUCHANAN ST

11' 8.5' 10' 10' 10.5'

Construct Curb & Gutter

BALLPARK APTS. (FUTURE)

UNION PACIFIC RR

PARKING

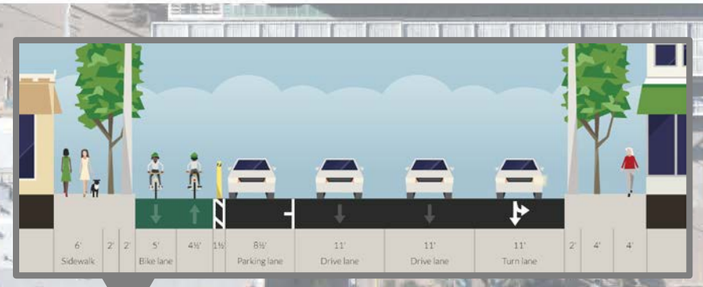
EVENTS ON JACKSON

8.5' 10' 10' 10.5'

E JACKSON ST PARKING

SUMMIT AT COPPER SQUARE

JACKSON ST

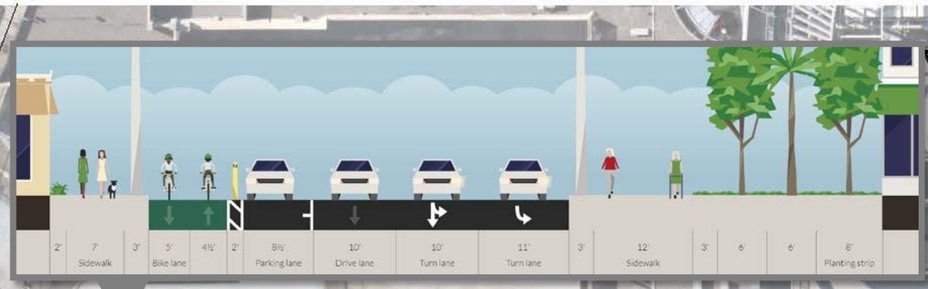


8.5' 10.5' 11' 11' 8.5' 10.5' 11'

JACKSON ST

JEFFERSON ST GARAGE

JEFFERSON ST



8.5' 10' 10' 11' 8.5' 10' 10' 11'

WASHINGTON ST

3RD ST

PHOENIX CONVENTION CENTER

City of Phoenix

ALTERNATIVE 3: PHASE 1
SHEET 1 OF 1
CITY OF PHOENIX, ARIZONA
STREET TRANSPORTATION DEPARTMENT

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POINT ENGINEERS

TOTAL METERED PARKING = 19
TOTAL UN-METERED PARKING = 8
NET PARKING LOSS/GAIN = **-30**

3RD ST

PARKING

LINCOLN ST

BUCHANAN ST

PARKING

EVENTS ON JACKSON

15' 12' 12' 8.5' 3.5' 11' 10' 10' 10.5'

11' 8.5' 10' 10' 10.5' 8.5' 10' 10' 10'

Remove Curb & Gutter

Reconstruct RR Crossing Gates

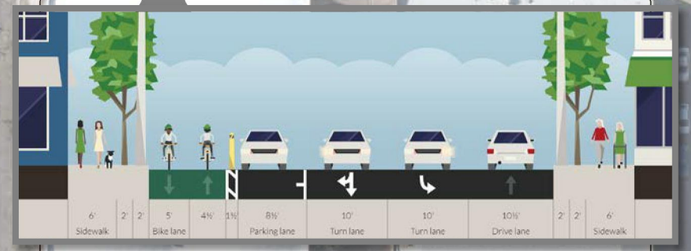
BALLPARK APTS. (FUTURE)

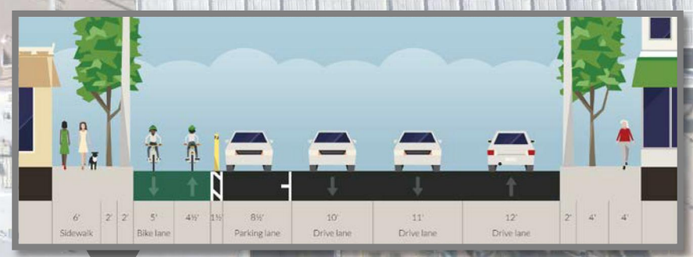
UNION PACIFIC RR

E JACKSON ST PARKING

SUMMIT AT COPPER SQUARE

JACKSON ST





11' 8.5' 10' 11' 12' 14' 12' 11'

10' 10' 10' 10' 8.5' 10.5' 10.5' 10.5'

JACKSON ST

Reconstruct Curb & Gutter, Sdwlk Ramps and Affected Items

JEFFERSON ST GARAGE

JEFFERSON ST

PHOENIX CONVENTION CENTER

WASHINGTON ST

3RD ST

City of Phoenix

ALTERNATIVE 3: PHASE 2
SHEET 1 OF 1
CITY OF PHOENIX, ARIZONA
STREET TRANSPORTATION DEPARTMENT

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APPENDIX B: SUMMARY OF STAKEHOLDER MEETINGS

3rd Street Pre-Design and Feasibility Study for Roadway Improvements Washington Street to Lincoln Street Project No: ST87100163-1 **Phoenix Convention Center Stakeholder Meeting Notes**	Date: Thurs Oct 3, 2018 Time: **11:30 AM** Location: Convention Center, CPZ Conf Rm

OVERVIEW

- The purpose of the meeting is to present a proposed concept for the improvement of 3rd Street based on the input from various key stakeholders.
- Chris Kowalsky noted the City's consultant Burgess & Niple (B&N) is currently preparing a VISSM model of 3rd Street, to include the unsolicited 3rd Street proposal which will affect the area north of Washington Street. B&N will evaluate if the is capacity on 3rd Street to support all future development coming to this area.

PROPOSED CONCEPT

Phase 1

- The primary reason for Phase 1 is to defer improvements to the railroad crossings which will require significant cost and time to coordinate with the railroad.
- Phase 1 will carry three southbound lanes from Washington to Jefferson with two lanes continuing through the intersection.
- Three lanes will continue south to Jackson and then merge into two southbound lanes just north of the railroad tracks. The two southbound lanes will continue to Lincoln.
- In the northbound direction, a new northbound lane will be created from Lincoln to the future Ballpark Apartments just south of the railroad tracks.
- The Ballpark Apartments site plan has preliminary approval from the City and can submit construction drawings anytime.
- A two-way cycle track would be provided on the west side between Lincoln and Washington. The cycle track would be at street level separated from the parking lane using some form of physical delineators such as raised dome shaped "buttons" or posts. The large dome buttons would discourage cars from crossing into the cycle track but would be mountable for school buses to park during events.
- The Convention staff noted that they have a TRAKS(?) permit allowing them to take parking spaces to park school busses between Washington and Lincoln. This is from September to May, one week a month, all lanes are closed except two lanes on the east side of 3rd Street. The study team will evaluate options for the cycle track separation including drop down bollards, large dome shaped "buttons" or other vehicle mountable and easily removable posts.
- Bicycles will have to be re-routed when the school busses are parked or signs to indicate bike lanes are closed.

Phase 2

- The northbound lane from Phase 1 will continue north to Washington.
- There was a concern raised regarding the Jefferson eastbound to 3rd Street northbound left-turn movement due to the geometry of the intersection. The study team should consider moving the southbound left-turn stop bar back or consider prohibiting this movement. Currently there is no left turn from eastbound Jefferson to 3rd Street (one-way).
- There will be signal modifications at Lincoln, Jefferson and Washington. Wayfinding signs will be reviewed and updated to reflect new traffic flows. New wayfinding signs should also be added. The signs at the Convention Center should also be modified.

3rd Street Pre-Design and Feasibility Study
For Roadway Improvements
Washington Street to Lincoln Street
Project No. ST87100163-1
Stakeholder Meeting – October 3, 2018

CHECK IN (Initials)	NAME	FIRM / SECTION	PHONE	CELL PHONE	E-MAIL
CK	Christopher Kowalsky	City of Phoenix	602-495-3697		Chris.kowalsky@phoenix.gov
	Mark Melnychenko	City of Phoenix	602-534-0592		Mark.melnychenko@phoenix.gov
JL	Jeremy Legg	City of Phoenix Convention Center	602-534-6451	602-810-8979	Jeremy.legg@phoenix.gov
KM	Kevin Mattingly	City of Phoenix Convention Center			Kevin.mattingly@phoenix.gov
BF	Bob Fingerman	City of Phoenix Convention Center			Bob.fingerman@phoenix.gov
TK	Thomas Kaucheck	City of Phoenix Convention Center			Thomas.Kaucheck@phoenix.gov
JC	John Chan	City of Phoenix Convention Center			John.Chan@phoenix.gov
PW	Paul Waung	POINT Engineers	602-814-0657	480-313-4847	pwaung@pointengineers.com
	Brent Forstie	POINT Engineers	602-795-0724	480-272-2693	bforstie@pointengineers.com
YK	Yung Koprowski	Y2K Engineering	480-696-1701	480-696-1701	ykoprowski@y2keng.com
	Chris Williams	Y2K Engineering	602-380-8686	602-380-8686	cwilliams@y2keng.com

POINT ENGINEERS

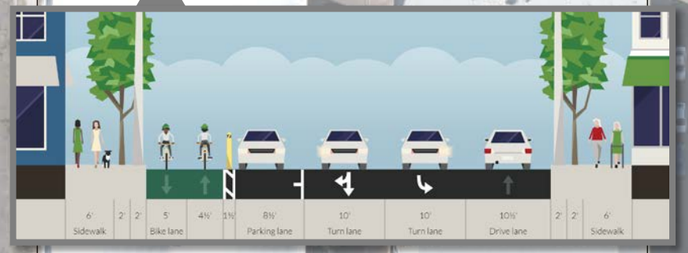
TOTAL METERED PARKING = 35
TOTAL UN-METERED PARKING = 8
NET PARKING LOSS/GAIN = -14

3RD ST

PARKING

LINCOLN ST

15' 12' 12' 8.5' 3.5' 10' 10' 10.5'



BUCHANAN ST

11' 8.5' 10' 10' 10.5'

Construct Curb & Gutter

BALLPARK APTS. (FUTURE)

UNION PACIFIC RR

PARKING

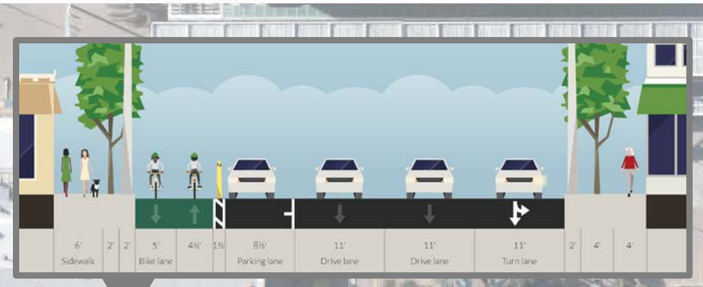
EVENTS ON JACKSON

8.5' 10' 10' 10.5'

E JACKSON ST PARKING

SUMMIT AT COPPER SQUARE

JACKSON ST

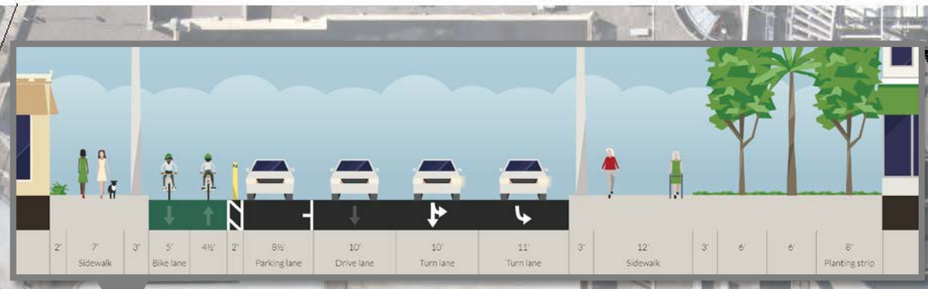


8.5' 10.5' 11' 11' 8.5' 10.5' 11'

JACKSON ST

JEFFERSON ST GARAGE

JEFFERSON ST



8.5' 10' 10' 11' 8.5' 10' 10' 11'

WASHINGTON ST

3RD ST

PHOENIX CONVENTION CENTER

City of Phoenix

ALTERNATIVE 3: PHASE 1
SHEET 1 OF 1
CITY OF PHOENIX, ARIZONA
STREET TRANSPORTATION DEPARTMENT

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POINT ENGINEERS

TOTAL METERED PARKING = 19
TOTAL UN-METERED PARKING = 8
NET PARKING LOSS/GAIN = **-30**

3RD ST

PARKING

LINCOLN ST

BUCHANAN ST

PARKING

EVENTS ON JACKSON

15' 12' 12' 8.5' 3.5' 11' 10' 10' 10.5'

11' 8.5' 10' 10' 10.5' 8.5' 10' 10' 10'

Remove Curb & Gutter

Reconstruct RR Crossing Gates

UNION PACIFIC RR

BALLPARK APTS. (FUTURE)

E JACKSON ST PARKING

SUMMIT AT COPPER SQUARE

JACKSON ST

6' Sidewalk | 2' | 2' | 5' Bike lane | 4½' | 1½' | 8½' Parking lane | 10' Turn lane | 10' Turn lane | 10½' Drive lane | 2' | 2' | 6' Sidewalk

2' | 7' Sidewalk | 3' | 5' Bike lane | 4½' | 1½' | 10' Drive lane | 10' Drive lane | 10' Turn lane | 10' Drive lane | 3' | 12' Sidewalk | 3' | 6' | 6' | 8' Planting strip

6' Sidewalk | 2' | 2' | 5' Bike lane | 4½' | 1½' | 8½' Parking lane | 10' Drive lane | 11' Drive lane | 12' Drive lane | 2' | 4' | 4'

11' 8.5' 10' 11' 12' 14' 12' 11'

Reconstruct Curb & Gutter, Sdwlk Ramps and Affected Items

JEFFERSON ST GARAGE

JACKSON ST

JEFFERSON ST

10' 10' 10' 10' 8.5' 10.5' 10.5' 10.5'

PHOENIX CONVENTION CENTER

WASHINGTON ST

3RD ST

City of Phoenix

ALTERNATIVE 3: PHASE 2
SHEET 1 OF 1
CITY OF PHOENIX, ARIZONA
STREET TRANSPORTATION DEPARTMENT

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3rd Street Pre-Design and Feasibility Study for Roadway Improvements Washington Street to Lincoln Street Project No: ST87100163-1 **Stakeholder Meeting Notes**	Date: Thurs Oct 4, 2018 Time: **3:00 PM** Location: City of Phoenix, 5th Flr Conf Rm

OVERVIEW

- The purpose of the meeting is to present a proposed concept for the improvement of 3rd Street based on the input from various key stakeholders.
- The study team met with the stakeholders in April/May 2018 and discussed alternatives for improving 3rd Street based on the recommendations from the Phoenix Downtown Transportation Study.
- Based on comments received from stakeholders, the study team re-evaluated the alternatives and developed a preliminary concept.
- The team also met with the Police prior to this meeting to solicit their input.

PROPOSED CONCEPT

- This study is a scoping assessment to develop a concept for 3rd Street improvements that would be generally acceptable to the stakeholders.
- The next step is to prepare a report documenting the findings and develop15% design plans for the preferred concept. At this time, there is no funding for this project and the project is not in the City's Capital Improvement Plan (CIP). If uncommitted funding becomes available in the future, that may be a potential source to move this project to the next phase. Other funded projects may be delayed and funding may potentially be made available.

Phase 1

- The primary reason for Phase 1 is to defer improvements to the railroad crossings which will require significant cost and time to coordinate with the railroad.
- Phase 1 will carry three southbound lanes from Washington to Jefferson with two lanes continuing through the intersection. Woody Browder expressed concern of a reduction in capacity with two lanes through the intersection south of Jefferson. (*Yung Koprowski suggested that the study team will evaluate modifying the existing curb at the southeast corner of the intersection to allow three lanes through the intersection to alleviate that problem).*
- Three lanes will continue south to Jackson and then merge into two southbound lanes just north of the railroad tracks. The two southbound lanes will continue to Lincoln.
- In the northbound direction, a new northbound lane will be created from Lincoln to the future Ballpark Apartments just south of the railroad tracks.
- The Ballpark Apartments site plan has preliminary approval from the City and can submit construction drawings anytime. The development has been under new ownership for 6 months and 3 months ago the new owners submitted a request to the City for special treatment to Buchanan. The Summit Apartments currently uses Buchanan to access their complex.
- A two-way cycle track would be provided on the west side between Lincoln and Washington. The cycle track would be at street level separated from the parking lane using some form of physical delineators such as raised dome shaped "buttons" or posts. The large dome buttons would discourage cars from crossing into the cycle track but would be mountable for school buses to park during events.

Phase 2

- The northbound lane from Phase 1 will continue north to Washington.
- As noted above, the team will evaluate modifying the existing curb at the southeast corner of the intersection to allow three lanes through the intersection in Phase 1.

NEXT PHASE OF PROJECT

- The proposed preferred concept described above would be for every day use (non-event) scenario. During events, 3rd Street would be Police controlled as is currently done.
- In the next phase of the project following this Feasibility Study, a detailed analysis of event traffic ingress and egress will be performed.

3rd Street Pre-Design and Feasibility Study
For Roadway Improvements
Washington Street to Lincoln Street
Project No. ST87100163-1
Stakeholder Meeting – October 4, 2018

CHECK IN (Initials)	NAME	FIRM / SECTION	PHONE	CELL PHONE	E-MAIL
	Christopher Kowalsky	City of Phoenix Street Transportation	602-495-3697		Chris.kowalsky@phoenix.gov
MM	Mark Melnychenko	City of Phoenix Street Transportation	602-534-0592		Mark.melnychenko@phoenix.gov
	Gerri Sandy				GSandy@suns.com
RM	Ralph Marchetta				rmarchetta@phxses.com
MB	Maria Baier				MBaier@suns.com
NB	Norwood Browder	Traffic Support Services	602-462-6060	602-722-7668	NBrowder@phxses.com
RA	Russ Amaral	D-backs	602-462-6677	602 722-1820	ramaral@dbacks.com
	Benjamin Moore				Benjamin.Moore@phoenix.gov
	Jeff Moloznik	RED Development	480-947-7772		JMolonznik@reddevelopment.com
PW	Paul Waung	POINT Engineers	602-814-0657	480-313-4847	pwaung@pointengineers.com
	Brent Forstie	POINT Engineers	602-795-0724	480-272-2693	bforstie@pointengineers.com
YK	Yung Koprowski	Y2K Engineering	480-696-1701	480-696-1701	ykoprowski@y2keng.com
	Chris Williams	Y2K Engineering	602-380-8686	602-380-8686	cwilliams@y2keng.com

POINT ENGINEERS

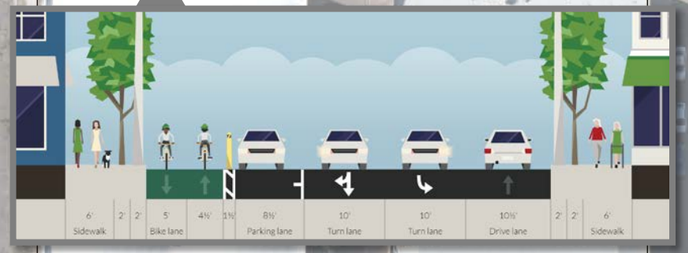
TOTAL METERED PARKING = 35
TOTAL UN-METERED PARKING = 8
NET PARKING LOSS/GAIN = -14

3RD ST

PARKING

LINCOLN ST

15' 12' 12' 8.5' 3.5' 10' 10' 10.5'



BUCHANAN ST

11' 8.5' 10' 10' 10.5'

Construct Curb & Gutter

BALLPARK APTS. (FUTURE)

UNION PACIFIC RR

PARKING

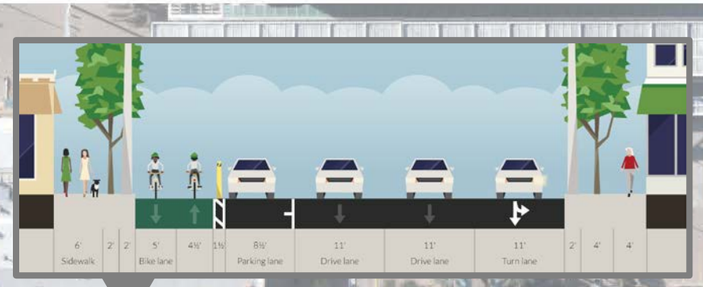
EVENTS ON JACKSON

8.5' 10' 10' 10.5'

E JACKSON ST PARKING

SUMMIT AT COPPER SQUARE

JACKSON ST

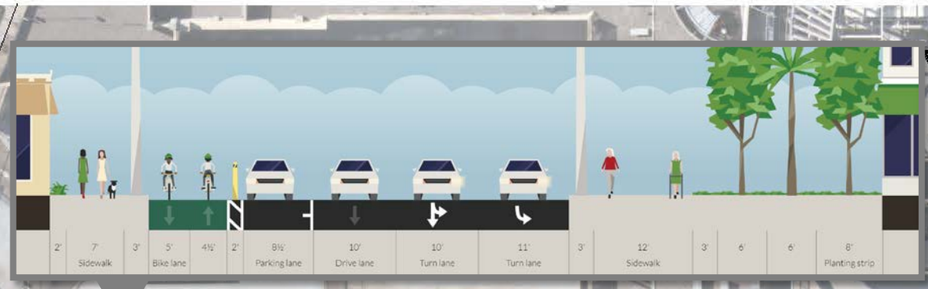


8.5' 10.5' 11' 11' 8.5' 10.5' 11'

JACKSON ST

JEFFERSON ST GARAGE

JEFFERSON ST



8.5' 10' 10' 11' 8.5' 10' 10' 11'

WASHINGTON ST

3RD ST

PHOENIX CONVENTION CENTER

City of Phoenix

ALTERNATIVE 3: PHASE 1
SHEET 1 OF 1
CITY OF PHOENIX, ARIZONA
STREET TRANSPORTATION DEPARTMENT

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POINT ENGINEERS

TOTAL METERED PARKING = 19
TOTAL UN-METERED PARKING = 8
NET PARKING LOSS/GAIN = **-30**

3RD ST

PARKING

LINCOLN ST

BUCHANAN ST

PARKING

EVENTS ON JACKSON

15' 12' 12' 8.5' 3.5' 11' 10' 10' 10.5'

11' 8.5' 10' 10' 10.5' 8.5' 10' 10' 10'

Remove Curb & Gutter

Reconstruct RR Crossing Gates

UNION PACIFIC RR

BALLPARK APTS. (FUTURE)

E JACKSON ST PARKING

SUMMIT AT COPPER SQUARE

JACKSON ST

6' Sidewalk | 2' | 2' | 5' Bike lane | 4½' | 1½' | 8½' Parking lane | 10' Turn lane | 10' Turn lane | 10½' Drive lane | 2' | 2' | 6' Sidewalk

2' | 7' Sidewalk | 3' | 5' Bike lane | 4½' | 1½' | 10' Drive lane | 10' Drive lane | 10' Turn lane | 10' Drive lane | 3' | 12' Sidewalk | 3' | 6' | 6' | 8' Planting strip

6' Sidewalk | 2' | 2' | 5' Bike lane | 4½' | 1½' | 8½' Parking lane | 10' Drive lane | 11' Drive lane | 12' Drive lane | 2' | 4' | 4'

11' 8.5' 10' 11' 12' 14' 12' 11'

Reconstruct Curb & Gutter, Sdwlk Ramps and Affected Items

JEFFERSON ST GARAGE

JACKSON ST

JEFFERSON ST

10' 10' 10' 10' 8.5' 10.5' 10.5' 10.5'

PHOENIX CONVENTION CENTER

WASHINGTON ST

3RD ST

City of Phoenix

ALTERNATIVE 3: PHASE 2
SHEET 1 OF 1
CITY OF PHOENIX, ARIZONA
STREET TRANSPORTATION DEPARTMENT

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3rd Street Pre-Design and Feasibility Study for Roadway Improvements Washington Street to Lincoln Street Project No: ST87100163-1 **Warehouse District** **Stakeholder Meeting Notes**	Date: Thurs Oct 5, 2018 Time: **1:00 PM** Location: City of Phoenix, 6th Flr Conf Rm

OVERVIEW

- The purpose of the meeting is to present a proposed concept for the improvement of 3rd Street based on the input from various key stakeholders.
- Chris Kowalsky explained that the proposed concept was based on some give and take such as losing street parking on the east side while maintaining west side parking from Lincoln to Jackson.

PROPOSED CONCEPT

Phase 1

- The primary reason for Phase 1 is to defer improvements to the railroad crossings which will require significant cost and time to coordinate with the railroad.
- Phase 1 will carry three southbound lanes from Washington to Jefferson and continuing three lanes through the intersection. The existing curb at the southeast corner will be modified to allow three lanes through the intersection.
- Three lanes will continue south to Jackson and then merge into two southbound lanes just north of the railroad tracks. The two southbound lanes will continue to Lincoln. Dan Klocke asked if 10-foot lanes would be acceptable to the City. Mark Melnychenko responded that that the City's Traffic Services will review that in the final design. The City has used 10-foot lanes before and don't anticipate issues due to the slow speed.
- In the northbound direction, a new northbound lane will be created from Lincoln to the future Ballpark Apartments just south of the railroad tracks.
- The Ballpark Apartments site plan has preliminary approval from the City and can submit construction drawings anytime.
- A two-way cycle track would be provided on the west side between Lincoln and Washington. The cycle track would be at street level separated from the parking lane using some form of physical delineators such as raised dome shaped "buttons" or posts. The large dome buttons would discourage cars from crossing into the cycle track but would be mountable for school buses to park during events.

Phase 2

- The northbound lane from Phase 1 will continue north to Washington.
- As noted above, the team will evaluate modifying the existing curb at the southeast corner of the intersection to allow three lanes through the intersection in Phase 1.

OTHER

- Dan Klocke asked if the bicycle facility is in compliance with NACTO and other national standards. Yung Koprowski responded that the design is in compliance. With the preferred alternative identified, the study will produce more detailed renderings and will be documented in the Project Assessment Report.
- Question about bicycle signal phasing – Yung Koprowski noted that a bicycle signal phase will be required at Jefferson intersection and will evaluate how it will transition at Washington.
- Yung Koprowski noted that bicycle signal timing would not be applicable for these intersections since they have short crossings and are set to accommodate pedestrian clearance every cycle.

3rd Street Pre-Design and Feasibility Study
For Roadway Improvements
Washington Street to Lincoln Street
Project No. ST87100163-1
Warehouse District Stakeholder Meeting – October 5, 2018

CHECK IN (Initials)	NAME	FIRM / SECTION	PHONE	CELL PHONE	E-MAIL
CKO	Christopher Kowalsky	City of Phoenix Street Transportation	602-495-3697		Chris.kowalsky@phoenix.gov
MM	Mark Melnychenko	City of Phoenix Street Transportation	602-534-0592		Mark.melnychenko@phoenix.gov
DK	Dan Klocke	Downtown Phoenix Partnership	602-744-6407		DKlocke@dtphx.org
	Krista Shepherd	Gould Evans			Krista.Shepherd@GouldEvans.com
PW	Paul Waung	POINT Engineers	602-814-0657	480-313-4847	pwaung@pointengineers.com
	Brent Forstie	POINT Engineers	602-795-0724	480-272-2693	bforstie@pointengineers.com
	Yung Koprowski	Y2K Engineering	480-696-1701	480-696-1701	ykoprowski@y2keng.com
	Chris Williams	Y2K Engineering	602-380-8686	602-380-8686	cwilliams@y2keng.com
✓	Samantha Jackson	DPI/DPP	(602-614-2386 →		sjackson@dtphx.org
✓	Dewey Preuss	DPI / PCA	602 682 6412		dpreuss@dtphx.org

POINT ENGINEERS

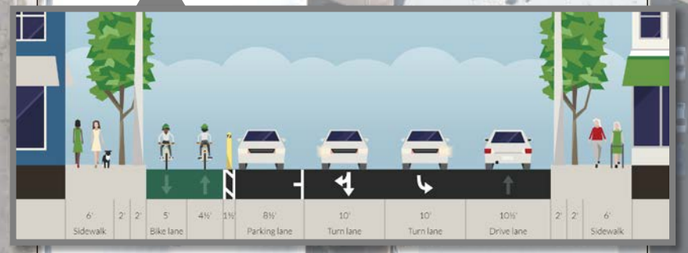
TOTAL METERED PARKING = 35
TOTAL UN-METERED PARKING = 8
NET PARKING LOSS/GAIN = -14

3RD ST

PARKING

LINCOLN ST

15' 12' 12' 8.5' 3.5' 10' 10' 10.5'



BUCHANAN ST

11' 8.5' 10' 10' 10.5'

Construct Curb & Gutter

BALLPARK APTS. (FUTURE)

UNION PACIFIC RR

PARKING

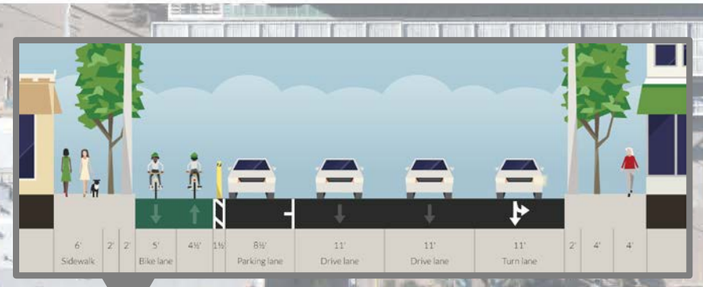
EVENTS ON JACKSON

8.5' 10' 10' 10.5'

E JACKSON ST PARKING

SUMMIT AT COPPER SQUARE

JACKSON ST

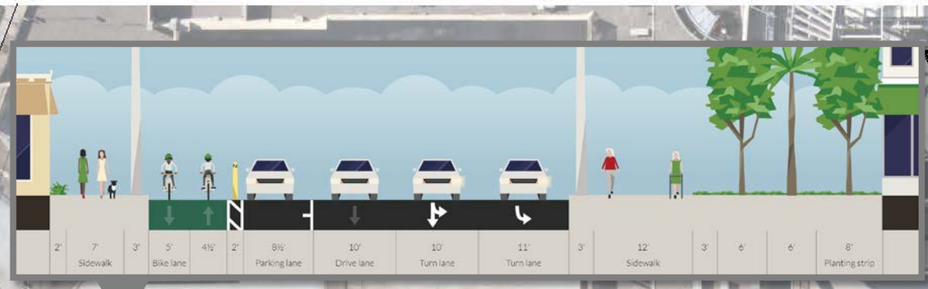


8.5' 10.5' 11' 11' 8.5' 10.5' 11'

JACKSON ST

JEFFERSON ST GARAGE

JEFFERSON ST



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WASHINGTON ST

3RD ST

PHOENIX CONVENTION CENTER

City of Phoenix

ALTERNATIVE 3: PHASE 1
SHEET 1 OF 1
CITY OF PHOENIX, ARIZONA
STREET TRANSPORTATION DEPARTMENT

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POINT ENGINEERS

TOTAL METERED PARKING = 19
TOTAL UN-METERED PARKING = 8
NET PARKING LOSS/GAIN = **-30**

3RD ST

PARKING

LINCOLN ST

BUCHANAN ST

PARKING

EVENTS ON JACKSON

15' 12' 12' 8.5' 3.5' 11' 10' 10' 10.5'

11' 8.5' 10' 10' 10.5' 8.5' 10' 10' 10'

Remove Curb & Gutter

Reconstruct RR Crossing Gates

UNION PACIFIC RR

BALLPARK APTS. (FUTURE)

E JACKSON ST PARKING

SUMMIT AT COPPER SQUARE

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ALTERNATIVE 3: PHASE 2
SHEET 1 OF 1
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