

Design and Environmental Study For



ARLINGTON AVENUE BRIDGES REPLACEMENT

Design Review Committee Meeting #3 | May 10, 2022

Purpose of Today's DRC Meeting:

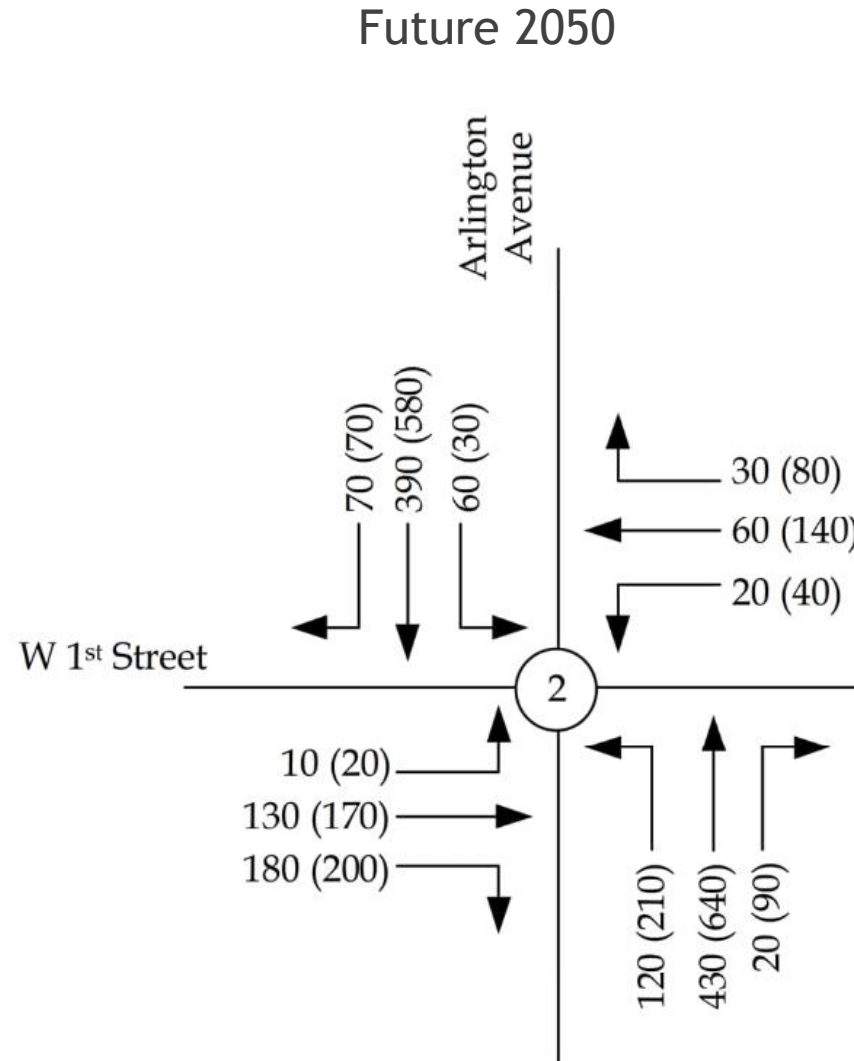
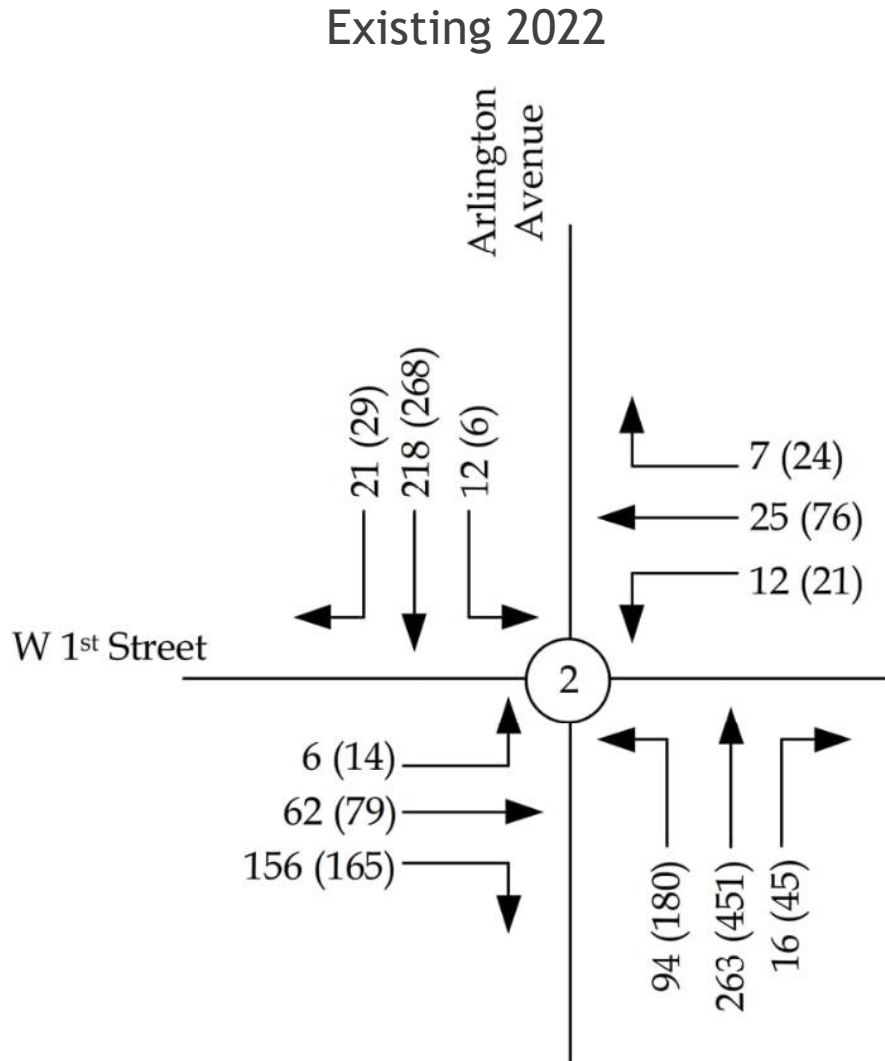
- ✓ Traffic Model Results - Queue Lengths
- ✓ Roadway Design Updates
- ✓ Bridge Design Updates
- ✓ Hydraulic Modeling Updates
- ✓ Utilities
- ✓ Environmental Update
- ✓ Right of Way
- ✓ Schedule



Traffic Counts

Traffic Counts Obtained March 29

Arlington Ave & First Street AM Peak Hr. (PM Peak Hr.)



Queue Lengths

95th percentile for year 2050

Queue Lengths Only (*Add Deceleration, Taper Length(s)*)



Southbound Right

queue from analysis shorter than existing
maintain existing

Southbound Left

Eastbound Right

150 ft

(Existing only 50'
Built as such
In 2003-ish)



Westbound

Shared Left/Thru

Northbound Left

250'
(Ext. ~ 175')

Northbound Right

queue from analysis shorter than existing
maintain existing ~ 175'

Queue Lengths

95th percentile for year 2050

Queue Lengths Only (*Add Deceleration, Taper Length(s)*)



2002



2004

Queue Lengths

95th percentile for year 2050

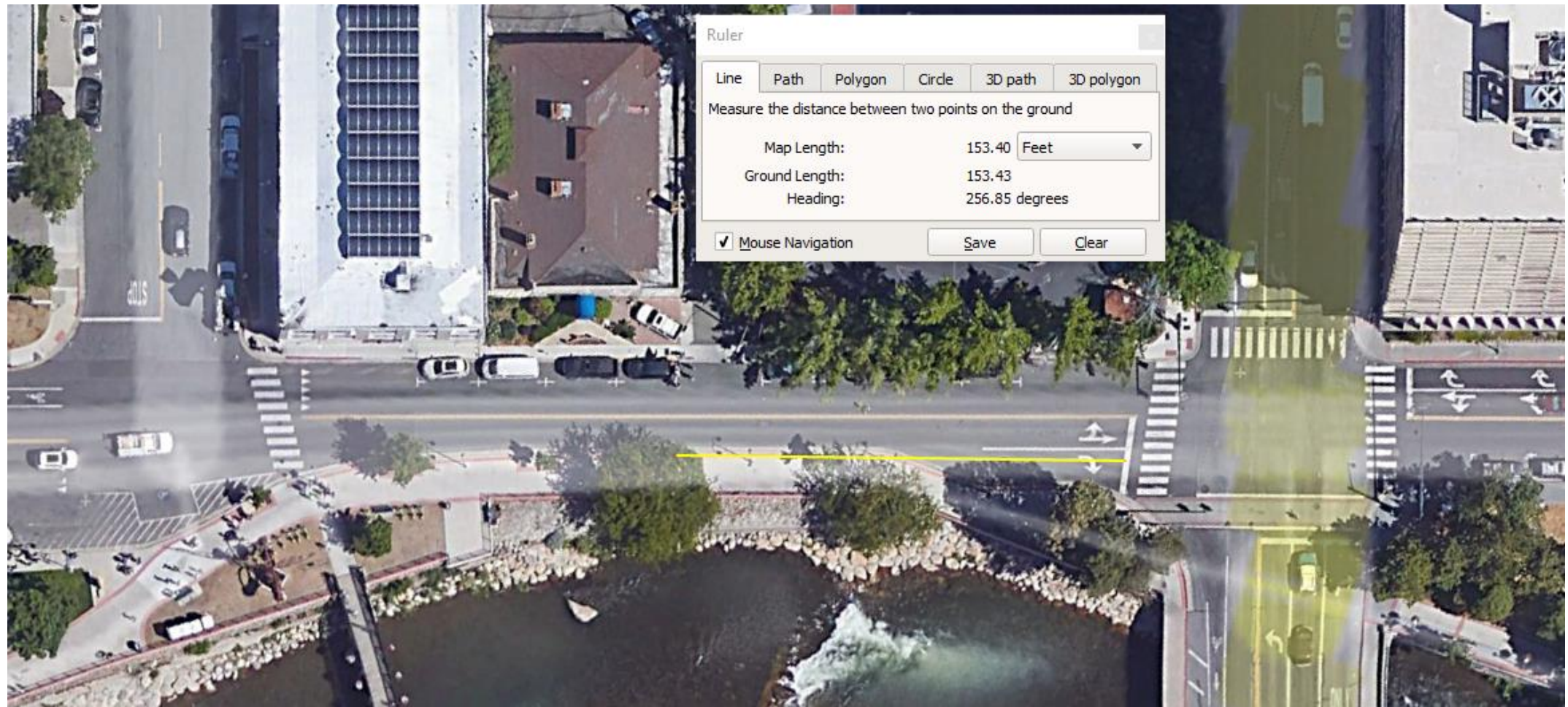
Queue Lengths Only (*Add Deceleration, Taper Length(s)*)



Eastbound Right

Model Results for 150 ft would require lengthening existing 50 ft turn pocket

To include in our project would Un-Do the Riverwalk Improvements done in 2003-ish



Queue Lengths

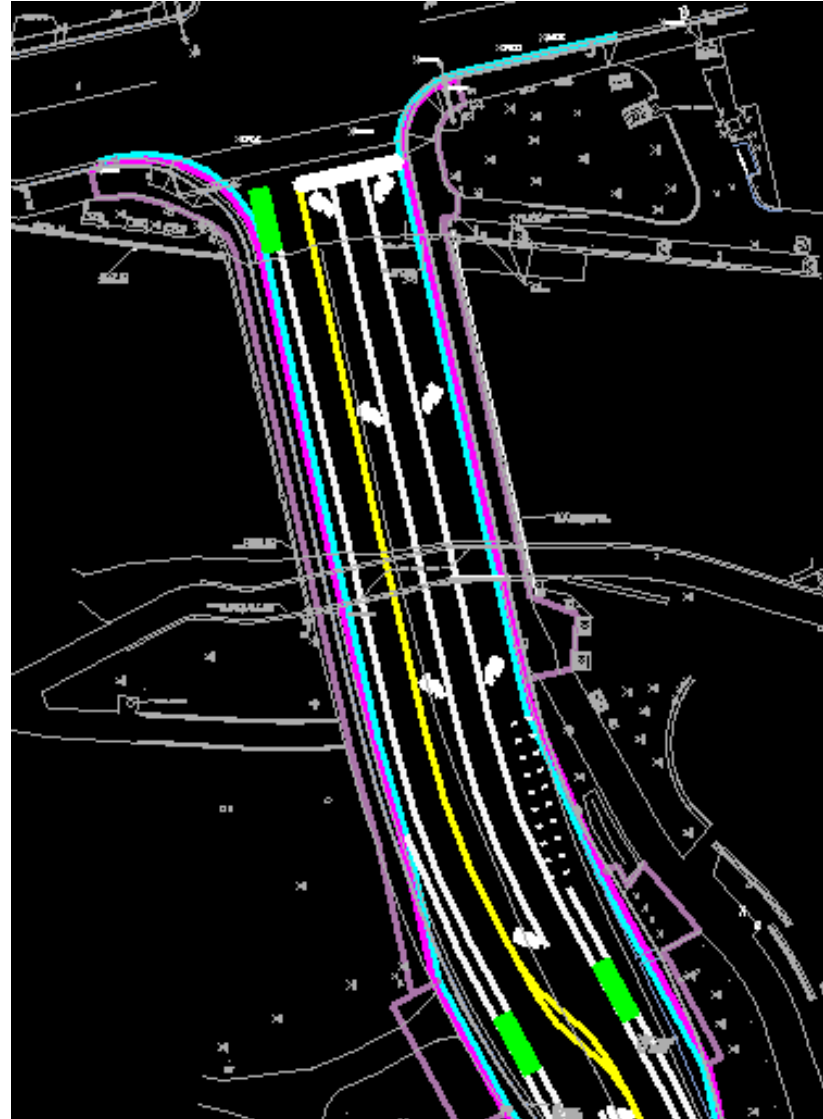
95th percentile for year 2050

Queue Lengths Only (*Add Deceleration, Taper Length(s)*)



Northbound Left
Design ~ 280'

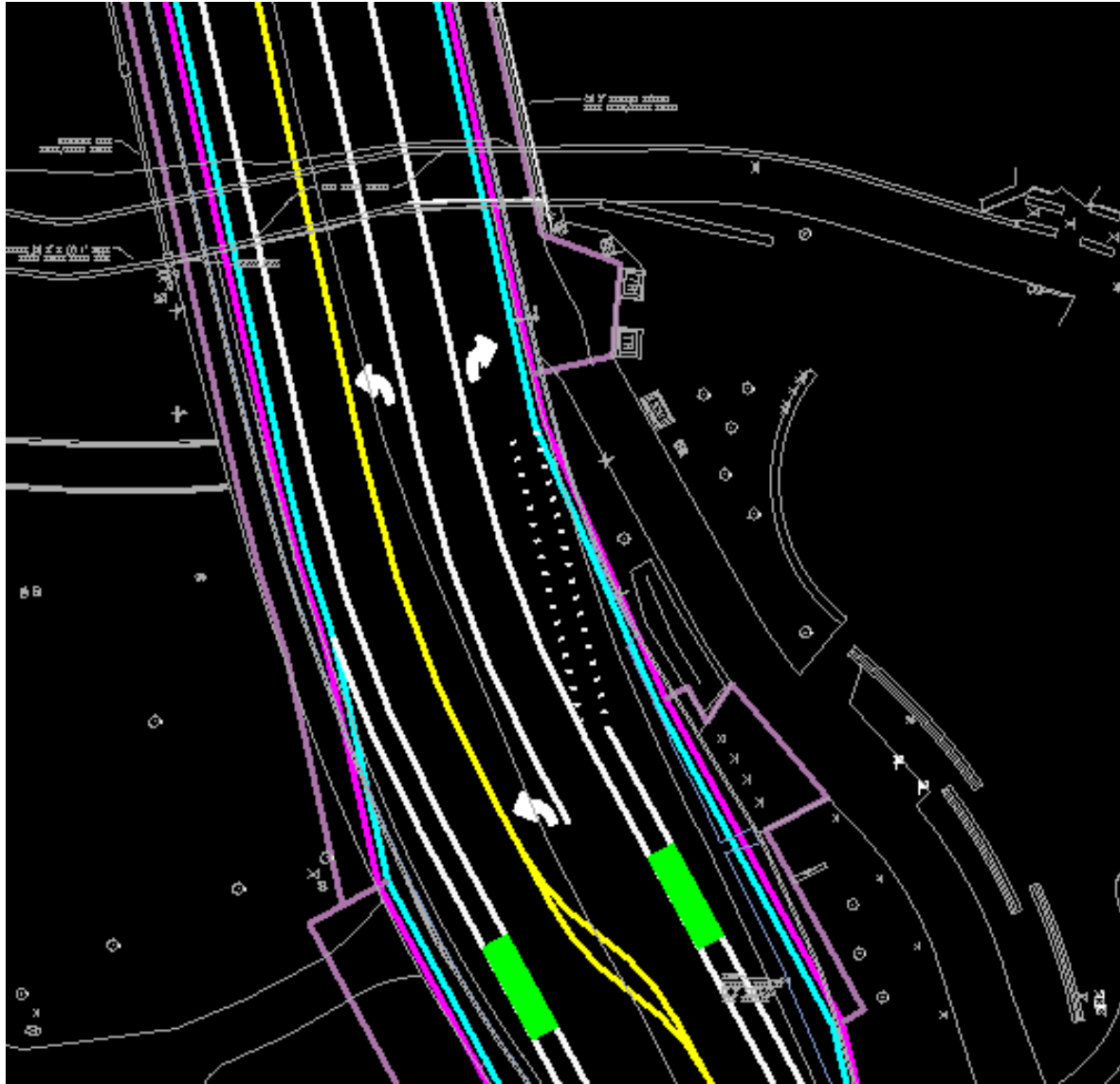
Required: 250' queue
min
+ 90' Stopping Sight Distance
(split available with SB Lt.)



Northbound Left
Design ~ 190'
@ end of bike lane shift

Required: maintain existing 175'

Roadway: Bike Lane Transition to Sharrow



- 60' Transition
 - 5' Dedicated Bike Lane + 11' Lane to 13' Sharrow Lane

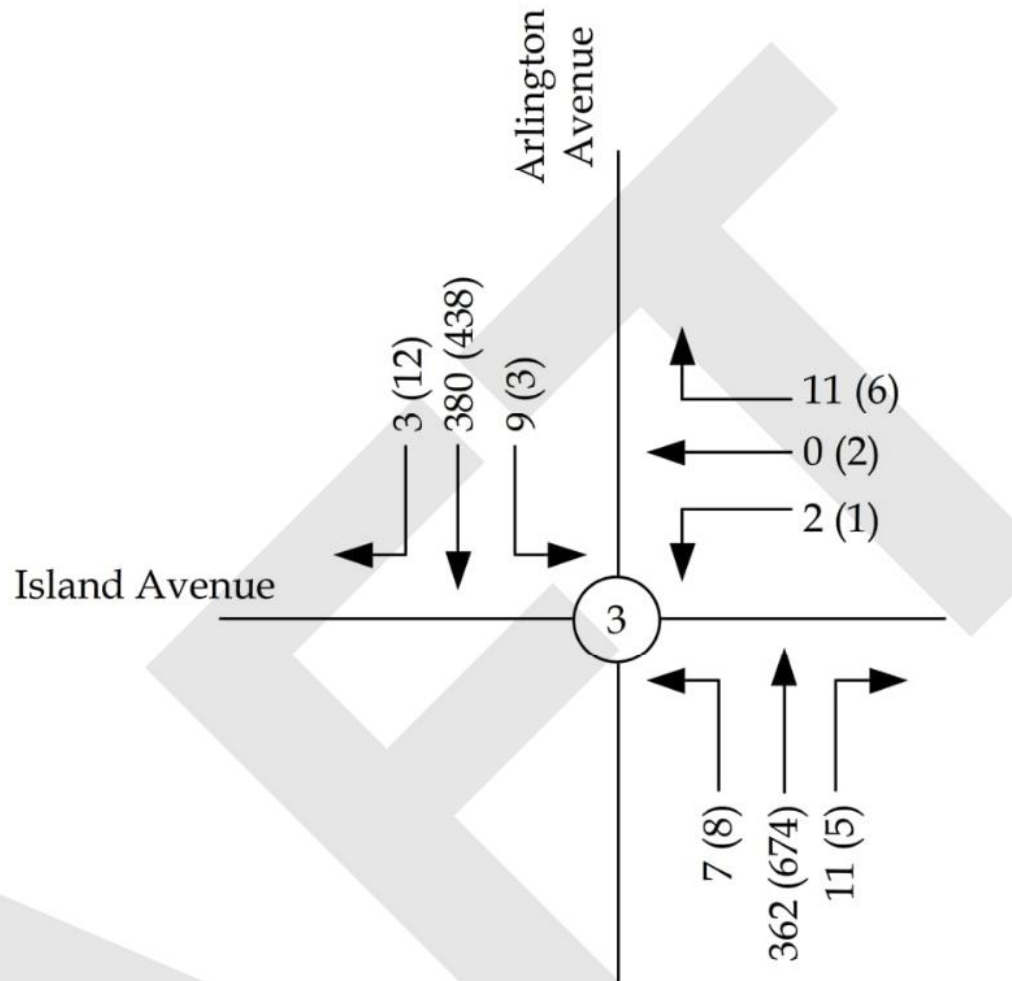
Traffic Counts

Traffic Counts Obtained March 29

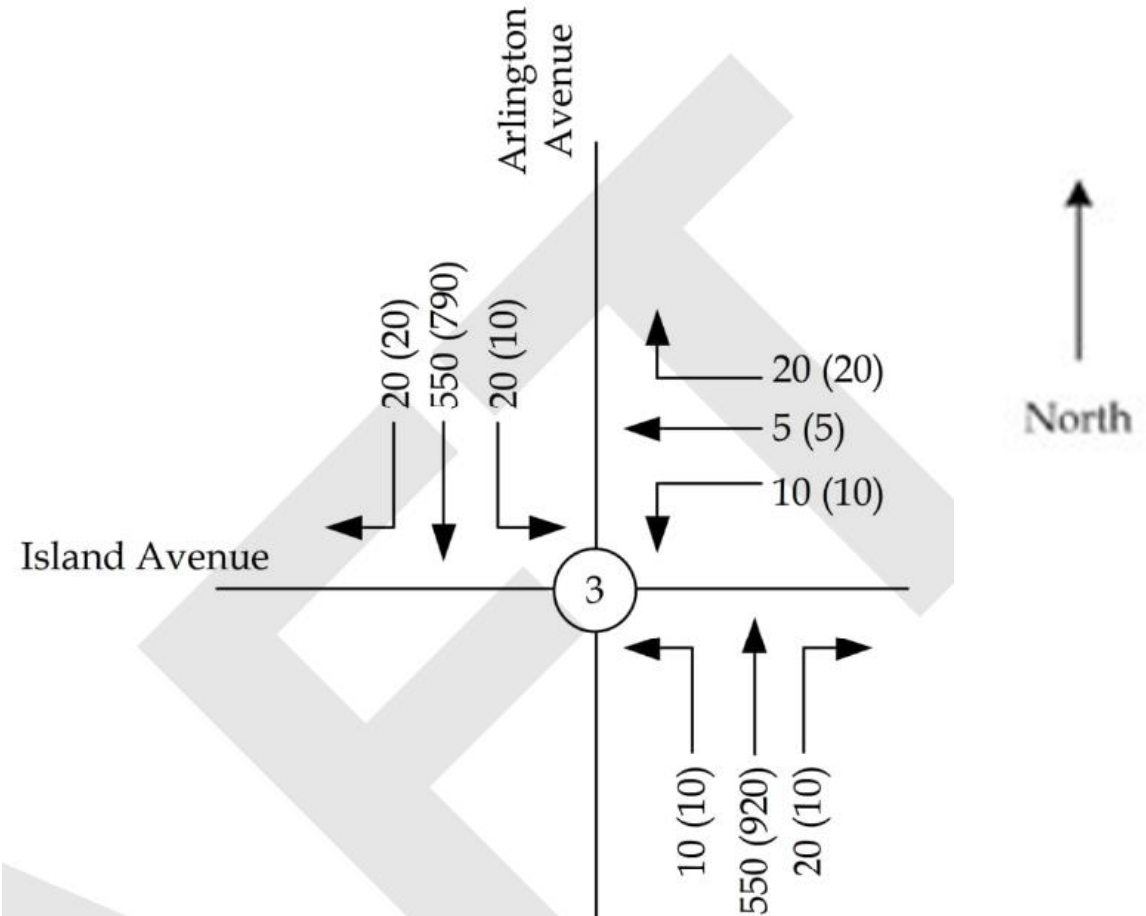
Arlington Ave. & Island Ave. AM Peak Hr. (PM Peak Hr.)



Existing 2022



Future 2050



Queue Lengths

95th percentile for year 2050

Queue Lengths Only (*Add Deceleration, Taper Length(s)*)



Southbound Thru/Right

Southbound Left

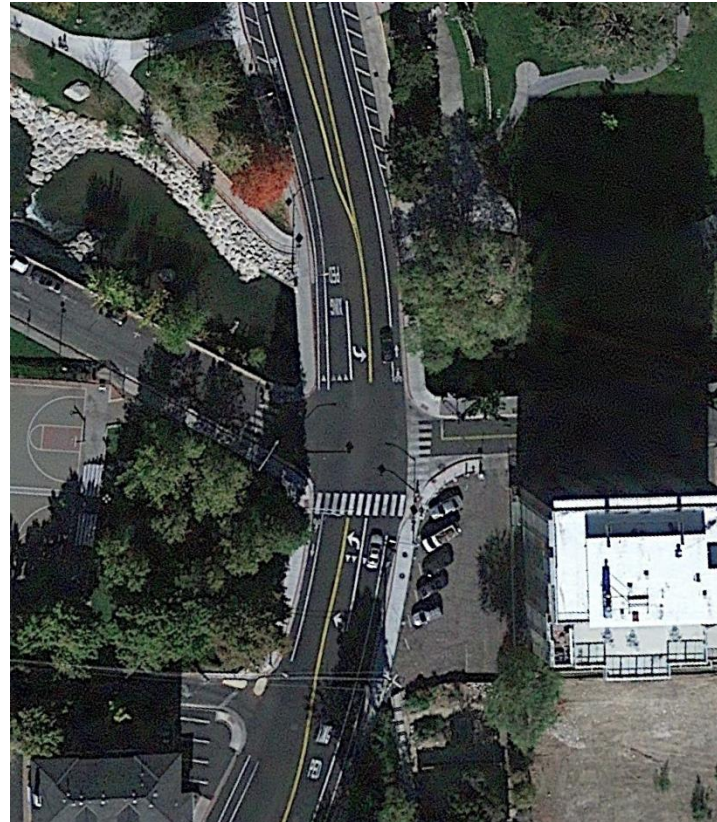
50' min (maximize; split delta with NB Lt)
(model doesn't account for unsignalized ped crossing)

Existing is ~ 50'

Westbound

Shared Left/Thru/Right

One-Way Westbound



Northbound Left

queue from analysis shorter than existing
(Ext. ~ 75')

Northbound Thru/Right

DRAFT: LOS



Table 2: Intersection Traffic Analysis Results (Delay and LOS)

Intersection	Approach/ Intersection	Delay in seconds (LOS)							
		Year 2022 - Existing Conditions		Year 2030 - Future Conditions		Year 2040 - Future Conditions		Year 2050 - Future Conditions	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Arlington Avenue and W 2nd Street (Signalized)	Entire Intersection	12.6 (B)	15.5 (B)	12.6 (B)	12.8 (B)	13.2 (B)	14.2 (B)	14.2 (B)	22.9 (C)
Arlington Avenue and W 1st Street (Signalized)	Entire Intersection	13.7 (B)	14.5 (B)	13.9 (B)	15.3 (B)	14.3 (B)	16.7 (B)	15.1 (B)	38.2 (D)
Arlington Avenue and Island Avenue (Stop-Controlled)	Critical Approach	12.5 (B)	17.9 (C)	13.3 (B)	20.8 (C)	14.9 (B)	26.6 (D)	20.8 (C)	59.9 (F)
Arlington Avenue and Eloise Avenue (Stop-Controlled)	Critical Approach	11.2 (B)	12.1 (B)	11.7 (B)	12.9 (B)	12.6 (B)	14.4 (B)	13.2 (B)	18.5 (C)
Arlington Avenue and Court Street (Stop-Controlled)	Critical Approach	18.4 (C)	26.4 (D)	21.7 (C)	38.7 (E)	28.4 (D)	99.9 (F)	40.2 (E)	> 500 (F)
Arlington Avenue and Ridge Street (Stop-Controlled)	Critical Approach	14.7 (B)	29.0 (D)	16.4 (C)	43.0 (E)	19.9 (C)	115.9 (F)	27.7 (D)	224.4 (F)
Arlington Avenue and Liberty Street (Stop-Controlled)	Critical Approach	18.0 (C)	37.7 (E)	22.2 (C)	77.4 (F)	36.0 (E)	219.2 (F)	124.7 (F)	> 500 (F)
Arlington Avenue and California Avenue (Signalized)	Entire Intersection	19.9 (B)	35.3 (D)	21.7 (C)	45.2 (D)	25.7 (C)	71.6 (E)	31.7 (C)	75.6 (E)

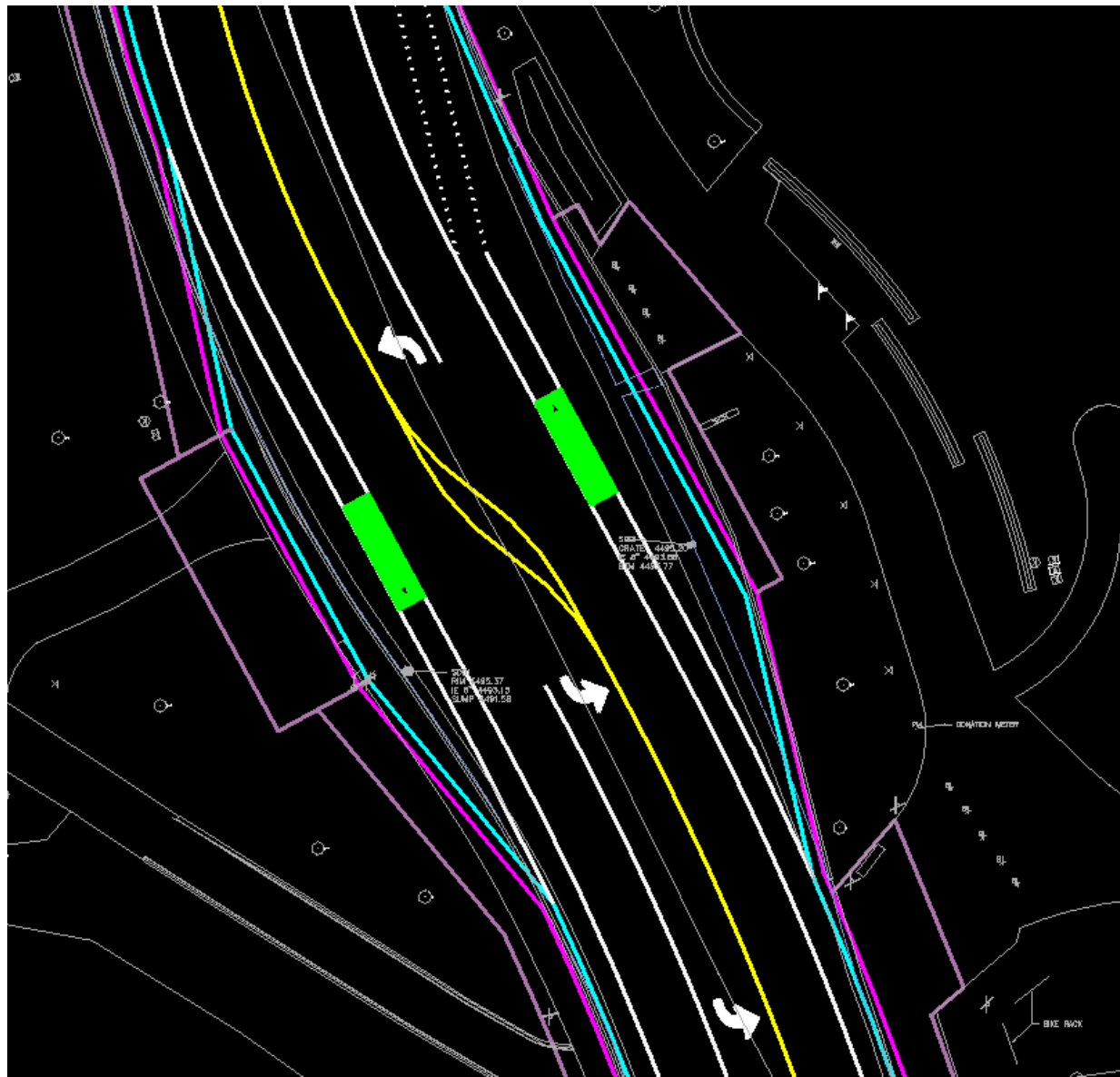
DRAFT: Speed & LOS



Table 3: Arterial Traffic Analysis Results (Speed and LOS)

Arterial	Arterial Speed in mph (LOS)							
	Year 2022 - Existing Conditions		Year 2030 - Future Conditions		Year 2040 - Future Conditions		Year 2050 - Future Conditions	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Northbound Arlington Avenue between California Avenue and W. 2 nd Street	13.8 (C)	11.8 (D)	14.6 (C)	13.8 (C)	14.5 (C)	12.3 (D)	13.7 (C)	9.8 (D)
Southbound Arlington Avenue between W. 2 nd Street and California Avenue	11.8 (D)	10.6 (D)	12.2 (D)	10.2 (D)	11.8 (D)	8.6 (E)	11.5 (D)	8.1 (E)

Roadway: Current Design Maintenance / Transit / Loading Zones



- West side
 - 50' w/ 50' transitions
 - Transit / Maintenance Access
 - 8' SW and additional 8' staging
 - 12' lane stripe to face curb
 - Maintain depressed curb access
- East side @ Amphitheater
 - 75' w/ 50' transition
 - Transit / Loading Zone / Maintenance Access
 - 5' sidewalk adj to road
 - Maintain ext. separated path
 - 11' lane stripe to lip gutter
- East side existing maintenance access
 - Maintain depressed curb access

Maintenance Access

- ▶ Existing Access From Arlington Into Park - To be Maintained
- ▶ Ensure Bus Stop amenities don't preclude access



Roadway: Prior to Road Diet

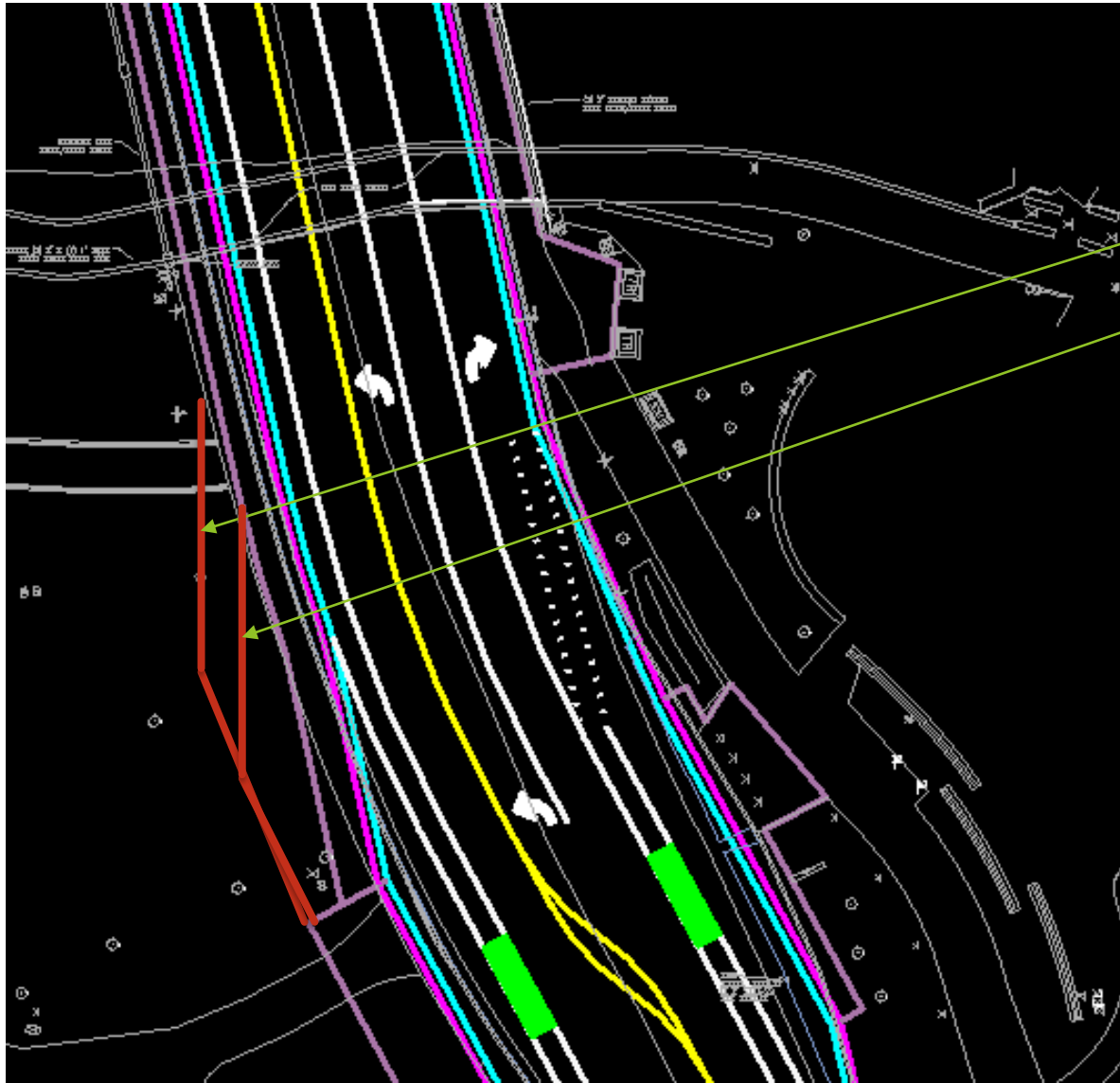


Roadway: Current



Roadway:

Provide Additional Loading Zone on West?



- ▶ Provide Additional 50'
- ▶ or additional 25' (avoid SW connection) of Loading Zone / Transit Stop?
- ▶ Don't impact bridge

North Bridge Design

- ▶ North Bridge Width
- ▶ Existing SD Facilities at North Abutment
- ▶ Sharrow Lane



Roadway Discussion/Questions



Hydraulics



1997 Flood
Arlington Avenue Looking Northwest

Photo Credit:
National Weather Service

Hydraulics:

- ▶ Design Criteria:

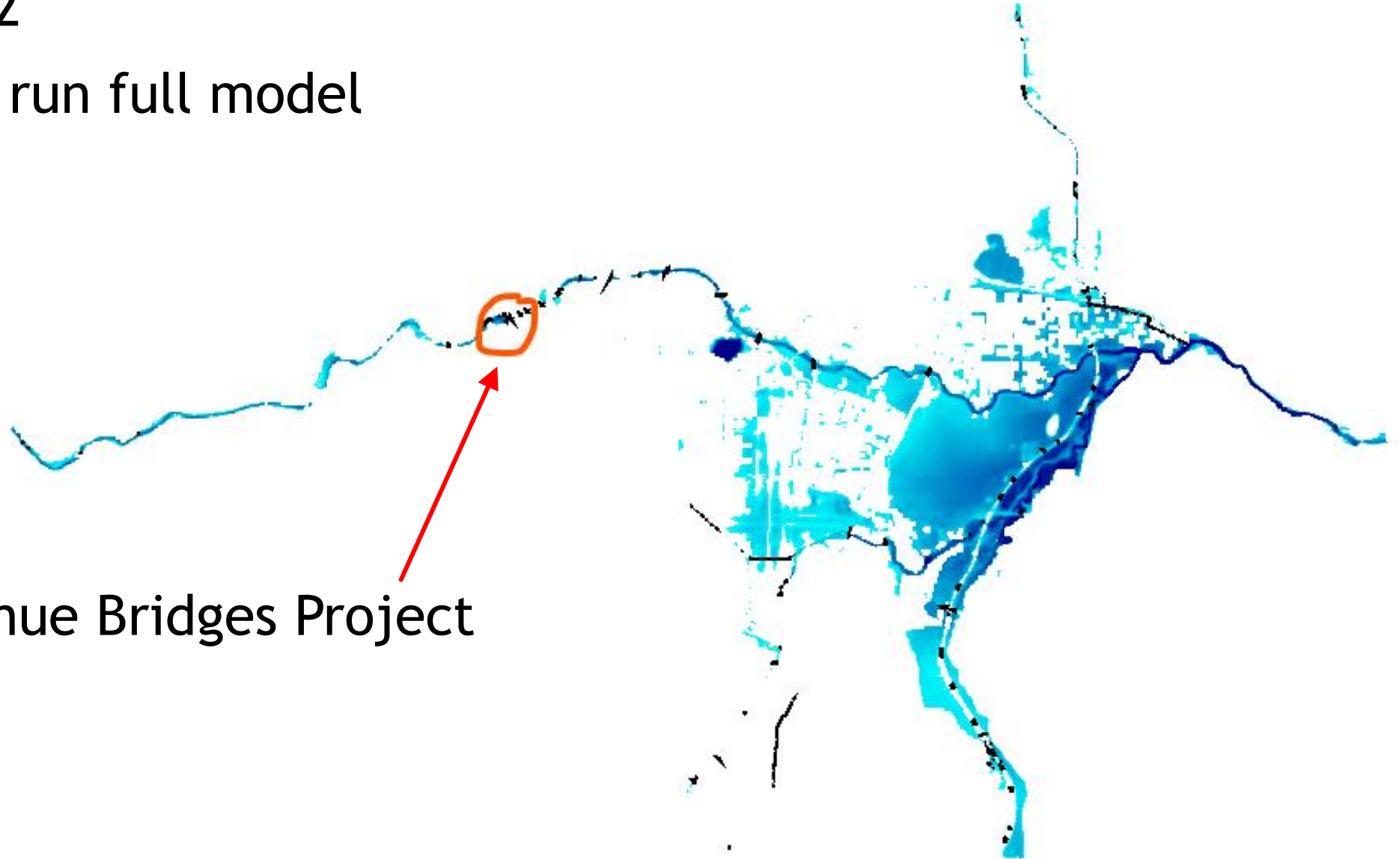
- ▶ Required to Analyze 2 events:

- ▶ 14,000 cfs per CTWCD for 408 Permit

- ▶ 100-year storm per FEMA requirements (City of Reno, TRFMA)

TRFMA 100-Yr Model Extents:

- ▶ HEC-RAS 6.2
- ▶ 16 hours to run full model



Arlington Avenue Bridges Project

Hydraulics:

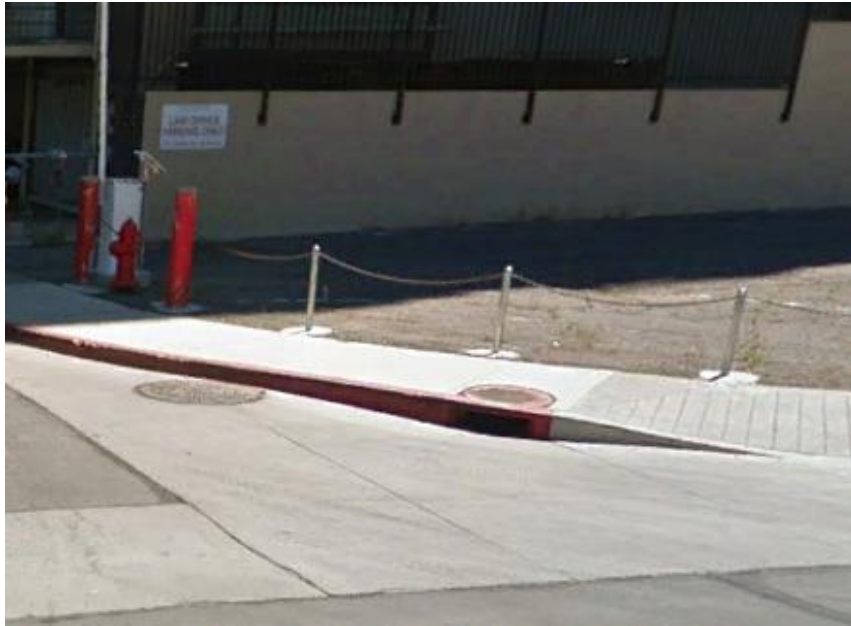
- ▶ On-Site Design Criteria:
 - ▶ 5-Year Storm Event
 - ▶ ½ Adjacent Travel Lane
 - ▶ No Pressure Flow
 - ▶ Minimum Pipe Size = 12-inch

- ▶ Inlets require oil/water separator
as Truckee River is part of the MS4 Permit

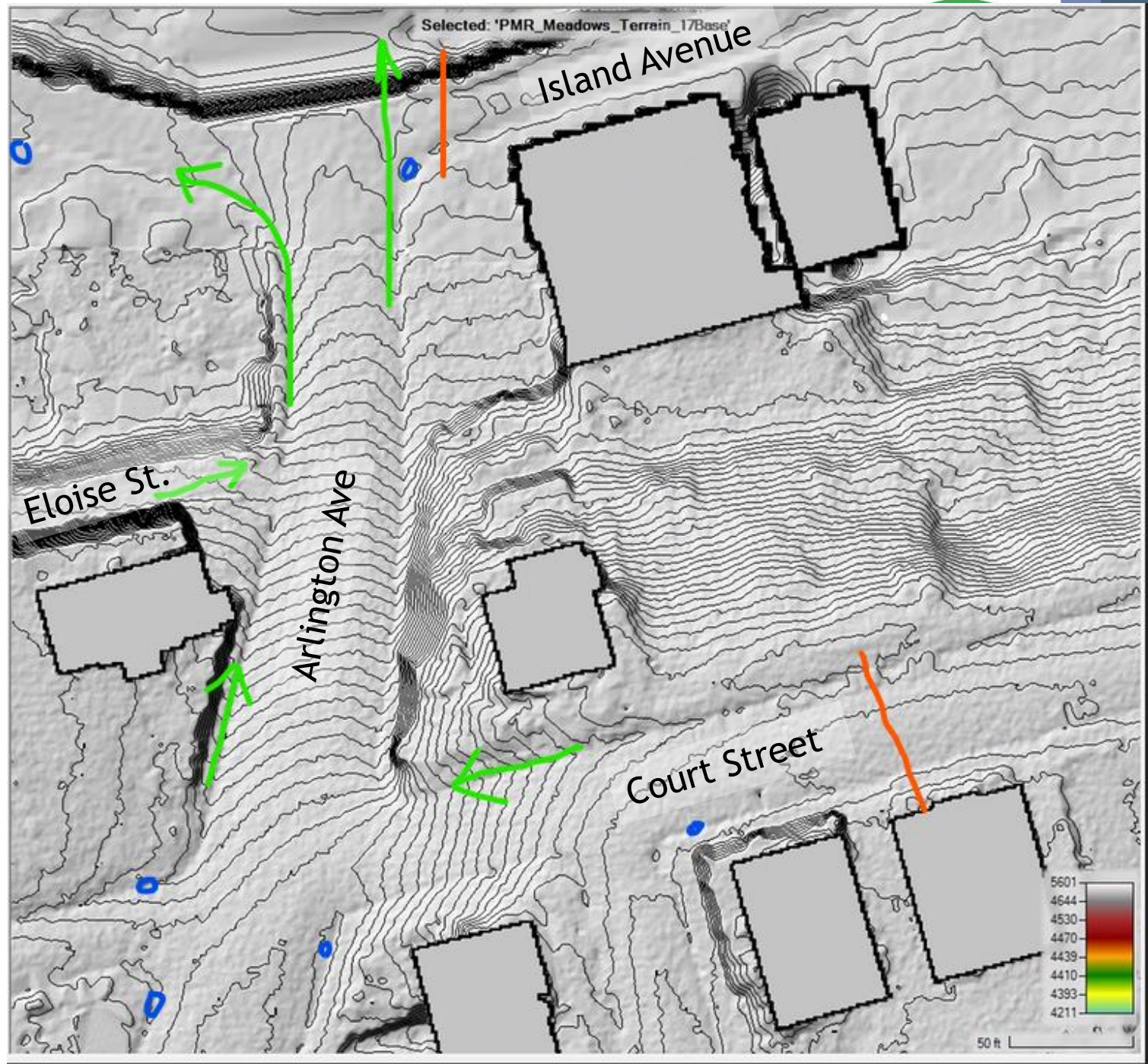
Hydraulics:

Existing Inlets

- ▶ SE corner of Arlington/Island



Key:
Blue dots: catch basins
Green arrows: flow directions
Orange lines: high points

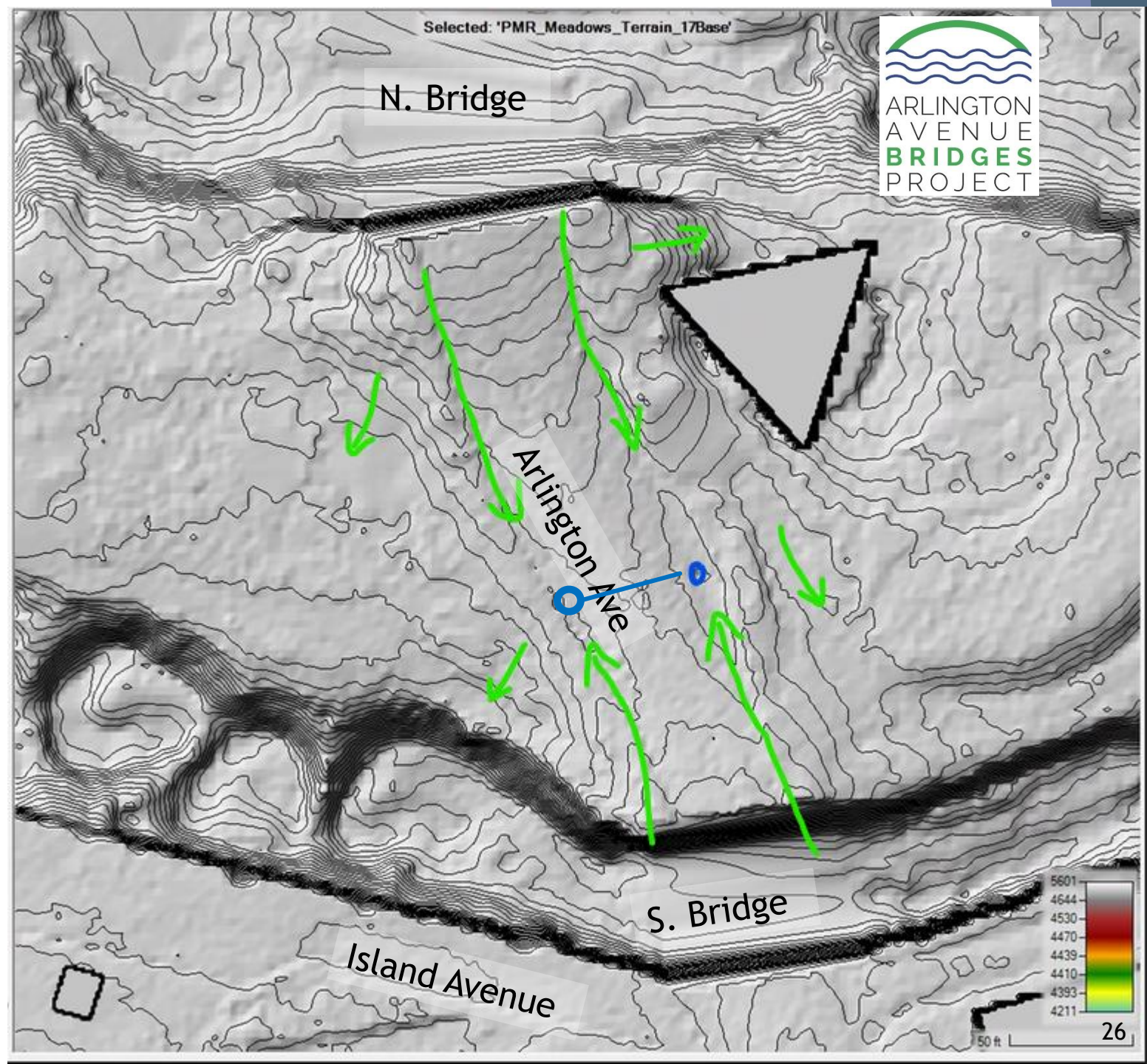


Hydraulics:

Existing Inlets

- ▶ Mid-Block Arlington Ave.

Key:
Blue dots: catch basins
Green arrows: flow directions
Orange lines: high points



Hydraulics

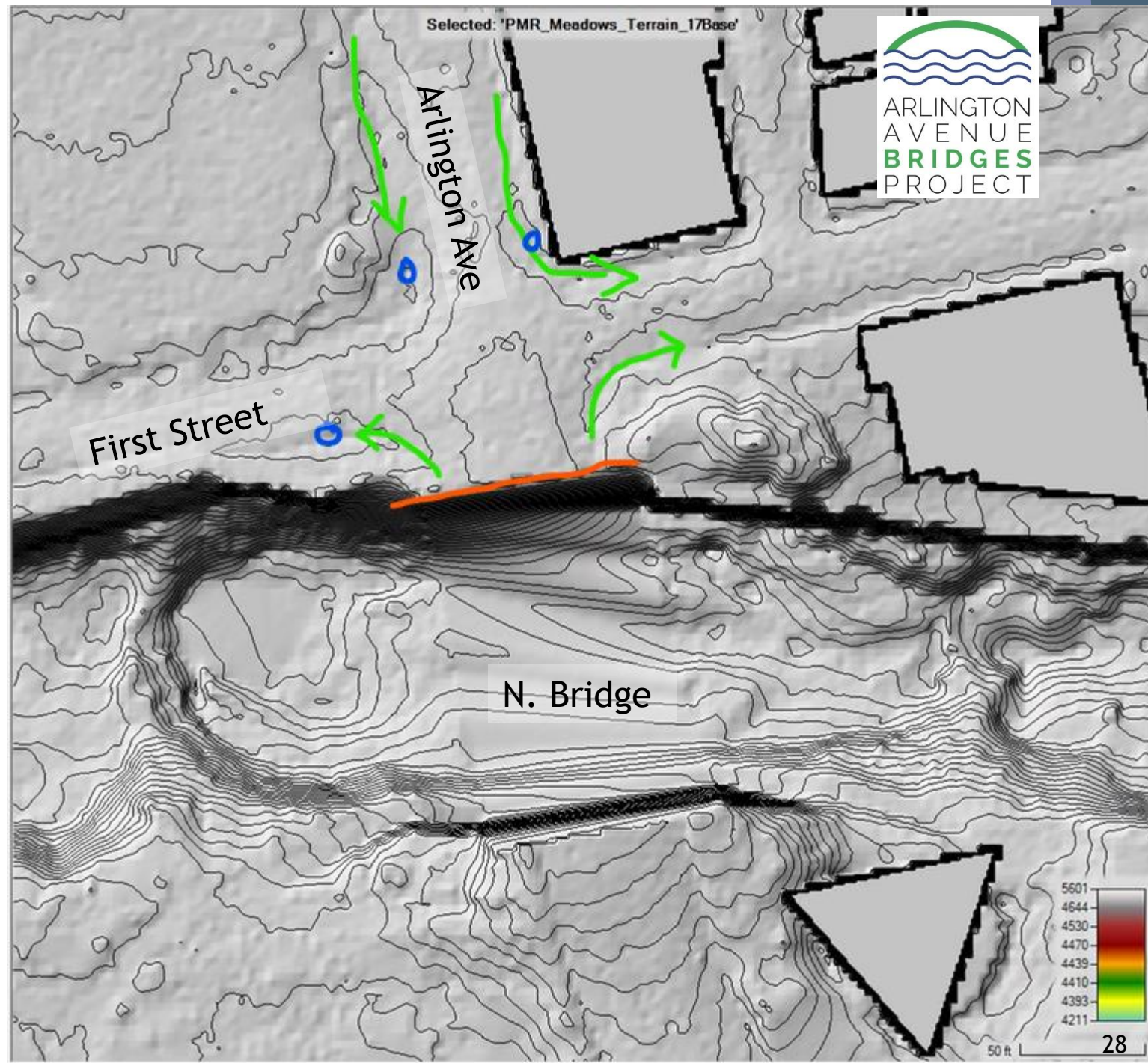
- ▶ On-Site Drainage
 - ▶ Two Existing Inlets Mid-Block Arlington



Hydraulics:

Existing Inlets

- ▶ First St. / Arlington Ave.



Hydraulics:

Existing Inlets

SW corner of Arlington Ave/First St

Inlet along First Street w/in Rt Turn Lane



Hydraulics:

Existing Inlets

NW corner of Arlington Ave/First St



NE corner of Arlington Ave/First St



Hydraulics:



Drainage Report Format

TMRDM lists required drainage submittals as a Technical Study (to include a Flood Plain Study).
Exceptions subsection allows the COR to approve or modify the requirements, as appropriate.

Recommendation:

Hydraulic Design Memorandum

- * Replacement of two existing inlets mid-block Arlington
- * Hydraulic modeling for the two bridges

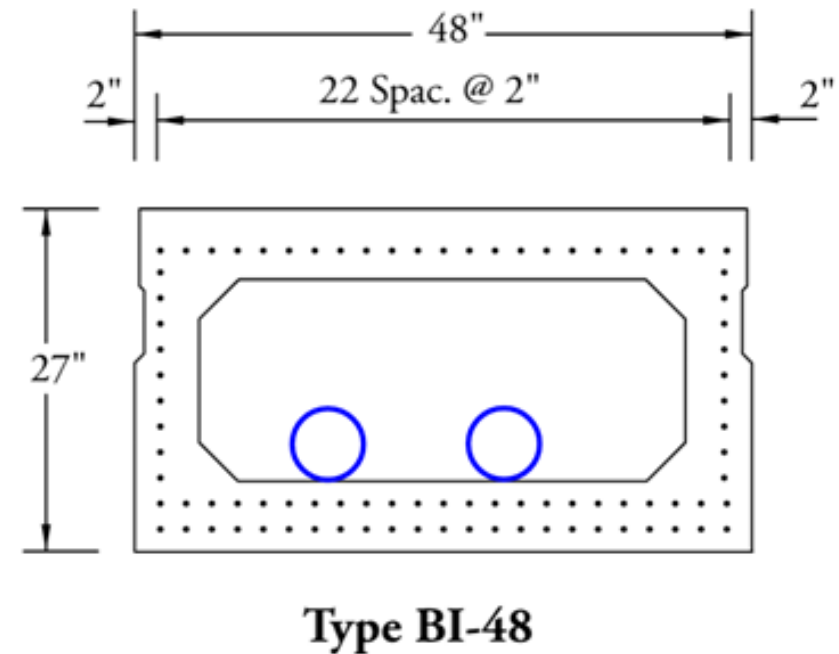
Hydraulics

► Open Discussion



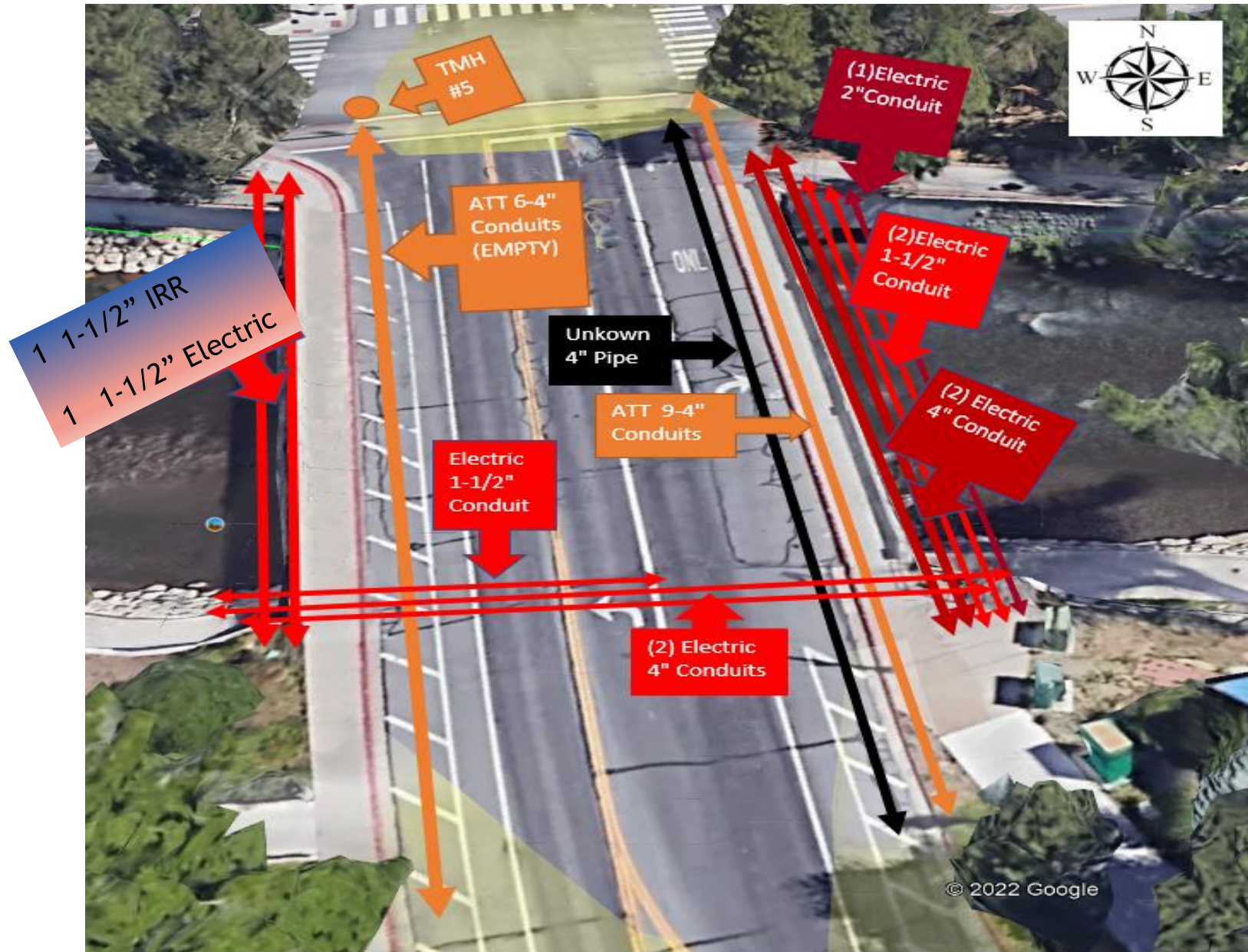
Utilities

- ▶ Preliminary cross section for side-by-side PC/PS box beams
- ▶ Fabricated with conduits in the inner void space for utilities
- ▶ Access at bridge ends to push/pull utilities through
- ▶ Not subject to floatation/uplift

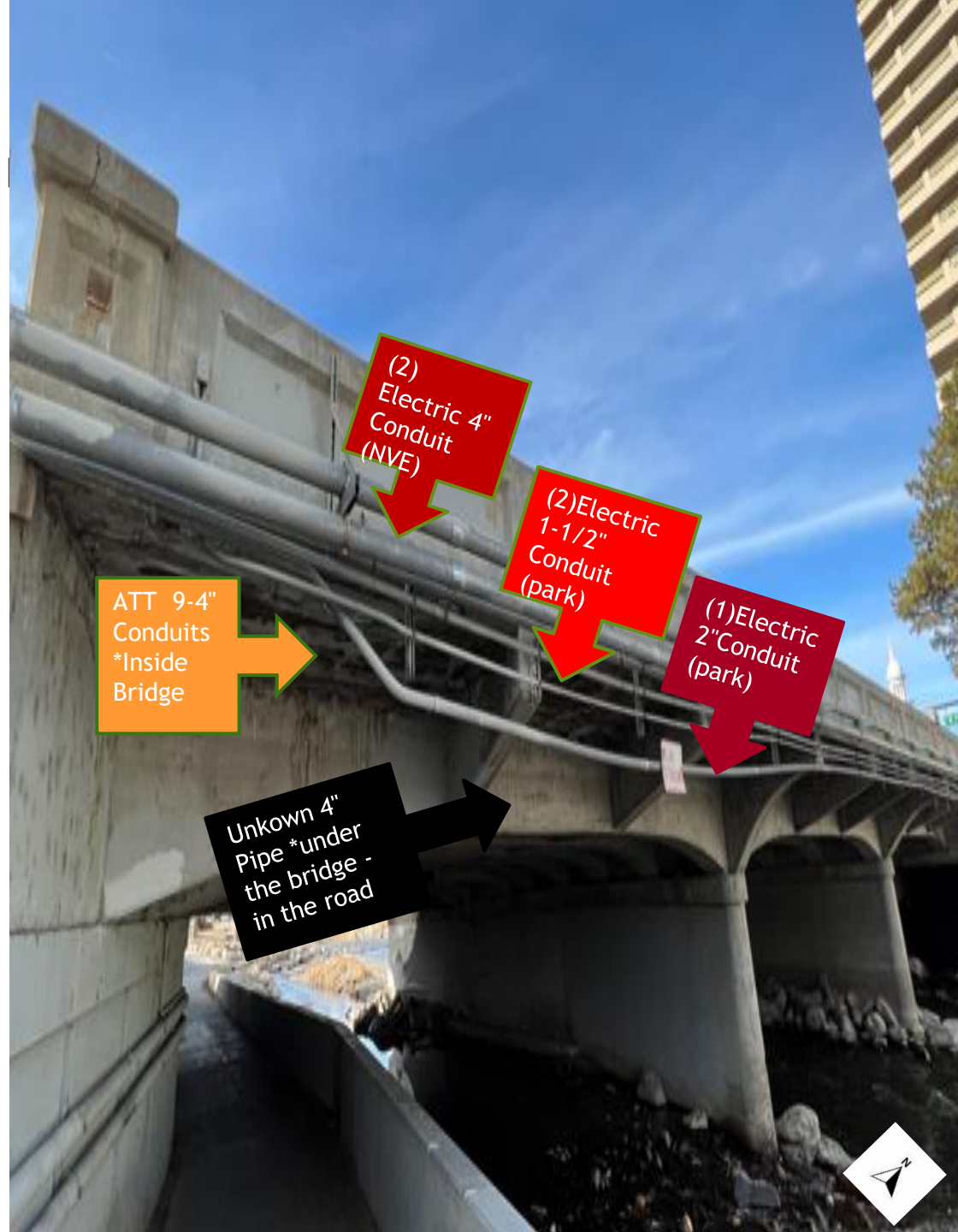


Utilities

► North Bridge - Existing



Utilities



Utilities



Unkown 4"
Pipe *under
the bridge -
in the road

ATT 9-4"
Conduits
*Inside
Bridge



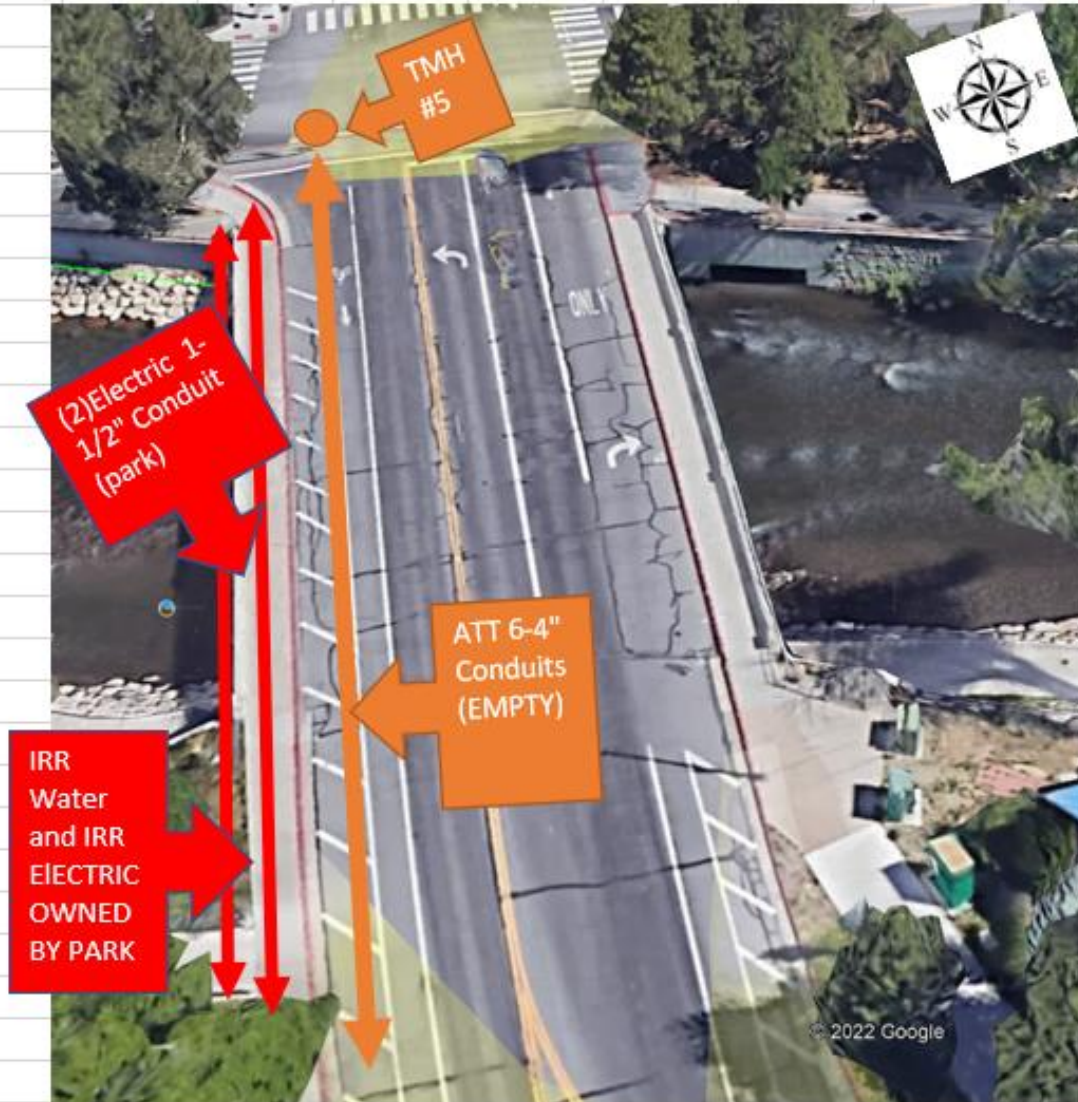
Utilities

- ▶ North Bridge - Existing West Side and Along Path on South Abutment



Utilities

► North Bridge - Existing Underneath



Utilities

- ▶ North Bridge - Existing West Side and Along Path on South Abutment



Utilities

► South Bridge



Utilities

► South Bridge



Utilities

► South Bridge



Environmental Updates



- ▶ Section 408 Permit
 - Geotech Boring for North Bridge Pier requires 408 Permit - Submitted and Review Fees Paid
 - Overall 408 Permit Application
 - Coordination w/ NDOT for Programmatic Agreement for Section 106 (Cultural) - NDOT working with Tribes
 - Section 7 (Endangered Species) - Biological - coordinating with Fish and Wildlife

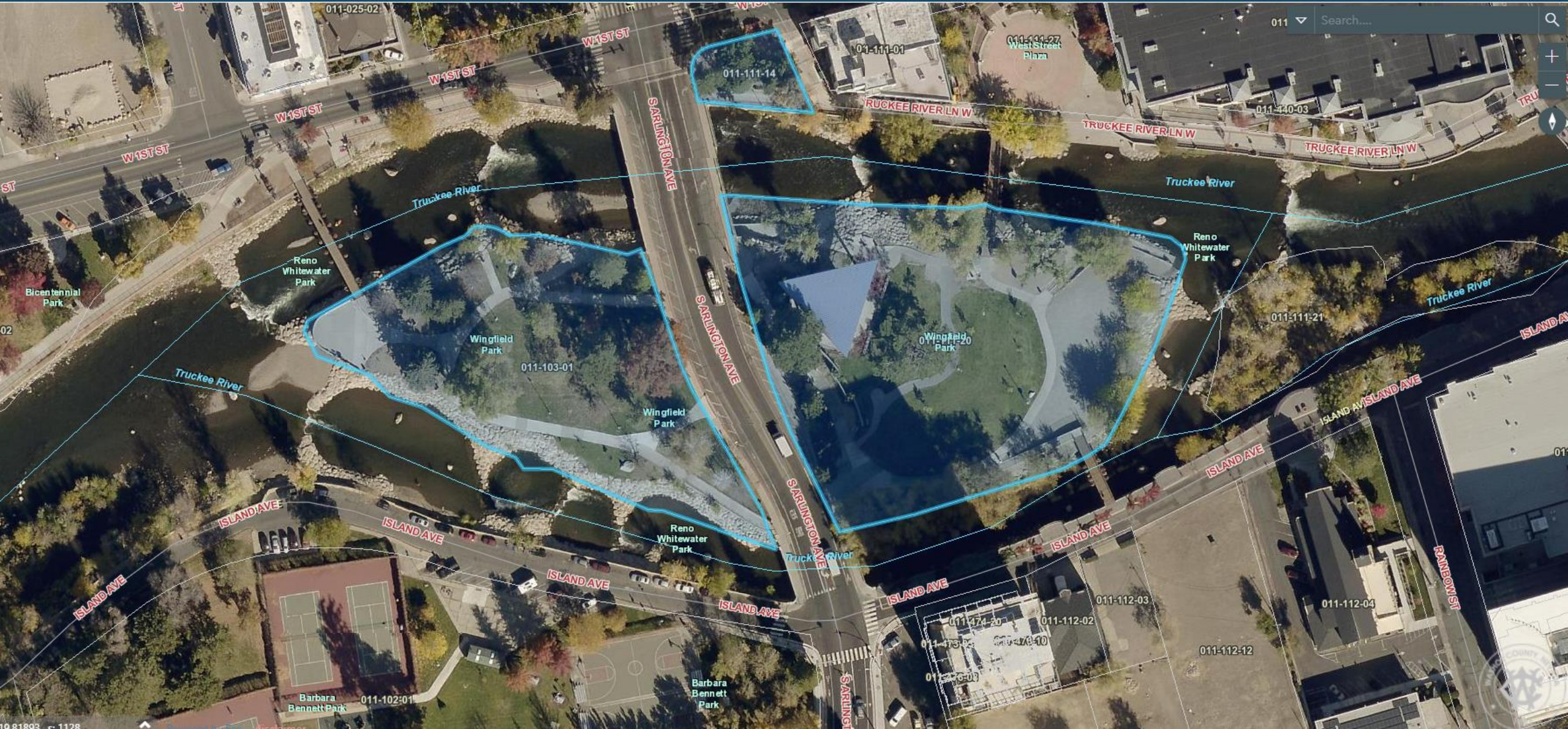
- ▶ Section 4(f)
 - Met with City to discuss existing 4(f) facilities
 - Need to determine 4(f) applicability of whitewater park; discuss with FHWA
 - Discuss construction staging/4(f) clearance options

- ▶ NEPA
 - preparing resource technical memos after 30% design

Right of Way

3 City of Reno Parcels

Assume Right of Entry - No Temp Easements



Project Schedule



6/27 - Submit 30% Plans to Agency

6/27 to 7/29 Agency Review

Mid July – Public Meeting – In Person

Date	Task	Deliverable	Dependencies	Notes	Meeting	Other
2/14/2022	Bathymetric Survey, Drone Flight					
2/21/2022	Update Existing Hydraulic Model	Design Criteria				ASWG #1 - Review of Modern Art Deco Consensus - All Ideas w/in theme
2/28/2022				NEPA Scoping Meeting		Memo
3/7/2022	Review Geotech Report	Alignments & Typ Section				DRC Mtg - Review Design Criteria; Existing Hydro Model Results
3/14/2022	Proposed Hydraulic Model Results	Bridge / Roadway Profile Coordination	Sheet Layout	Coordinate with CTWCD to discuss project		ASWG #2 - Ideas and Discussion
3/21/2022				Coordinate with USACE discuss submittal reqs.		
3/28/2022					MEETING	
4/4/2022						
4/11/2022						
4/18/2022						DRC Mtg - Maintenance Access To River; South Under Bridge
4/25/2022		Onsite Drain, Elect, Utilities, Etc.				ASWG #3 - Finalize 3 choices for 30%
5/2/2022						Memo Memo Memo
5/9/2022						DRC Mtg - All Discipline Discussion
5/16/2022			Plan Sheet Drafting			
5/23/2022		Drainage Report	Quantities, Cost Estimate	Design Impacts to		
5/30/2022	Memorial					
6/6/2022	Submittal Draft					
6/13/2022	Internal QC	PCSG Review		SHPD		
6/20/2022	Final Drafting		Develop Build-A Bridge			Coordinate with USACE discuss submittal reqs.
6/27/2022	Submit 30%					DRC Mtg
7/4/2022	4th July					
7/11/2022	Agency Review					MEETING
7/18/2022	Constructability, Risk, Value Eng. Workshop			Submit 408 Pa		
7/25/2022						DRC Mtg
8/1/2022						
8/8/2022	30% Comment Review Meeting					
8/15/2022						DRC Mtg

- Prepare Assignments:
1. Vicinity Map
 2. Adj. Land Uses
 3. Prog. Areas
 4. Pre-Proj. Condi.
 5. Property Owner
 6. Prog. Plans
 7. Geotech
 8. Hydraulic Impact Analysis
 9. Construction Methods
 10. Vegetation Removal/Disturbance
 11. River Channel Disturbance
 12. Project Schedule
 13. Env. Document and Agency Coordination
 14. NEPA

Preparation

Record

Public Mtg #1

30-Day Public Presentation Open For Comments

Venue Reservation

Public Mtg Notices

Presentation Preparation

In-Person & Recorded

Live - Public Mtg #2

30-Day Public Presentation Open For Comments

RTC remodel will be complete

Aesthetics Vote, Build-A-Bridge, Bridge Type Selection Results;

Housekeeping



- ▶ SharePoint Site for Meeting Notes, Etc.

This screenshot shows the SharePoint interface for the 'Arlington Ave Bridges NEPA and Design' site. The top navigation bar includes the 'Jacobs' logo, 'SharePoint', and a search box. The left sidebar lists navigation options: Home, Calendar, Notebook, and a numbered list of project sections. The main content area displays the '3. Stakeholder Coordination' section with a table of folders.

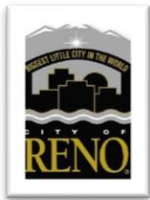
Name	Modified
01 Aesthetics Stakeholder Working Group	March 2
02 Design Review Committee	March 2
03 Agency Involvement	March 2

This screenshot shows the SharePoint interface for the 'Arlington Ave Bridges NEPA and Design' site, specifically within the '01 Aesthetics Stakeholder Working Group' folder. The top navigation bar is identical to the previous screenshot. The left sidebar lists navigation options, with '3. Stakeholder Coordination' selected. The main content area displays the folder structure for '01 Aesthetics Stakeholder Working Group'.

Name
_ ContactList
220225 ASWG Meeting #1
220325 ASWG Mtg #2
220506_ASWG_Mtg#03

Thank You for Participating!

jtortelli@rtcwashoe.com



*Building A Better Community
Through Quality Transportation.*
rtcwashoe.com



PK Electrical, Inc.

