



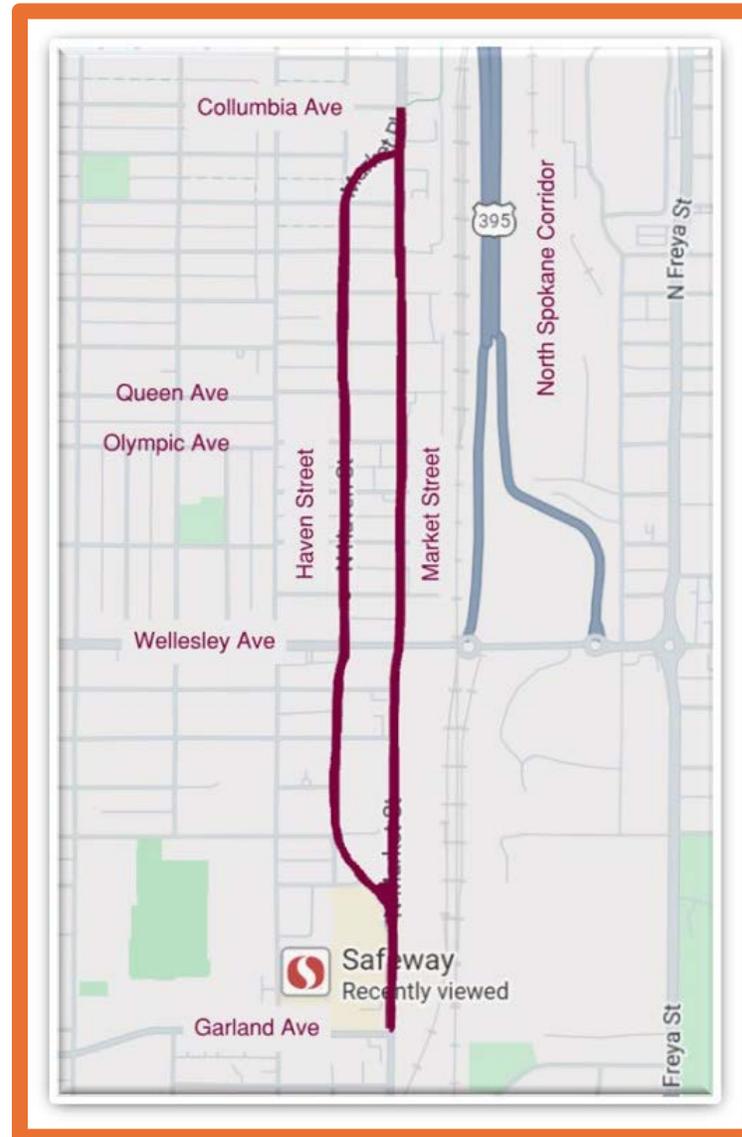
Market Haven Two-Way Street Conversion

Gonzaga Senior Design EN26-20

Eider Schantz, Karlynn Kenny, Baila Burnam, Alex Willis

Introduction

- What is Senior design?
- Client: Jesse Bank with the North East Public Development Authority
- Project description:



Goal: Calm traffic and improve pedestrian and cyclist safety to support a balanced, connected, and vibrant community corridor.



Objective: Design a more community-oriented environment for Hillyard with 2-way traffic flow.

Use of traffic simulator to evaluate impacts of 3 design alternatives

Conduct community meetings to engage citizens and business owners

Demonstrate project feasibility to stakeholders

Data Collection and Community Outreach

2D Design Alternatives

Modeling

Business District Improvements

Future Work

Neighborhood Council Meeting

- The community values slowing speeds and improving pedestrian facilities and E-W connection
- Wants **community space**

Business Focus Group Meeting

- Concerns regarding high vehicle speeds, parking availability, and lack of pedestrian/bike facilities
- Wants the business district to be a **destination** that people visit and stay a while



Pedestrian Improvement Focus Area

Market/Haven from Queen Street to Olympic Street

- Heart of Hillyard Business District
- Limited Scope



Haven Street SRHD Walk Audit Route



Market Street SRHD Walk Audit Route

SRHD Walk Audit

Perceived Pedestrian Friendly Scale

Haven Street



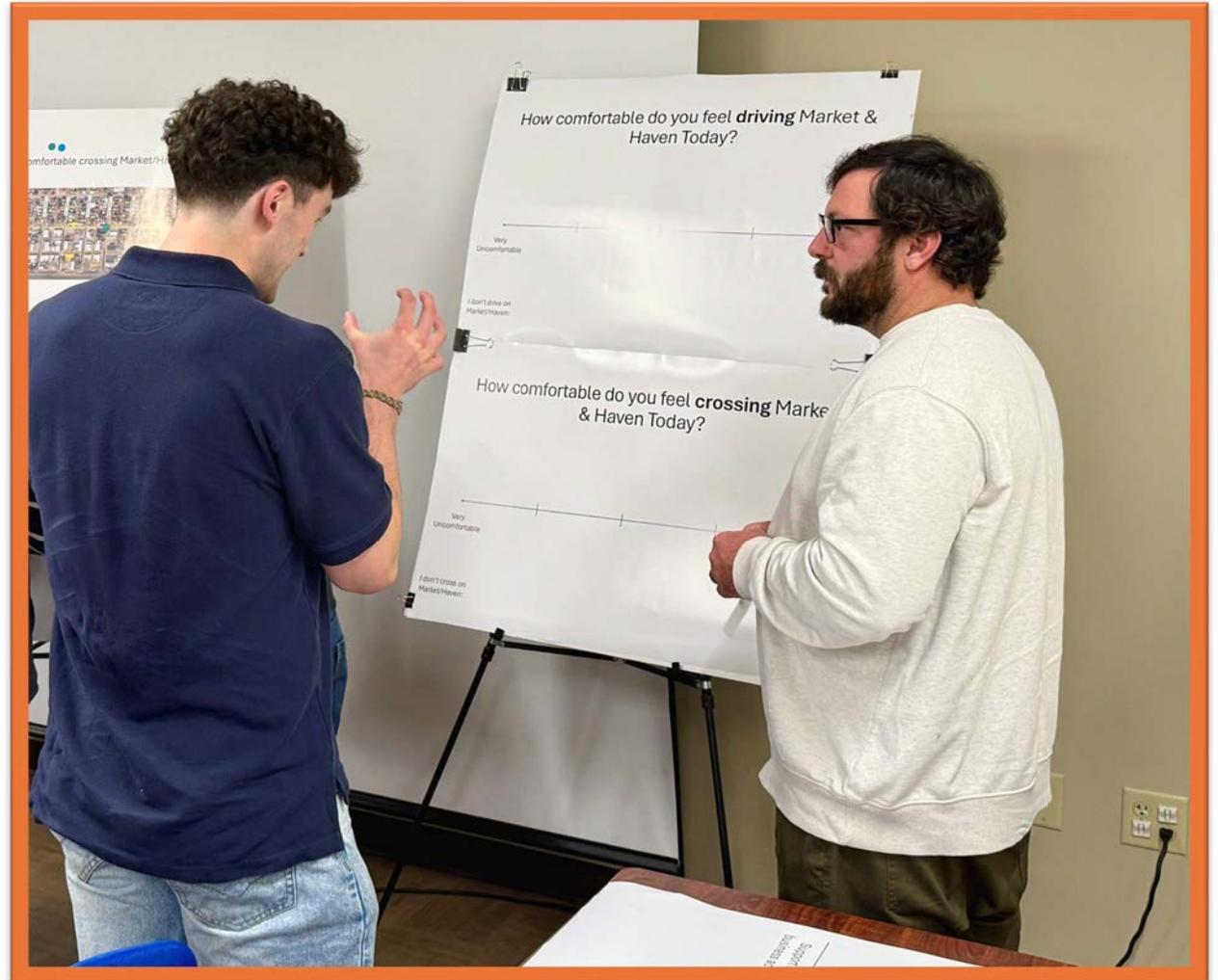
Market Street



Ongoing and Future Outreach

Outreach has confirmed project objectives

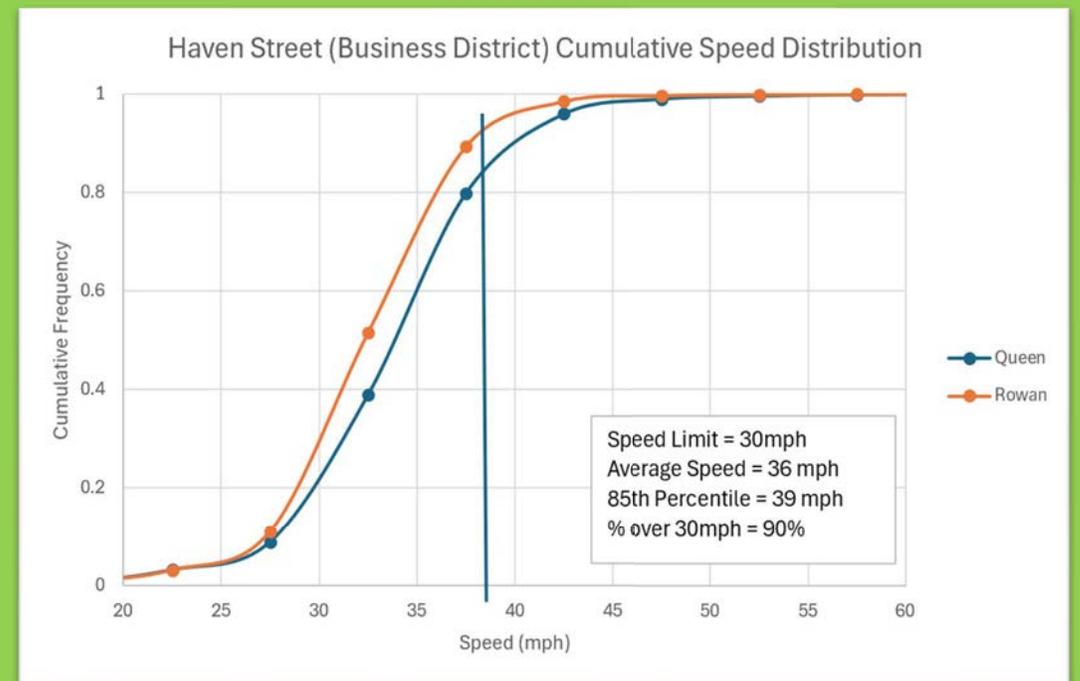
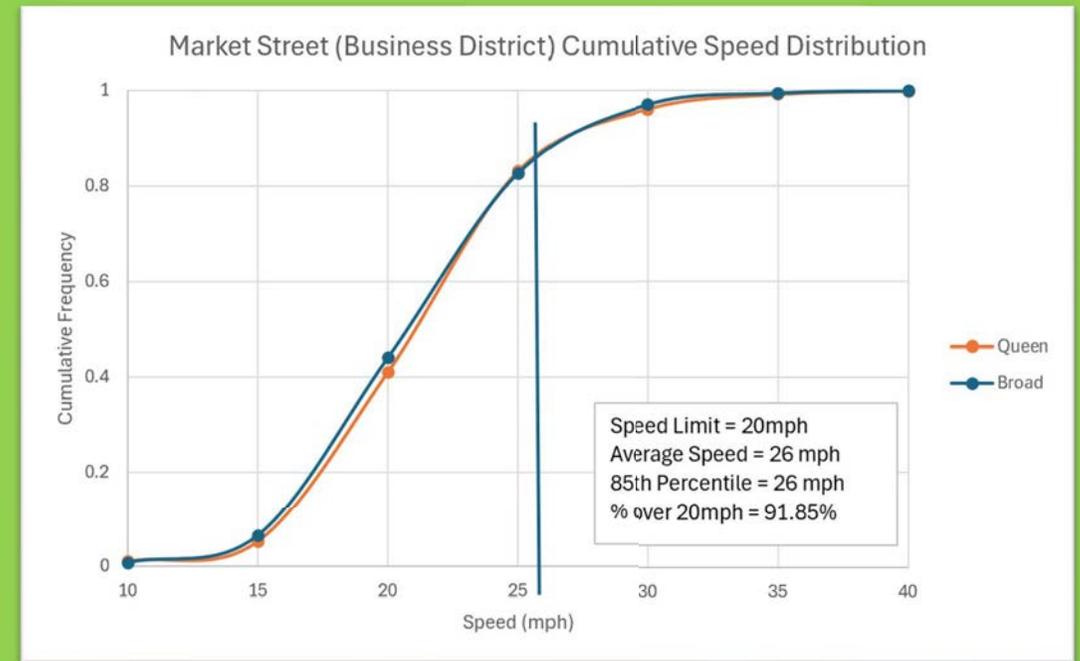
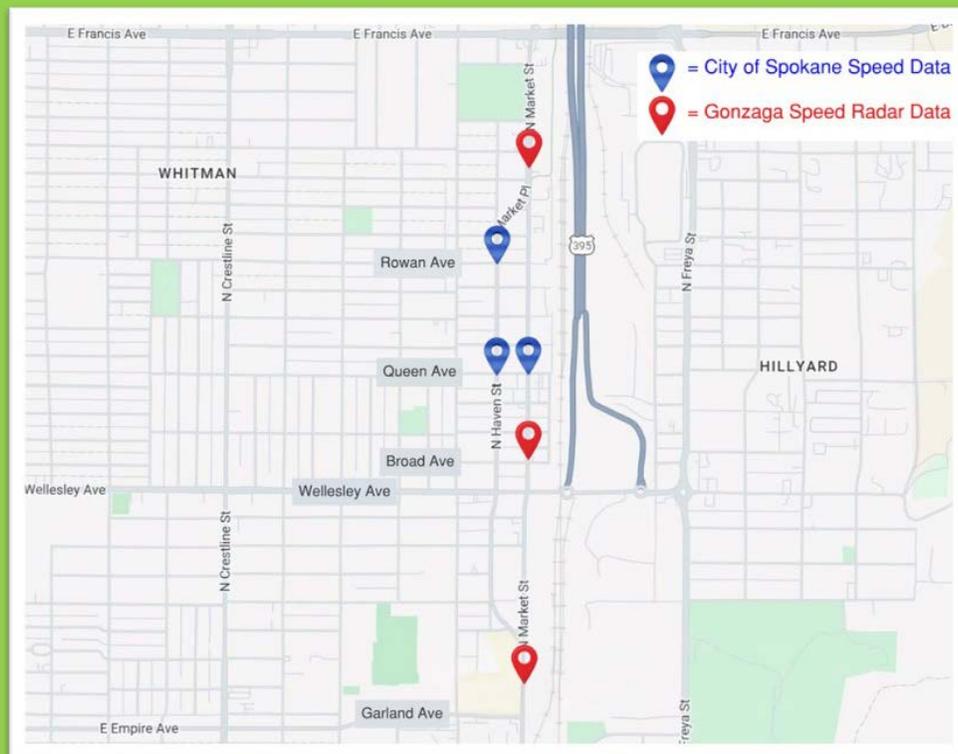
- Continuous meetings/check-ins with client, Jesse Bank
- City of Spokane Transportation Commission (March 18th)
- Hillyard Community Meeting (April 9th)



Speed Data Collection & Analysis

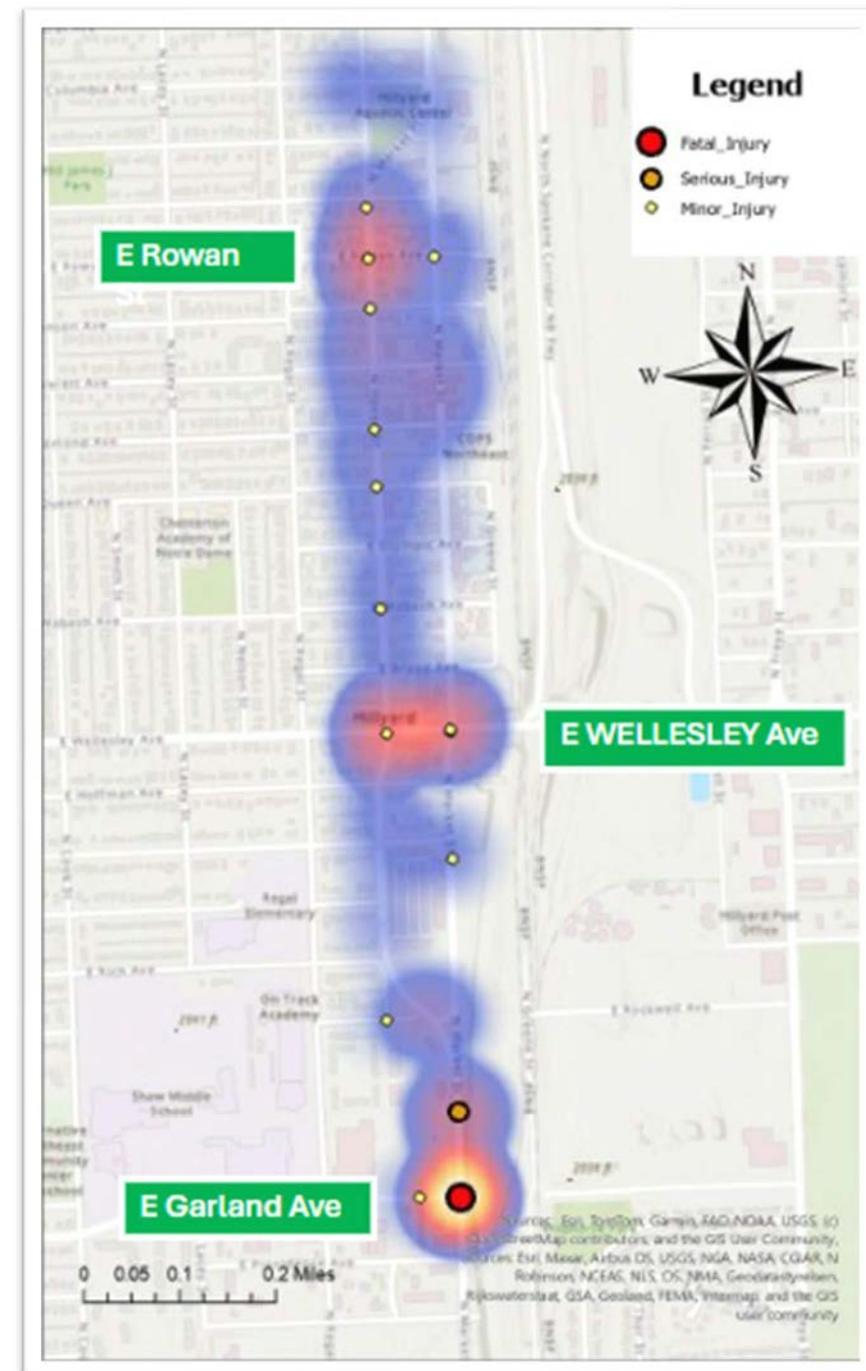
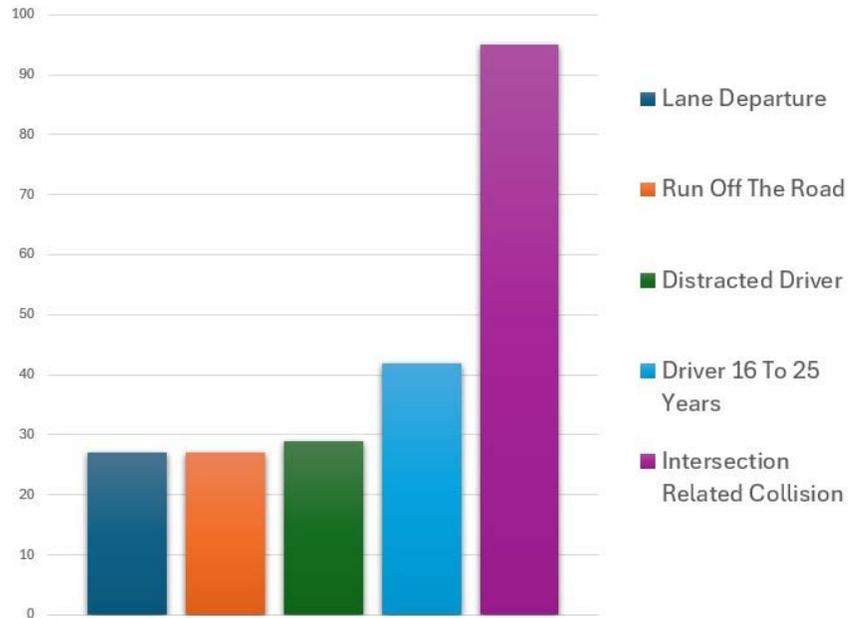
Data used to further develop VISSIM traffic model

Confirms community concerns about vehicle speeding



Crash Data Analysis

Cause of Crashes



Data Collection and Community Outreach

2D Design Alternatives

Modeling

Business District Improvements

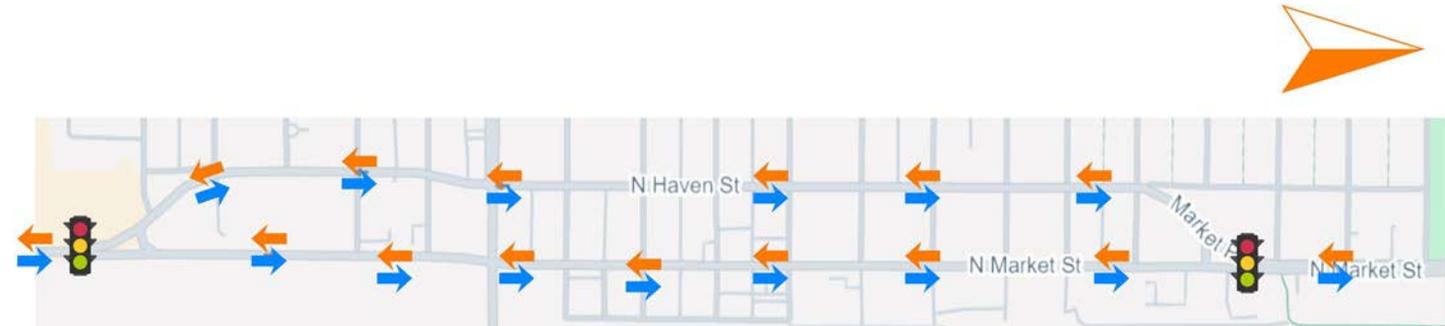
Future Work

2D Design Alternatives

1) No-Build

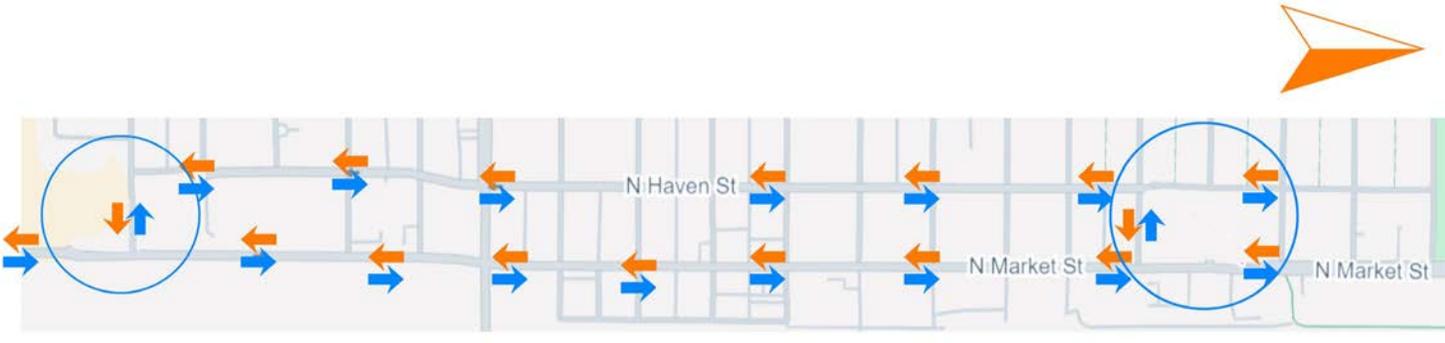
2) Intersection Control

- Roundabout
- Signalized Intersection



3) Restore-The-Grid

- Stop Controlled Intersection On Minor Street

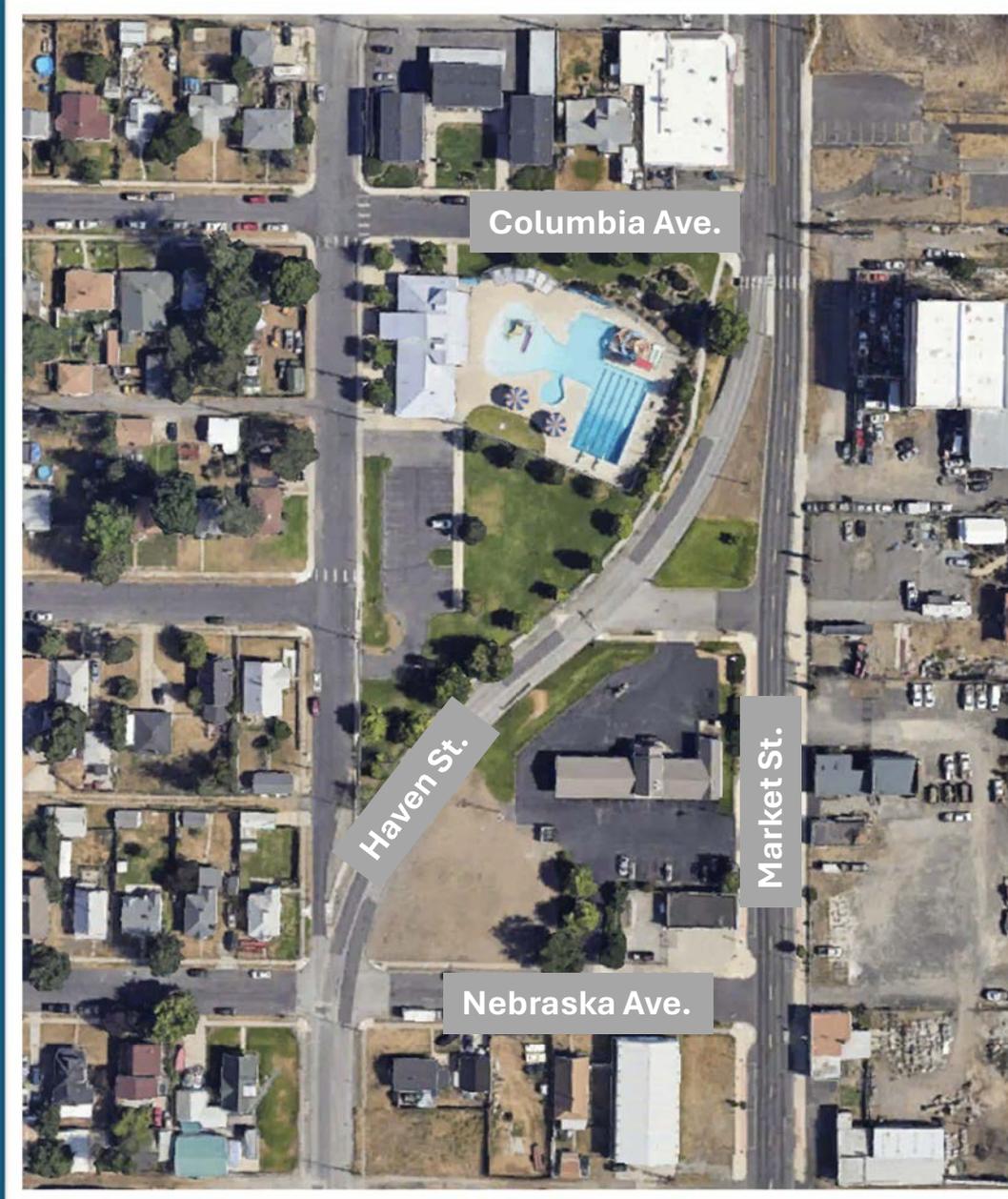


4) Wellesley @ Market & Haven Intersection

- Convert to 2-way traffic pattern

Market- Haven North Couplet

Existing Conditions
(No Build)



Design Alternatives



Restore-The-Grid



Signalized
Intersection



Roundabout

Market- Haven South Couplet

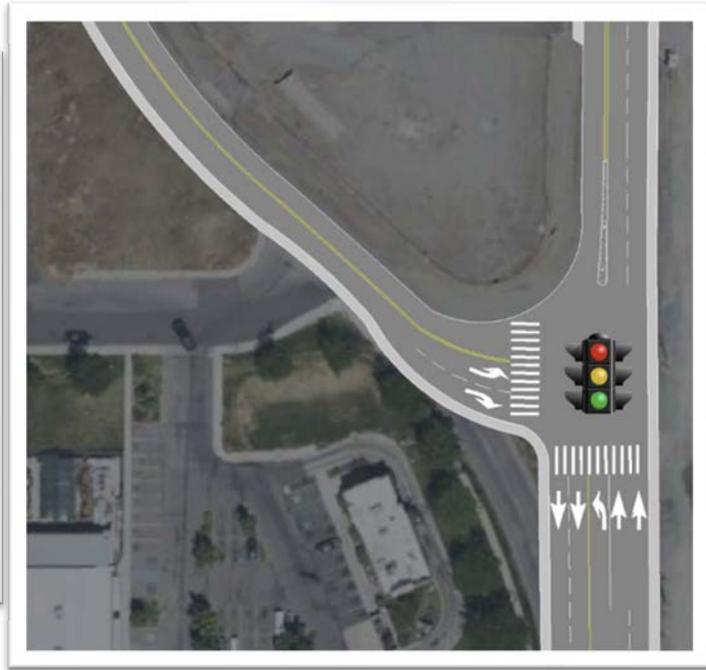
Existing Conditions
(No Build)



Design Alternatives



Restore-The-Grid

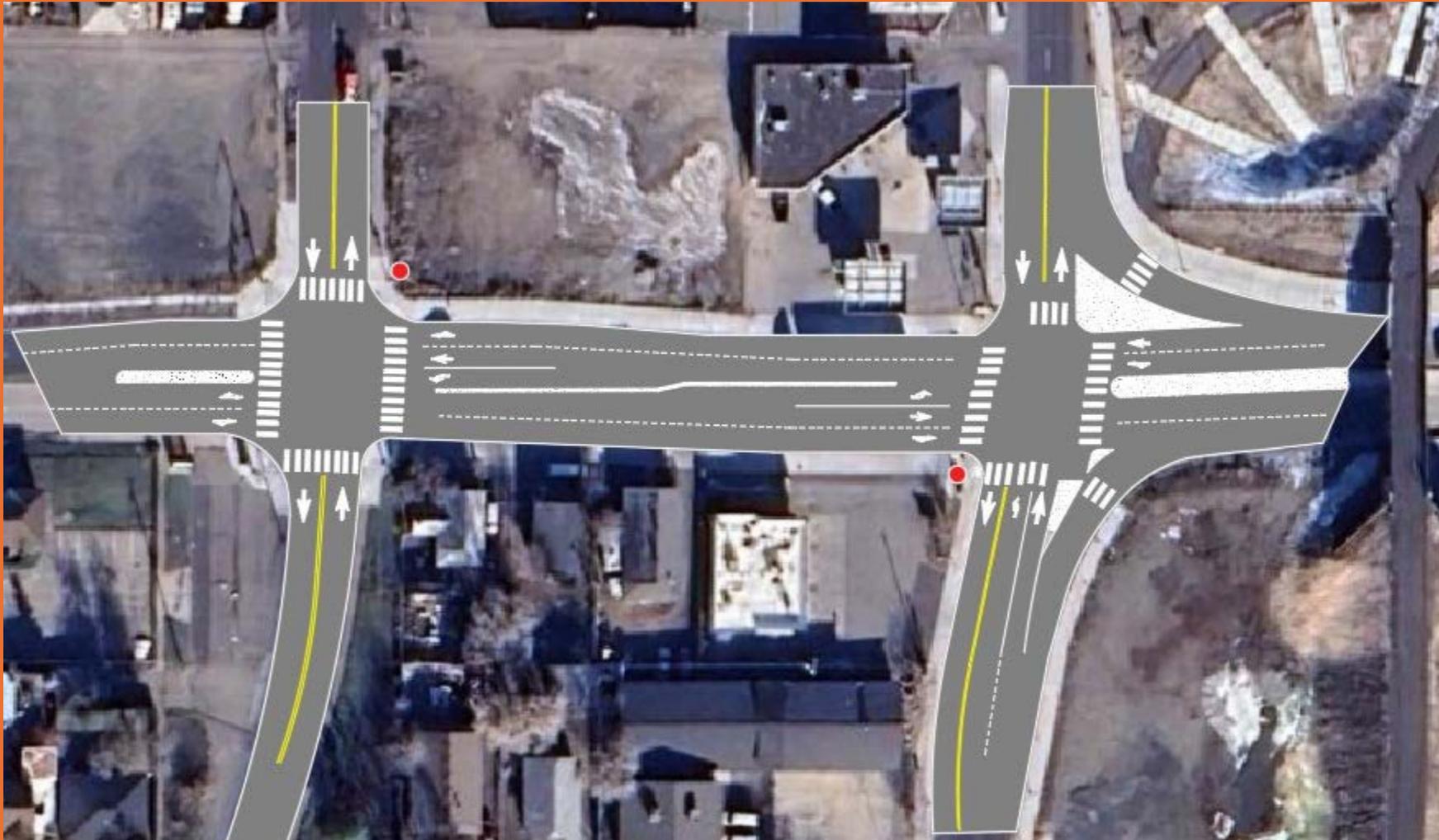


Signalized
Intersection



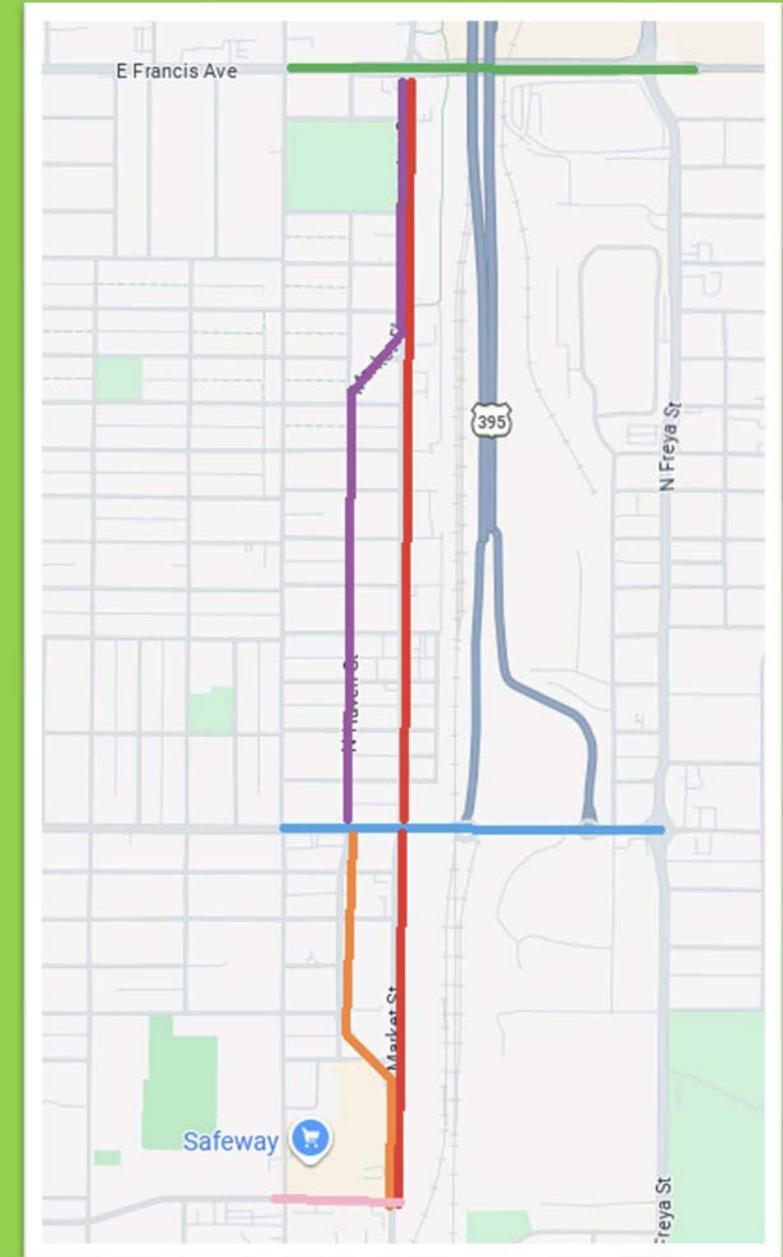
Roundabout

Wellesley Market/Haven Intersection Design



Traffic Volumes

- SRTC's 2050 Model
- Turning Counts from City of Spokane
- Estimated Growth Rates



Data Collection and Community Outreach

2D Design Alternatives

Modeling

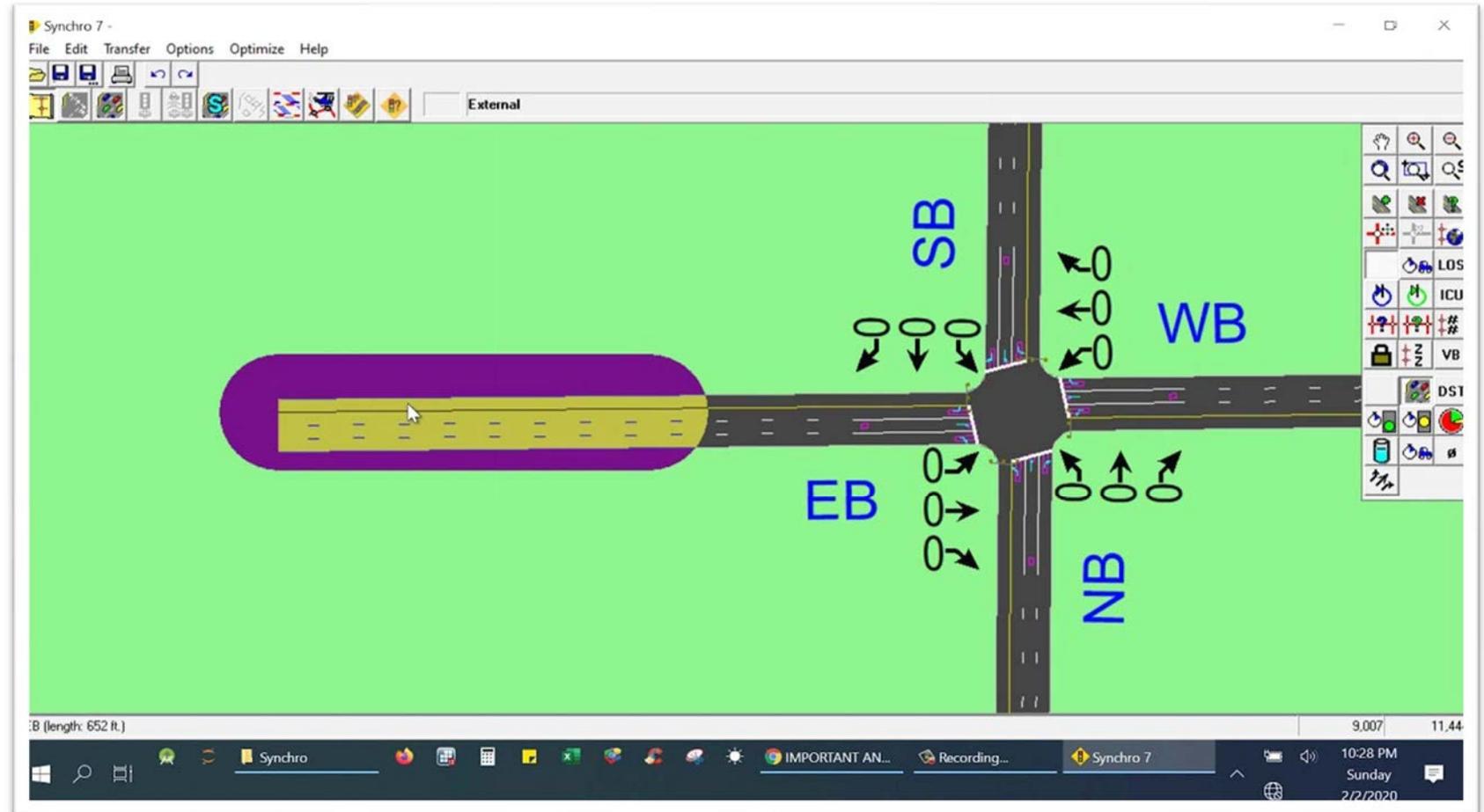
Business District Improvements

Future Work

Synchro

Calibration
measures to be
obtained:

- Queue length
- Signal timing

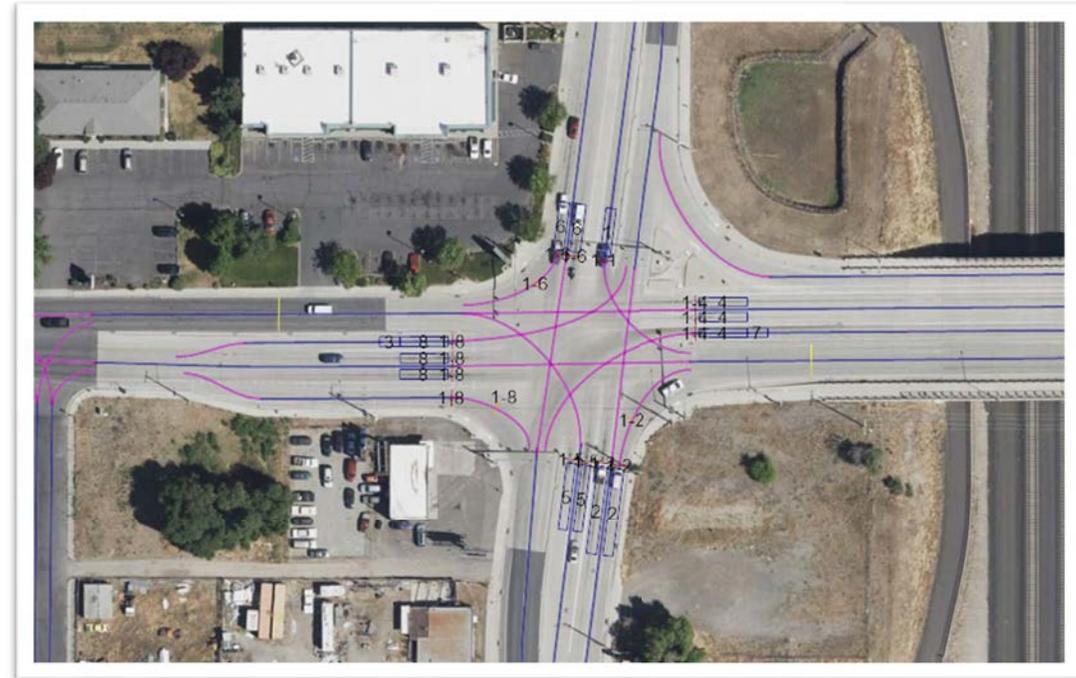


Existing Conditions VISSIM Model

Development of full network with links & connectors within model area

Speed advisories

Signal timing inputs



Traffic Modeling

Performance measures to be obtained:

- Travel time
- Level of service
- Vehicle speeds



Data Collection and Community Outreach

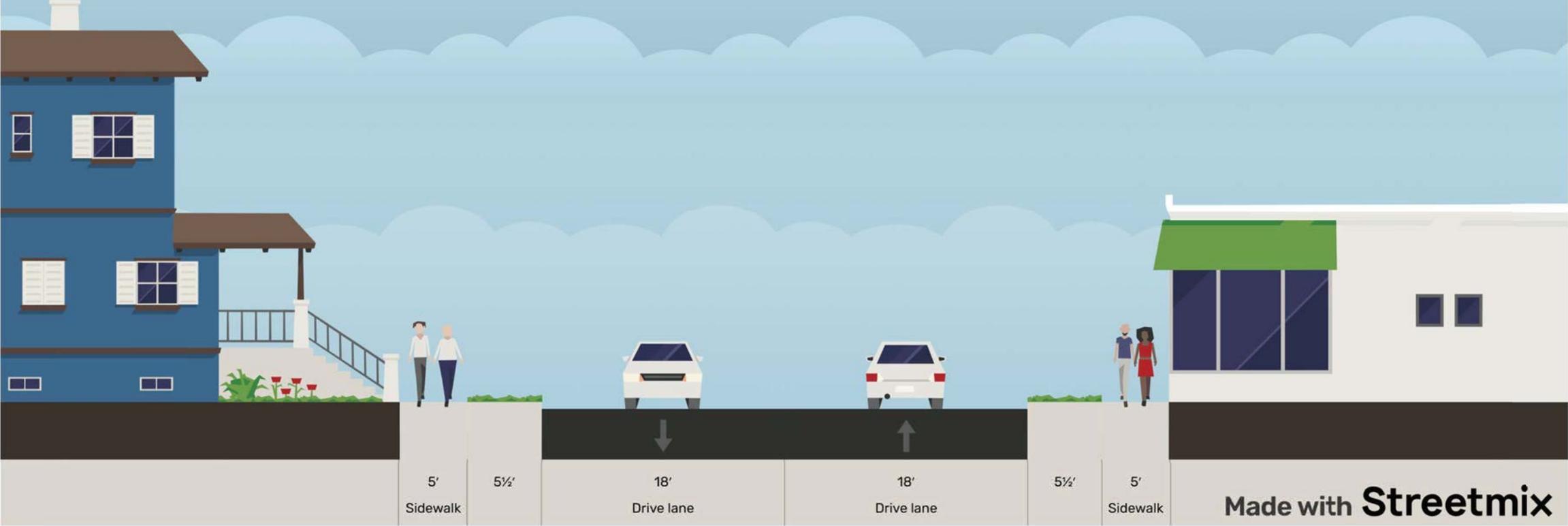
2D Design Alternatives

Modeling

Business District Improvements

Future Work

Haven St. Existing



Made with **Streetmix**

Haven St. Proposal

Goal:

- **Improve pedestrian facilities**
- **Improve business district access**
- **Slow vehicle speeds**
 - Add 8' Parking lane
 - Reduce N/S travel lanes to 12'
 - Pedestrian level lighting, adjacent to parking
 - Street trees
 - Repaving and increasing sidewalk width by ½' on each side
 - Rapid Flash Beacon at Queen Ave. & Diamond Ave.

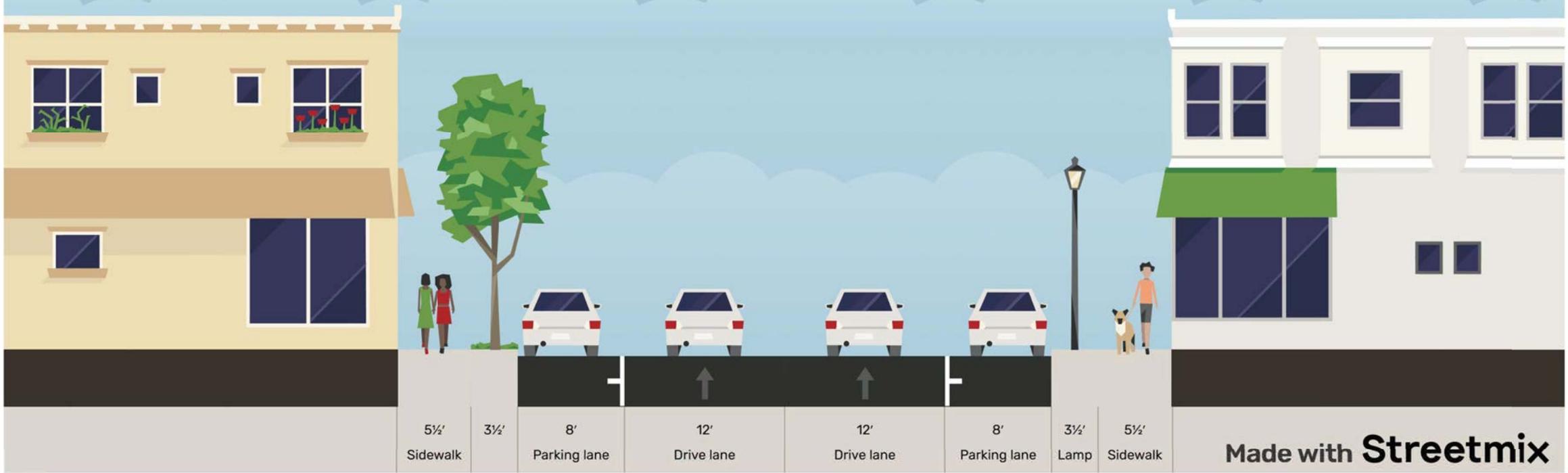
Guided by SRHD Walk Audit, NACTO Urban Design Guide, stakeholder and community input

Haven St. Proposal



**Using existing curb to curb width*

Market St. Existing



Made with **Streetmix**

Market St. Proposal

Goal:

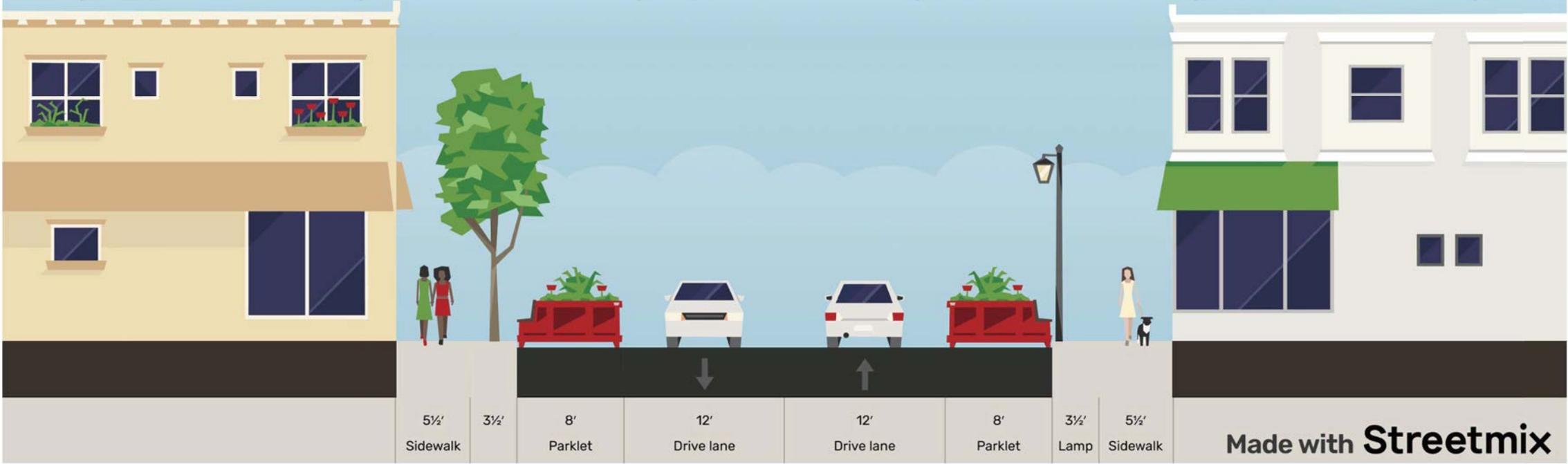
- Improve pedestrian experience
- Create community space
- Slow vehicle speeds

Solution: Parklets as community space

- Temporary sidewalk extensions
- Approved by City of Spokane in 2017
- Diverse usability



Market St. Proposal



Made with **Streetmix**

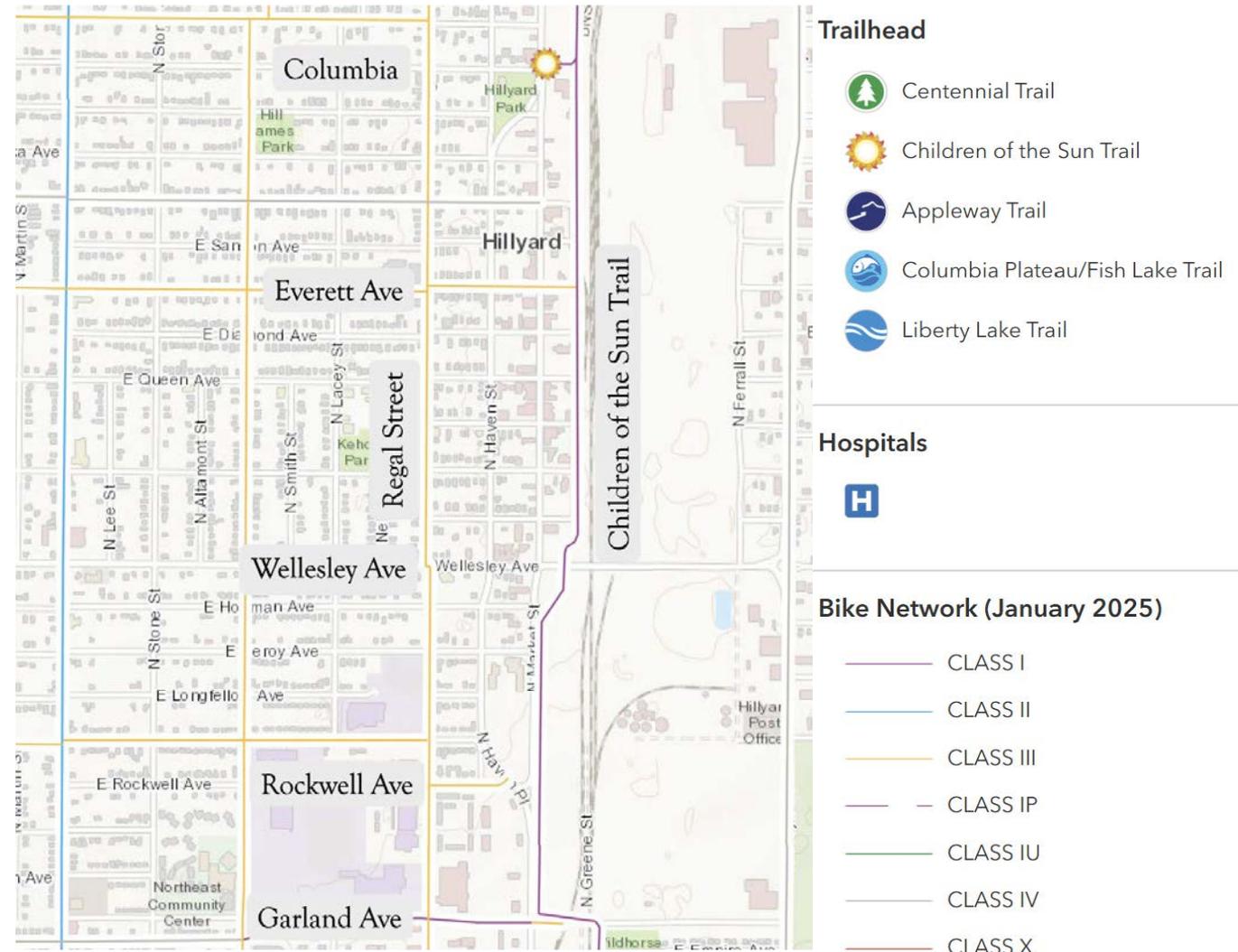
**Using existing curb to curb width*

3D Market St. Proposal



Bike Network Analysis

- Sufficient N/S connection
- Lacking E/W connection from neighborhood to business district/Children of the Sun Trail
 - Most routes are class III and beyond the business district

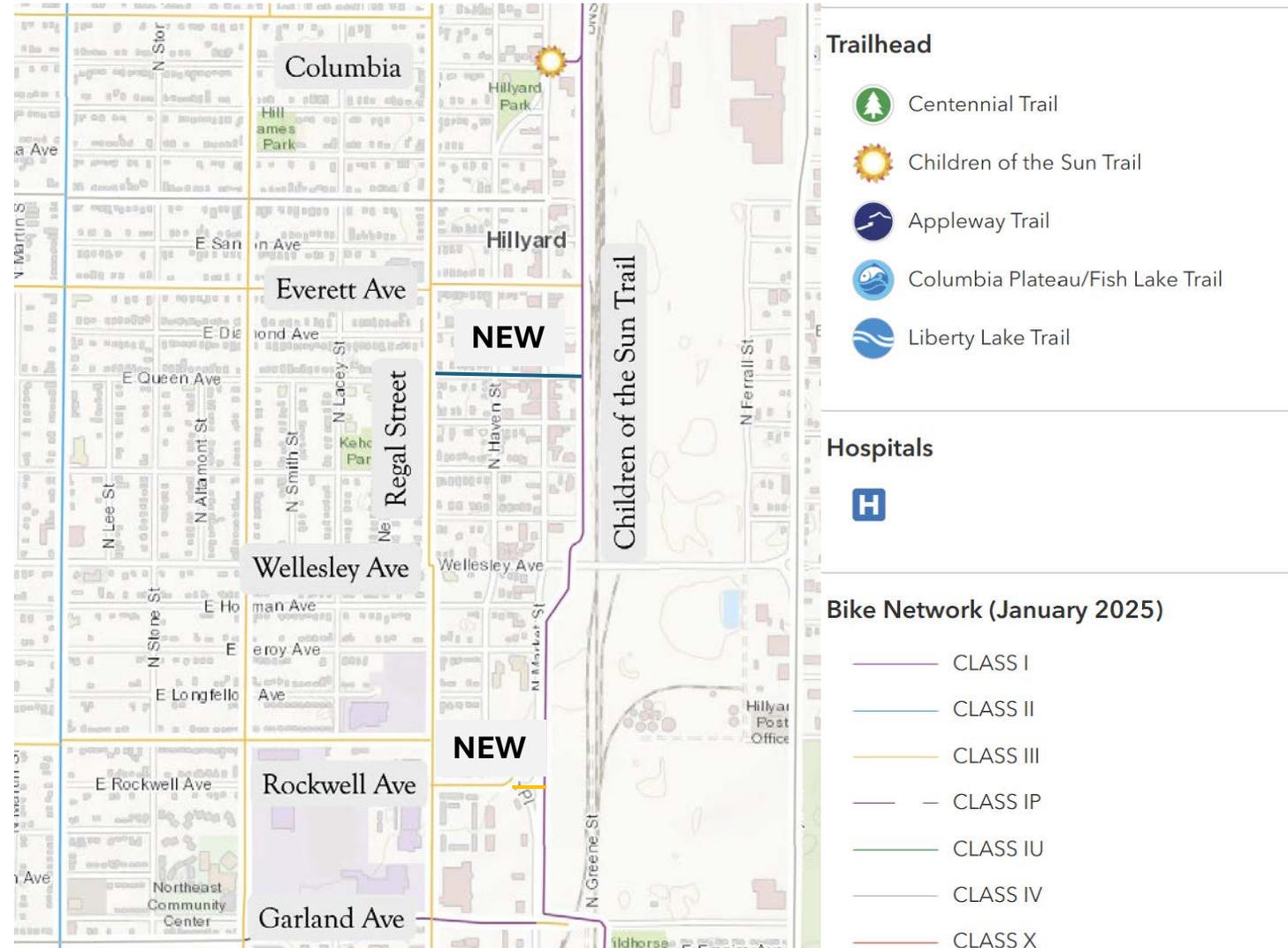


Bike Network Recommendation

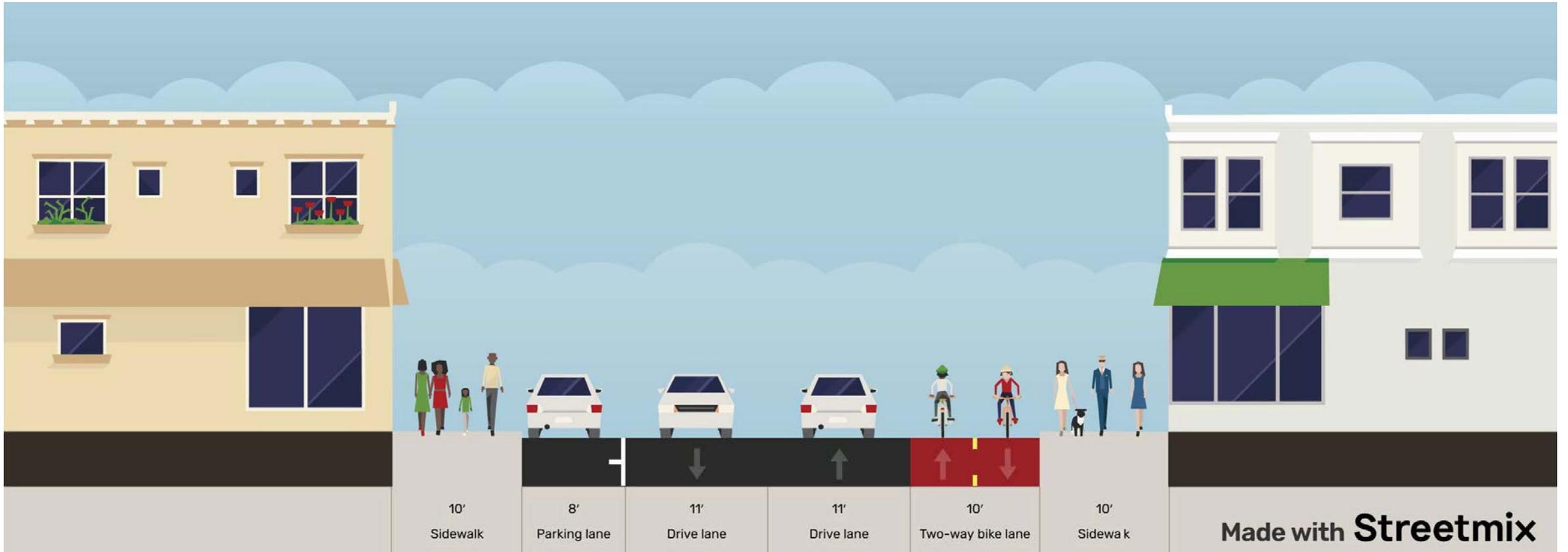
Class II bike route along Queen Ave

- Proposed rapid flash beacon at Queen & Haven with the existing crossing light at Queen & Market
- Improvements from Children of the Sun Trail to Regal St., beyond that neighborhood input is needed

Additional access through Rockwell Ave with crossing additions in 2-D designs



Queen Ave. Bike Recommendation



**Using existing curb to curb width*

Parking



Existing striped parallel parking



Added striped parallel parking



Removed parallel parking



Existing unstriped parallel parking

60 striped parking spaces

154 unstriped parking spaces

214 parking spaces total

Data Collection and Community Outreach

2D Design Alternatives

Modeling

Business District Improvements

Future Work

Future Work

- Analyze 3 Design Alternatives in VISSIM & Synchro Models
- Final Community Meeting with Hillyard residents
- Final report outlining our results
 - Jesse
 - City of Spokane – Traffic Impact Analysis for each design alternative

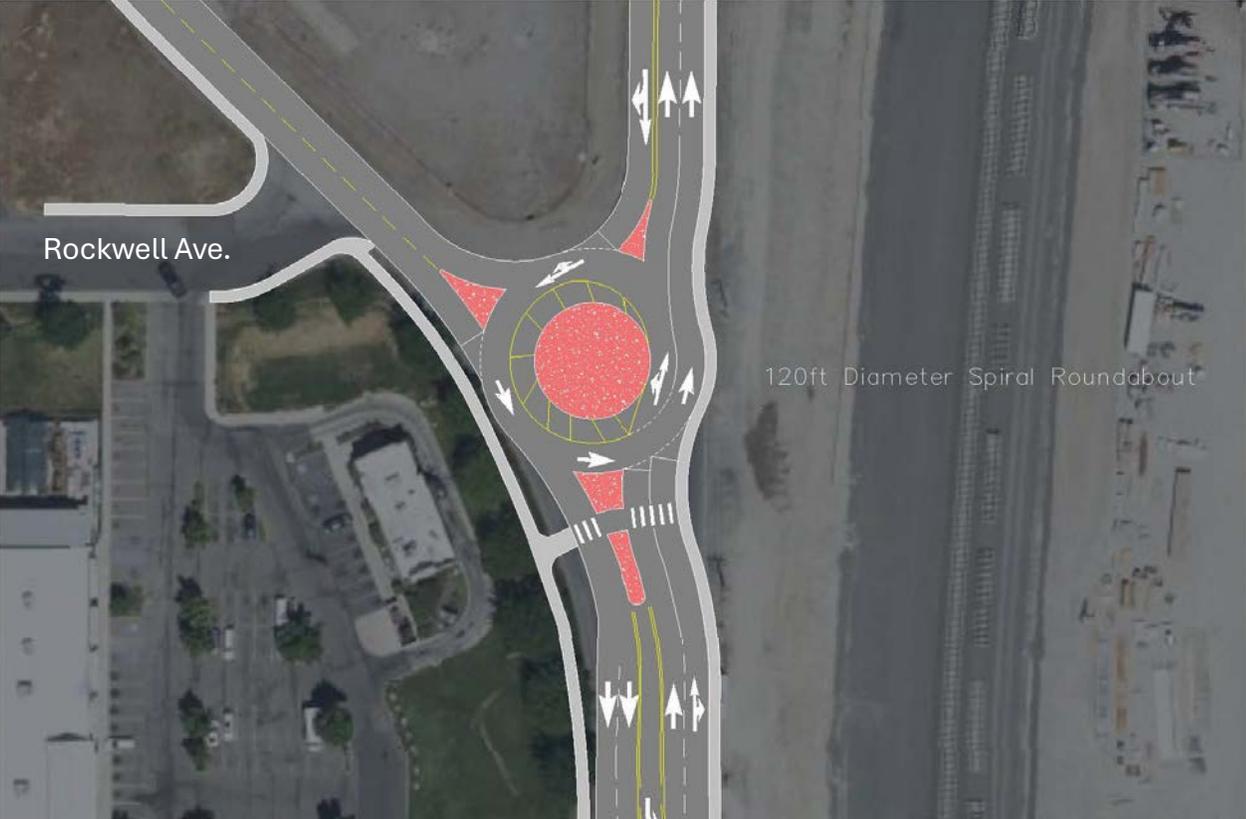
Weighted Decision Matrix

- Use of weighted matrix to select preferred 2D Design Alternative
- Draft decision matrix

Need your input on the criteria and weights!

Criteria	Weight	Sub-Weight
Economic*	40%	
Construction Cost		40%
Economic Activity & Business Support		60%
Environmental	15%	
Travel Time, End-to-End		55%
Heat Islands		45%
Social	45%	
Parking Accessible		25%
Lower Speed/Safety		35%
Bike/Ped Accessibility		35%
Vehicle Accessibility		5%
*All economic analysis is purely qualitative		

Intersection Control - Roundabout

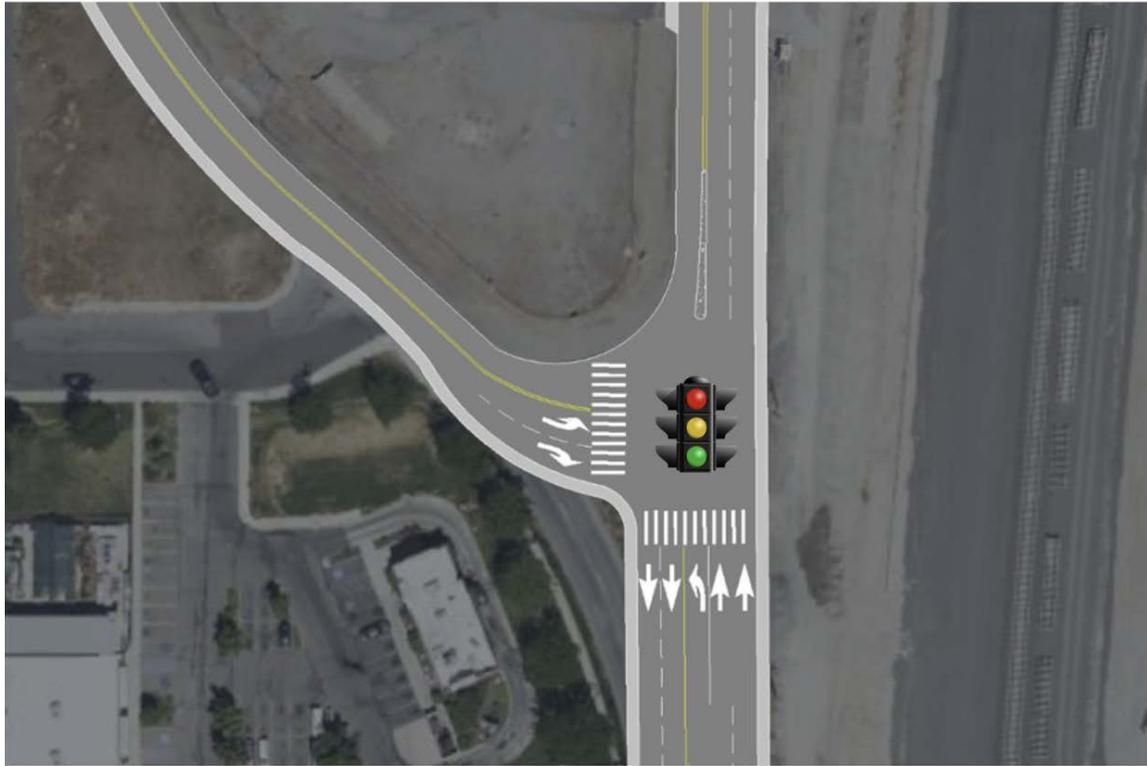


South Couplet End



North Couplet End

Intersection Control – Signalized Intersection



South Couplet End

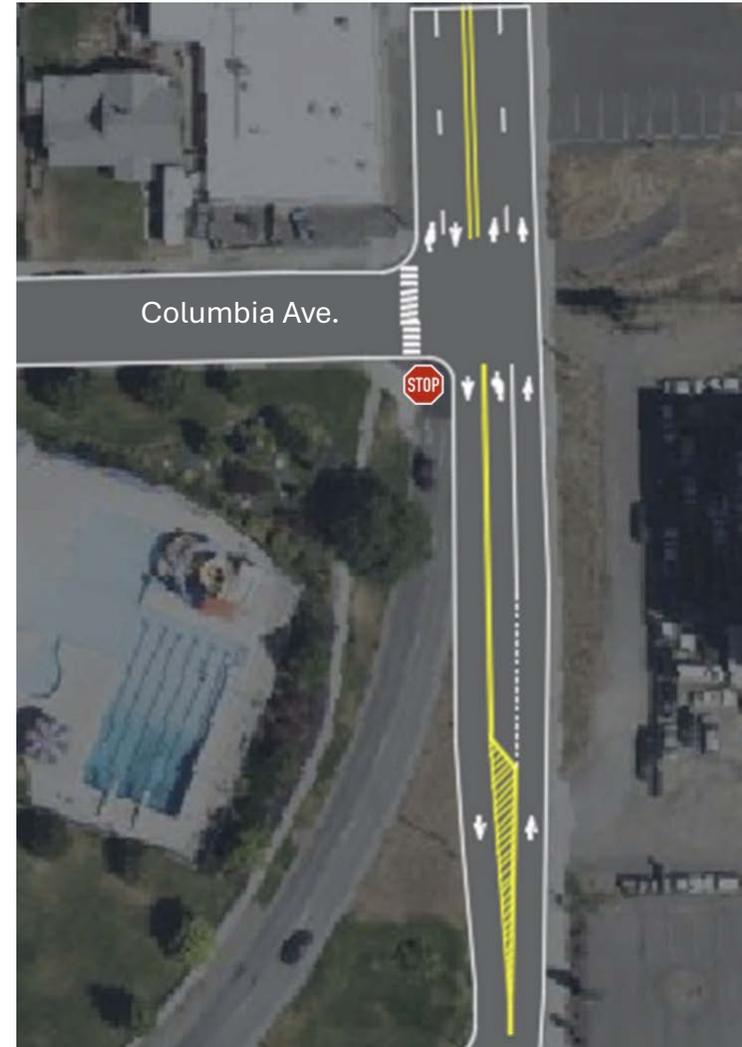


North Couplet End

Restore the Grid – Stop Controlled



South Couplet End



North Couplet End