

DRAFT

# Cassia Street Bikeway

September 2018



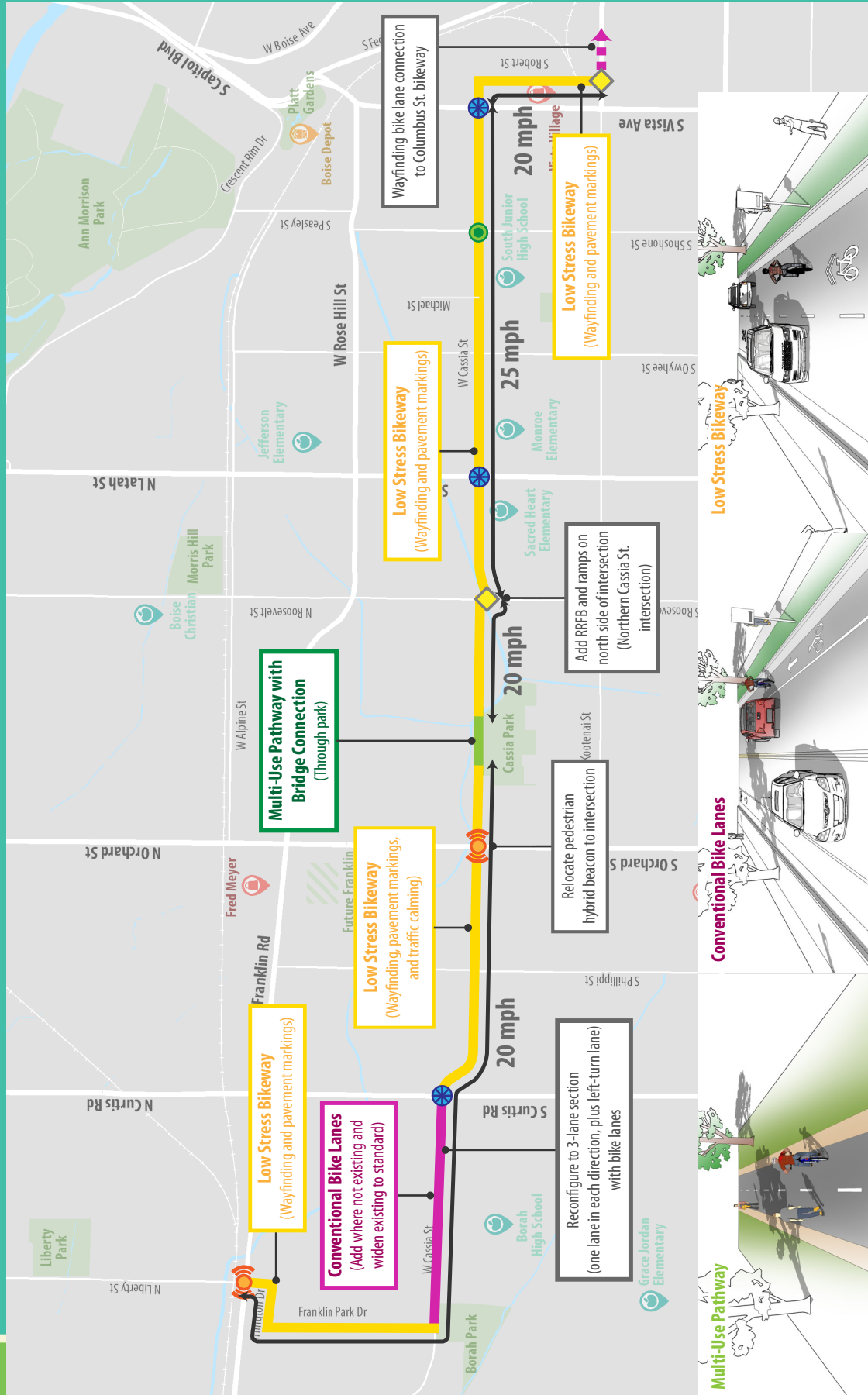
## Concept Design Recommendations Boise, Idaho

Prepared for:  
Ada County Highway District  
3775 Adams Street  
Garden City, Idaho 83714  
208.387.6100

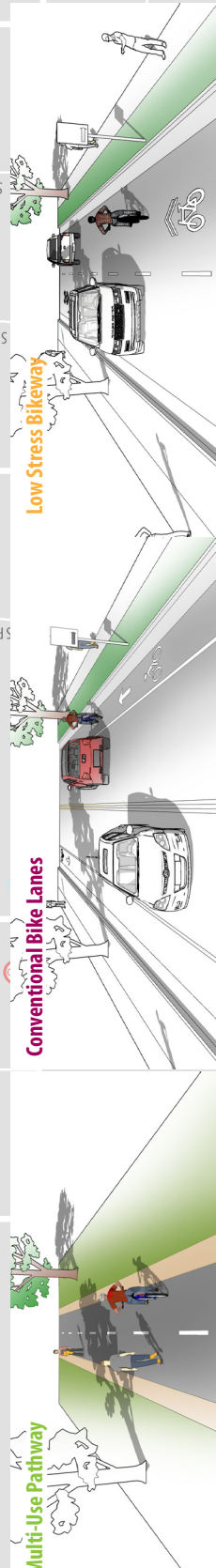


Prepared by:  
Kittelson & Associates, Inc.  
101 S. Capitol Boulevard  
Boise, Idaho 83702  
208.338.2683

# Cassia Street Bikeway Concept Design Recommendations



- Multi-Use Pathway
- Conventional Bike Lanes
- Low Stress Bikeway
- Bicycle Detector Markings
- Pedestrian Hybrid Beacon
- Mini-Roundabout
- RRFB




# PROJECT DESCRIPTION

The Ada County Highway District (ACHD) has prepared a concept design for the Cassia Street Bikeway. The Cassia Street Bikeway will connect the east and west side of the Central Bench Neighborhood via a low stress bikeway. It will provide connections to Boise State University and Downtown Boise on the east side via Kootenai Street and will connect to the future Liberty Bikeway on the west side via Liberty Street. Cassia Street was identified as a potential bikeway in the 2012 *Boise Central Bench Pedestrian and Bicycle Plan*. It is also included on the 2018 *Roadways to Bikeways Master Plan Update*.

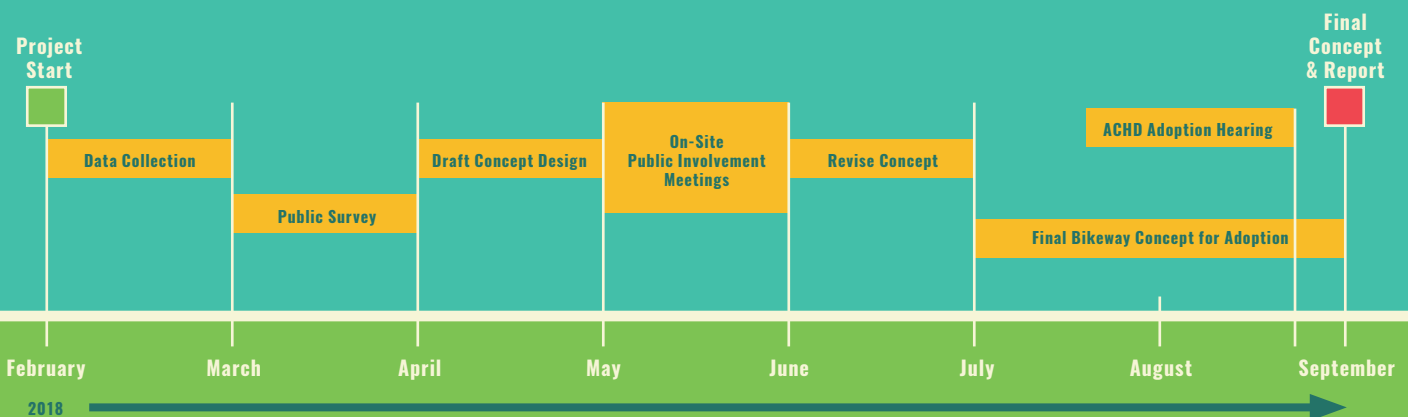


## CONCEPT DEVELOPMENT PROCESS

The figure below illustrates the Cassia Street Bikeway concept development process. The project team developed the initial concept using motor vehicle volumes and speeds provided by ACHD (see Appendix 1 for further details) in combination with the ACHD Bike Facility Matrix and the findings from a site visit. The concepts were then refined and finalized based on feedback from the public (see Appendix 2 for summaries) and the project technical team, which included ACHD and City of Boise representatives.

  
**90%**  
of the public survey participants are  
**IN FAVOR** of the Cassia Street  
Bikeway

### Concept Development Process



# RECOMMENDED CASSIA STREET BIKEWAY DESIGN

The corridor is broken into segments to describe the recommended design features along each section of the corridor. The following summarizes the recommended design treatments along each segment of the Cassia Street Bikeway. In addition to these recommendations, ACHD is currently working on branding for its low-stress bikeways, which would be applied to the Cassia Street Bikeway.

## SEGMENT 1

### Franklin Park Drive-Arlington Drive-Liberty Street from Franklin Street to Cassia Street

<b>Wayfinding Signage</b>	Signage could include Borah High School, Bishop Kelly High School, Emerald Street Bikeway, Borah Park, Cassia Park, South Junior High School, and Downtown Boise.
<b>Pavement Markings</b>	Install shared lane markings (i.e., sharrows).
<b>Franklin Road Crossing</b>	Provide an enhanced crossing of Franklin Road at Liberty Street (either Rectangular Rapid Flashing Beacons (RRFB) or a Pedestrian Hybrid Beacon (PHB) with bike push button).

## SEGMENT 2

### Cassia Street from Franklin Park Drive to Curtis Road

<b>Conventional Bike Lanes</b>	Install conventional bike lanes along Cassia Street where they are not currently present and widen the existing bike lanes to ACHD standard width recommendations.  Change the existing 4-lane cross-section to three lanes with bike lanes between Borah High School and Curtis Road. <sup>1</sup>
--------------------------------	---

<sup>1</sup> This recommendation has been reviewed and approved by the Boise School District and Borah High School Principal.

## SEGMENT 3

### Cassia Street from Curtis Road to Cassia Park

<b>Bicycle Detector Symbol at Cassia Street/Curtis Road Intersection</b>	Install bicycle detector symbols at the signalized intersection of Cassia Street/Curtis Road to denote where people on bikes should position themselves to be detected by the existing video detection at the traffic signal.
<b>Wayfinding Signage</b>	Signage could include Borah High School, Bishop Kelly High School, Borah Park, Cassia Park, South Junior High, and Downtown Boise.
<b>Pavement Markings</b>	Install shared lane markings (i.e., sharrows).
<b>Traffic Calming</b>	Install speed humps/cushions or chicanes and traffic calming islands.
<b>Relocate PHB at Cassia Street/Orchard Street Intersection</b>	Move the existing PHB at the Cassia Street/Orchard Street intersection to the north to align the crossing with the intersection.  Provide bicycle push-button assembly for activation from the road by people on bikes.

SEGMENT  
**4**

**Cassia Park**

**Multi-Use Path & Ridenbaugh Canal Bridge**

Construct multi-use path through ACHD right-of-way through Cassia Park and install a canal crossing at the east end of the path to cross the Ridenbaugh Canal.

SEGMENT  
**5**

**Cassia Street from Cassia Park to Robert Street,  
Robert Street from Cassia Street to Kootenai Street**

**Wayfinding Signage**

Signage could include Borah High School, Bishop Kelly High School, Borah Park, Cassia Park, South Junior High, Downtown Boise, Boise State University, Columbus Street Bikeway, and Shoshone Street Bikeway.

**Pavement Markings**

Install shared lane markings (i.e., sharrows).

**RRFB at Cassia Street/Roosevelt Street Intersection**

Install a crossing on the north side of the Cassia Street/Roosevelt Street Intersection (northern Cassia Street Segment) with curb ramps, RRFB, and bike push buttons at the existing and proposed RRFBs.

**Bicycle Detector Symbols at Cassia Street/Latah Street Intersection & Cassia Street/Vista Avenue Intersection**

Install bike detection symbols at the signalized intersection of Cassia Street/Latah Street & Cassia Street/Vista Avenue to denote where people on bikes should position themselves to be detected by the existing video detection at the traffic signal.

**Mini Roundabout**

Construct a mini roundabout at the intersection of Cassia Street/Shoshone Street to provide for traffic calming and operational improvements. Compliance with the current four-way stop control is below average according to ACHD. Explore gateway features noting the intersection of two bikeways.



# *Appendix 1*

## **Background Document Review & Data Collection**

## BACKGROUND DOCUMENT REVIEW

The project team reviewed previous studies to determine what routing and treatments had been previously identified. The Cassia Street Bikeway has been identified in the 2012 *Central Bench Neighborhood Pedestrian and Bicycle Plan* (Reference 1), and in the 2018 *Roadways to Bikeways Master Plan Update* (Reference 2) as serving the Central Bench and providing connectivity throughout the Boise Bench. The *Bike Facility Matrix* from the 2018 *Roadways to Bikeways Master Plan Update*, pictured in Exhibit A, was used as a guide to identify treatments along the corridor.

## DATA COLLECTION

Vehicle speed data and ADT volumes collected during Spring of 2017 and 2018 by ACHD were used when assessing the corridor sections in relation to the Bike Facility Matrix. Exhibit B shows the observed speeds along the corridor and Exhibit C shows the observed average daily traffic (ADT) volumes along the corridor. Exhibit A also shows where each segment falls in ACHD's *Bike Facility Matrix*.

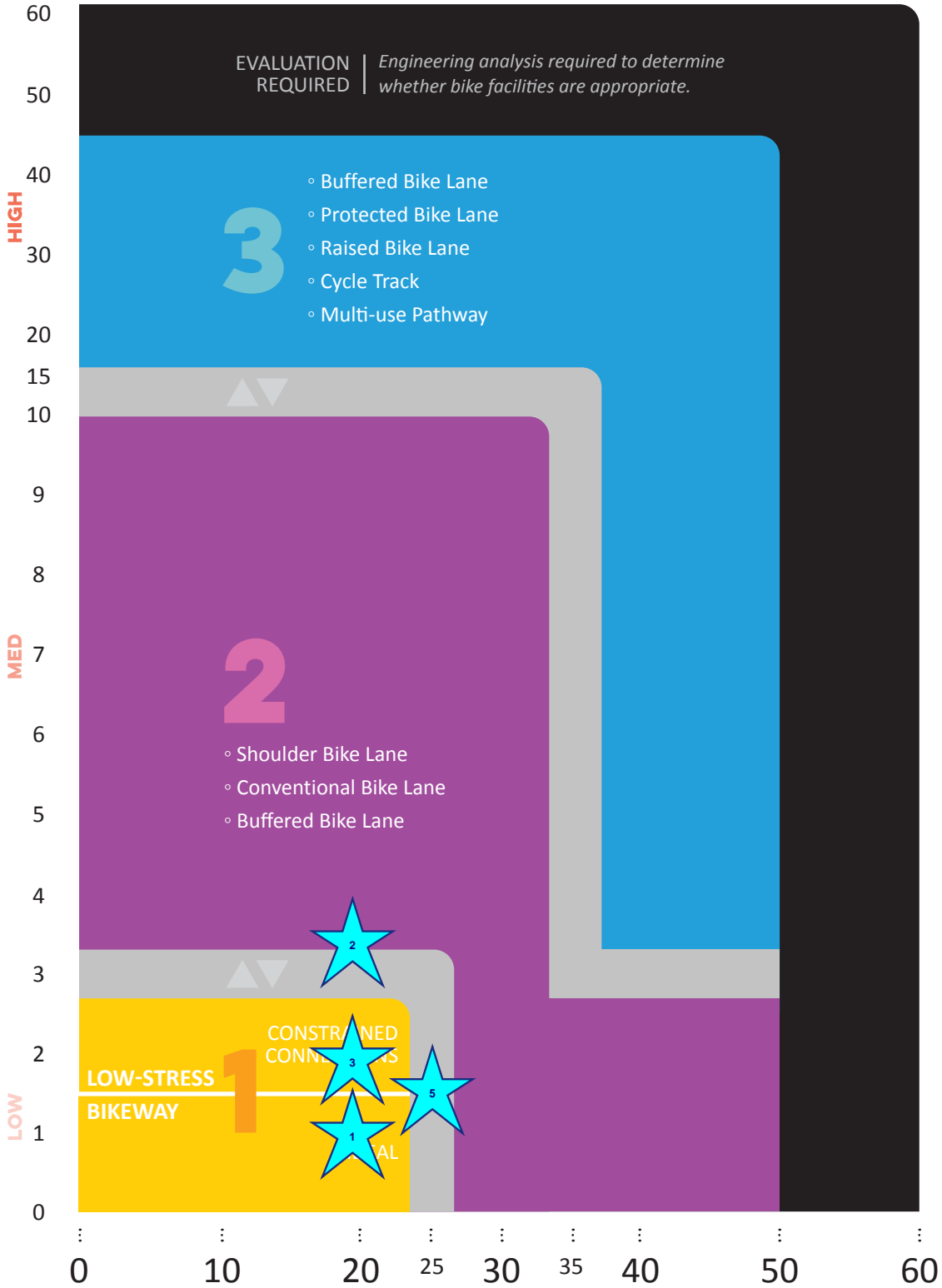
As shown in Exhibit B, most the Cassia Street corridor has a posted speed limit of 20 miles per hour (mph), except for the portion between Latah Street and Vista Avenue, which has a posted speed limit of 25 mph. ACHD provided observed motor vehicle speeds at several points along the corridor. Generally, observed 85<sup>th</sup>-percentile speeds were near the posted speeds along the corridor; however, in the section of Cassia Street between Curtis Road and Orchard Street, which has a posted speed limit of 20 mph, 85<sup>th</sup> percentile speeds were measured in the range of 27 to 30 mph.

Exhibit C illustrates the observed ADT volumes on the corridor, showing that most of the corridor carries less than 3,000 vehicles per day, which is the maximum ADT for a Level 1 bicycle facility, and many are under 1,500 vehicles/day, which is ideal for a Level 1 bicycle facility. The highest ADT volumes observed are on the western section of Cassia Street, between Curtis Road and Franklin Park Drive, where ADT has been measured between 3,900 and 4,300 vehicles per day, which push this section into a Level 2 bicycle facility per the Bike Facility Matrix.

Additionally, ACHD performed a compliance study at the all-way stop-controlled (AWSC) intersection of Shoshone Street/Cassia Street. This study was in response to public comment indicating frequent instances of vehicles running the stop signs at this intersection. From this investigation, ACHD determined that compliance at this intersection was less than desirable.

# Bike Facility Matrix

**TRAFFIC**  
 Average Daily Traffic | All lanes, both directions  
 1,000 vehicles per day or 100 vehicles per hour

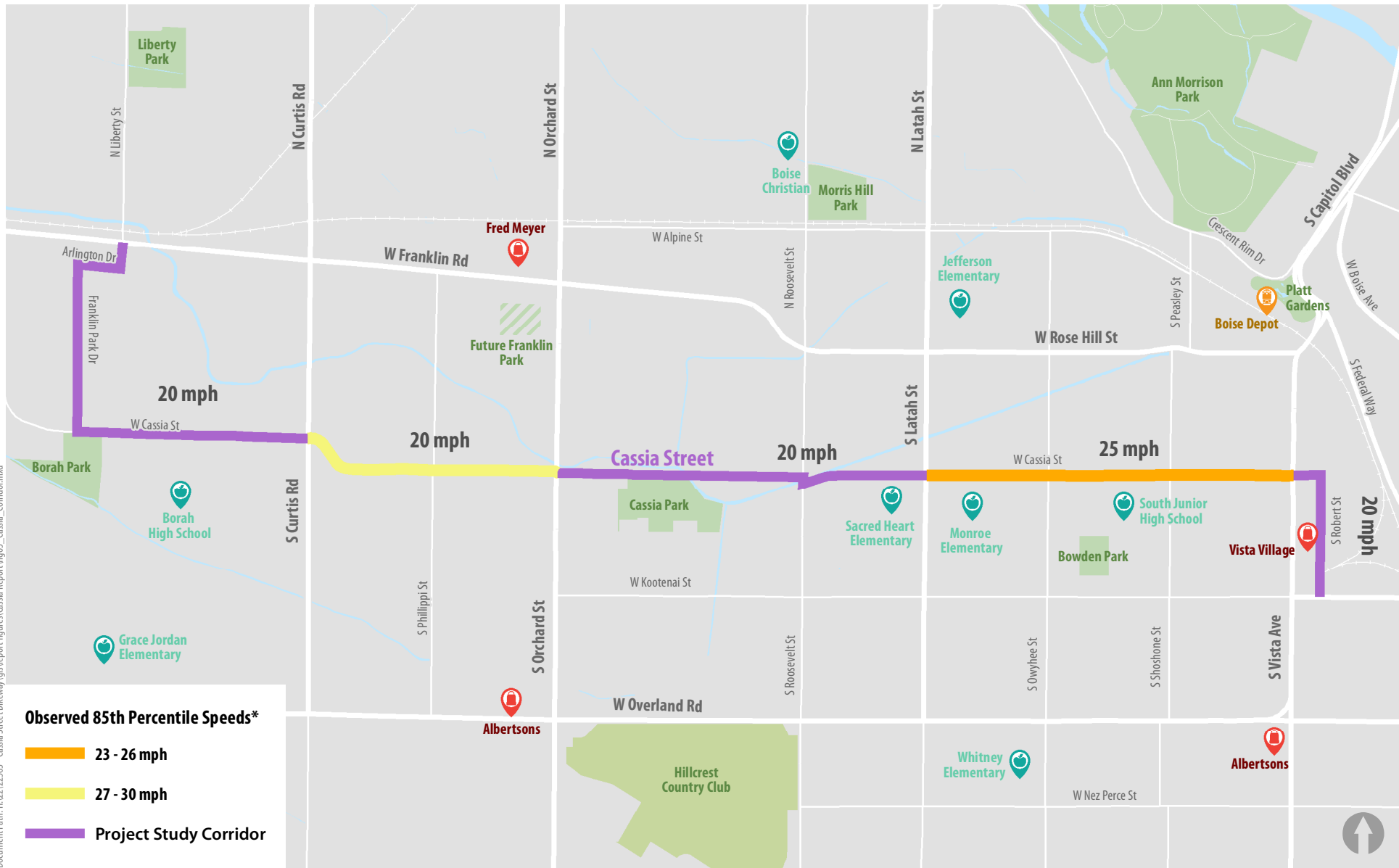


Segment #

**SPEED** 85th-percentile speed (preferred), design speed or posted speed (MPH)



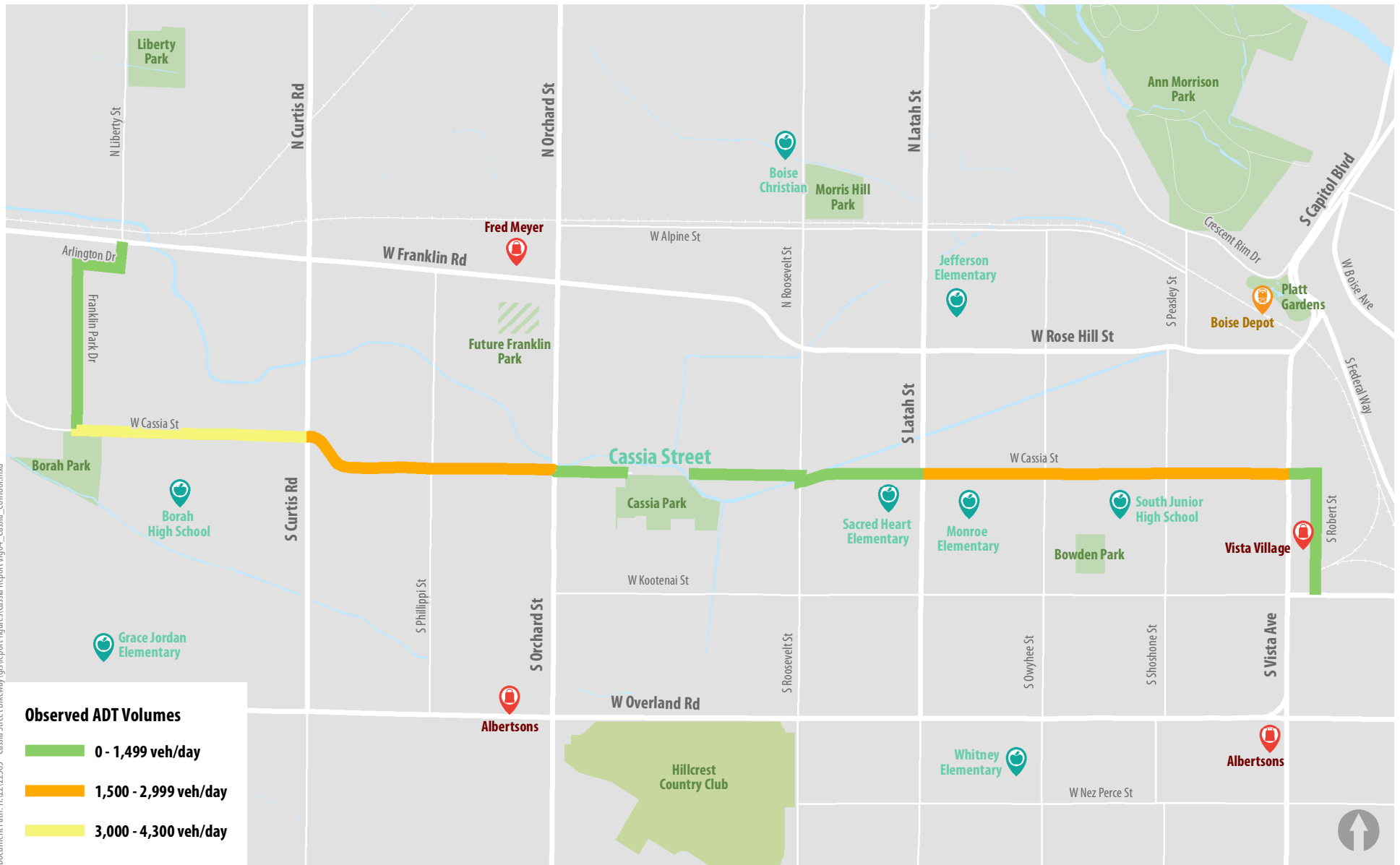
DocumentPath: H:\22\122563 - Cassia Street (Bikeway)\gis\report\_figures\Cassia Report\Fig03\_Cassia\_Corridor.mxd

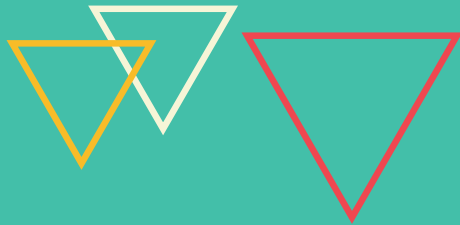


XX mph: Posted Speed Limit

\* 85th percentile speed data not available on all study segments

DocumentPath: H:\22\122563 - Cassia Street Bikeway\gis\report figures\Cassia Report\Fig04\_Cassia\_Corridor.mxd





# *Appendix 2*

## **Public Comment Summaries**

## MEMORANDUM

Date: May 1, 2018

Project #:  
22563/4

To: David Corcoran, AICP and Christy Foltz-Ahrlrichs; ACHD

From: Jamie Markosian, EIT and Nick Foster, AICP

Project: Cassia Street & Shoshone Street Bikeways

Subject: Public Comment Summary

This memorandum summarizes public feedback received for the Cassia Street & Shoshone Street Bikeways Concept Designs. Public comments were collected through two individual online surveys, each accompanied by an interactive map using the MetroQuest application. The online surveys/maps were open from March 22, 2018 through April 9, 2018. Additionally, a paper version of the surveys was made available to those that wished to use that form of media to provide input.

The survey and interactive map allowed the members of the community to provide their input on opportunities to improve biking on each corridor and identify challenges for the project team to consider.

Most comments were received via the online survey, with a few mail-in comments. Table 1 shows the number of comments received from each survey, as well as the number of surveys returned for each street.

**Table 1 Overall Comment Summary**

Study Corridor	Number of Survey Participants	Online Survey Comments	Online Map Comments	Mail-In Comments	Total Comments Received
Cassia Street Bikeway	177	113	253	4	370
Shoshone Street Bikeway	161	116	232	2	350

## SURVEY RESPONSE SUMMARY

Respondents were asked the same questions for each corridor. The surveys were developed to assess the level of support for a bikeway on Cassia Street and Shoshone Street, determine the biking ability of the respondents, and provide an opportunity for area residents to voice concerns or share details about the corridors.

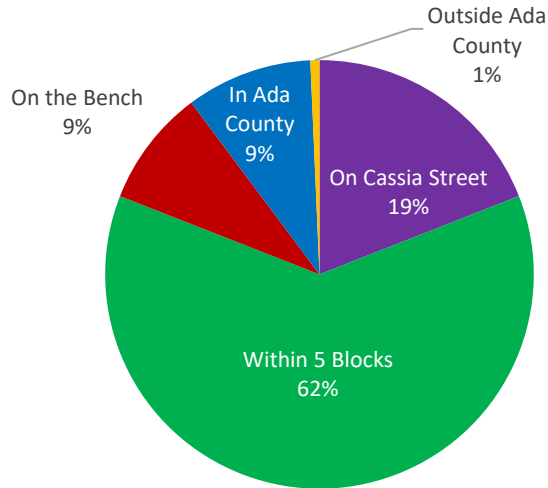
The following summarizes key points gleaned from the two surveys:

- Most respondents support a bikeway on Cassia Street and Shoshone Street.
- Priority areas to address on each corridor include:
  - Cassia Street:
    - Areas between Shoshone Street and Roosevelt Street near South Junior High School, Monroe Elementary School, and Sacred Heart School.
    - Cassia Park connection.
    - Borah High School/Park area.
    - Orchard Street and Roosevelt Street crossings
  - Shoshone Street:
    - The Rose Hill Street crossing.
    - The Overland Road crossing.
    - The segments with posted speeds of 30 MPH.

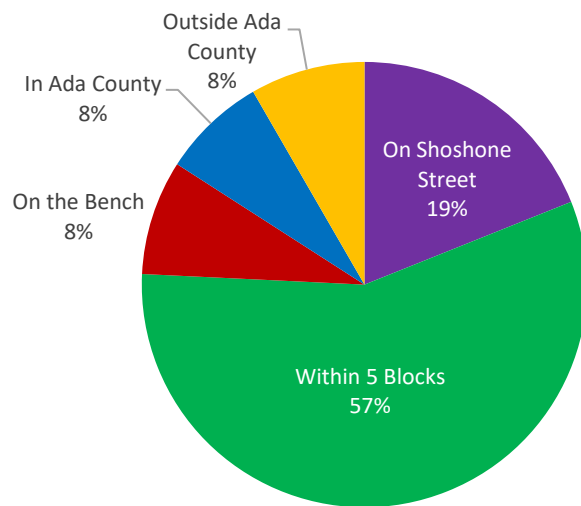
The following sections summarize the responses to the individual survey questions.

## **Respondent Profile**

Respondents were asked to denote where they lived in relation to the study corridors. As illustrated in Figure 1 and Figure 2, most, about 80%, survey participants live on or within 5 blocks of either Cassia Street or Shoshone Street.



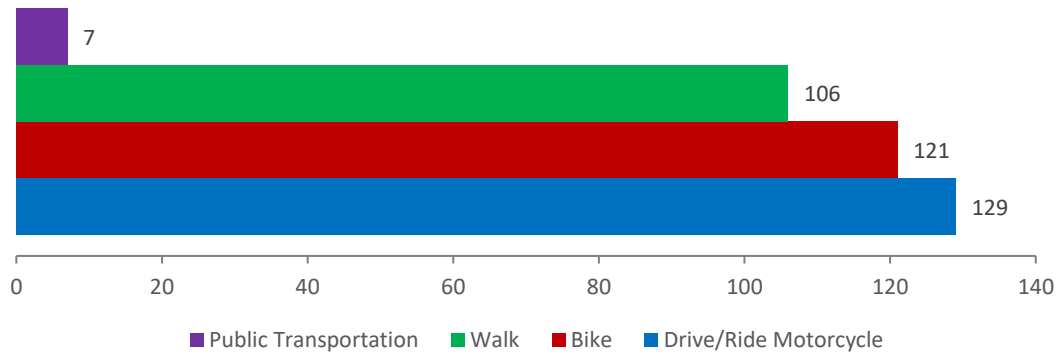
**Figure 1 Responses to "Where do you live?" - Cassia Street Survey**



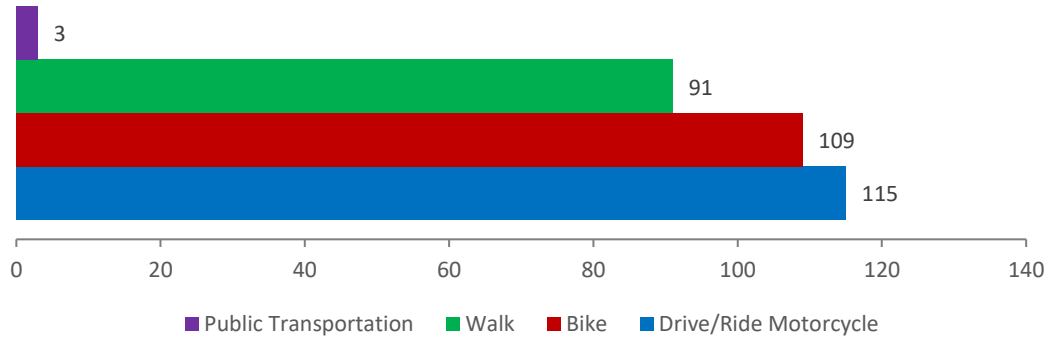
**Figure 2 Responses to "Where do you live?" - Shoshone Street Survey**

### Mode Choice

Respondents were asked to indicate their primary mode of transportation on or around the Cassia Street and Shoshone Street corridors. As seen in Figure 3 and Figure 4, most respondents use multiple modes of transportation. Driving (or riding a motorcycle) is the most frequently cited mode of transportation, followed closely by biking and then walking.



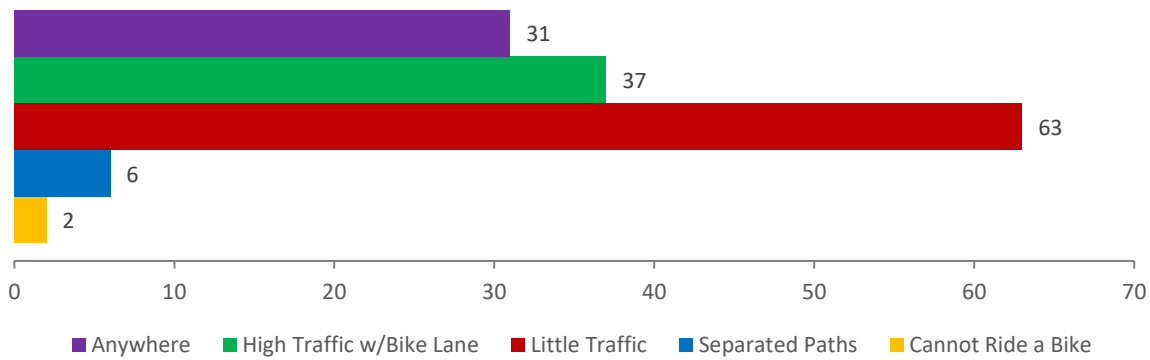
**Figure 3 Responses to "What type of transportation do you currently use on Cassia Street?" - Cassia Street Survey**



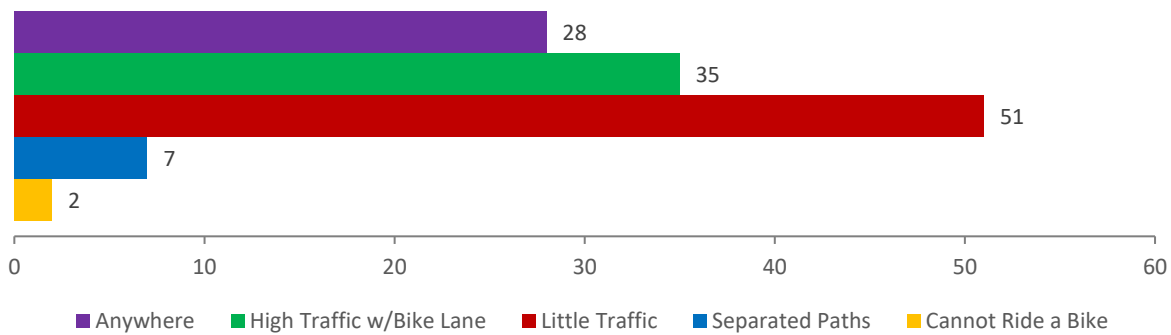
**Figure 4 Responses to "What type of transportation do you currently use on Shoshone Street?" - Shoshone Street Survey**

### **Biking Ability**

Respondents were asked to characterize their ability/level of comfort biking on a variety of different facilities. As shown in Figure 5 and Figure 6, respondents are generally comfortable biking in situations with little interaction with motor vehicle traffic, such as separated paths and roads with low motor vehicle volumes and speeds (options were listed in a ranked order and respondents were only able to choose one option).



**Figure 5 Responses to "How do you characterize your biking ability?" – Cassia Street Survey**



**Figure 6 Responses to "How do you characterize your biking ability?" - Shoshone Street Survey**

### Proximity to Schools

The Cassia Street and Shoshone Street corridors are adjacent to or within walking/biking proximity to approximately seven different schools, ranging from elementary to high school. Respondents were asked about their school aged children and the likelihood of those children biking to school. As seen in Figure 7 through Figure 10, most respondents do not have school aged children, but those that do note that adding more dedicated biking or walking facilities and safer crossings would increase the likelihood that their children would bike to school.



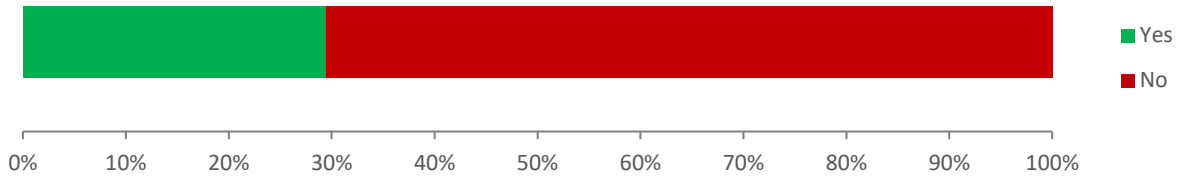


Figure 7 Responses to "Do you have school aged children?" - Cassia Street Survey

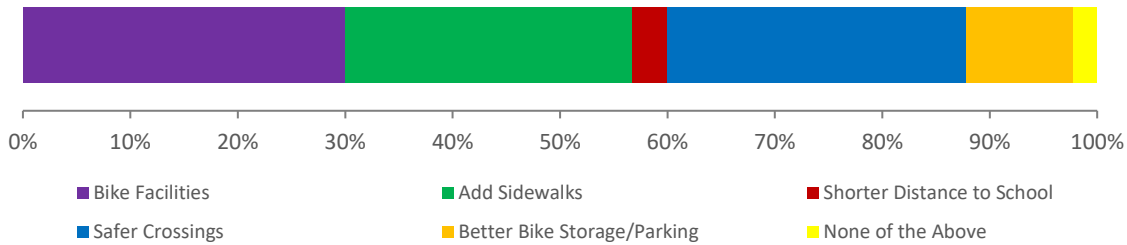


Figure 8 Responses to "What would increase the likelihood that your child/children would bike to school?" - Cassia Street Survey

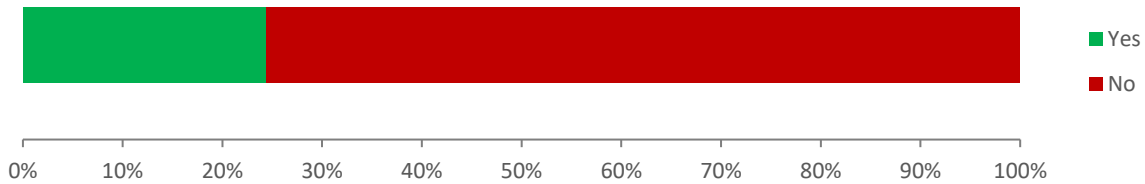


Figure 9 Responses to "Do you have school aged children?" - Shoshone Street Survey

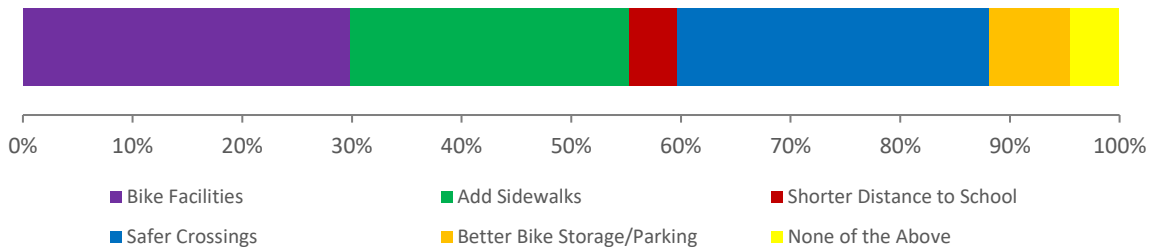


Figure 10 Responses to "What would increase the likelihood that your child/children would bike to school?" - Shoshone Street Survey

### Reasons for Biking Near Cassia Street and Shoshone Street

Respondents were asked why they bike near the study corridors. 'Recreation/Exercise' was the most frequently selected option, followed by 'Social Events' and 'Shopping/Errands' for both surveys, as shown in Figure 11 and Figure 12.

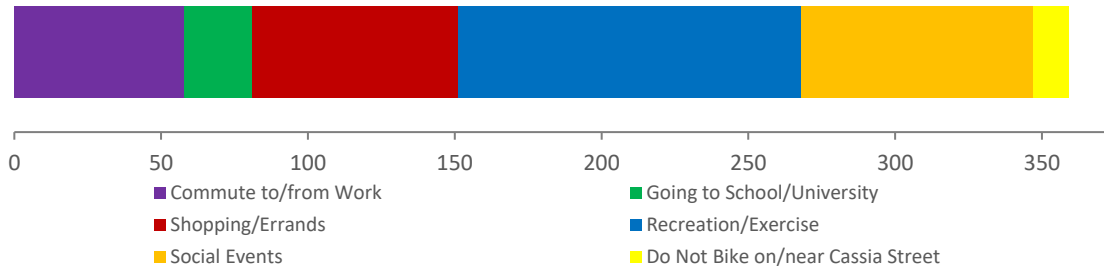


Figure 11 Responses to "Why do you bike near Cassia Street?" - Cassia Street Survey

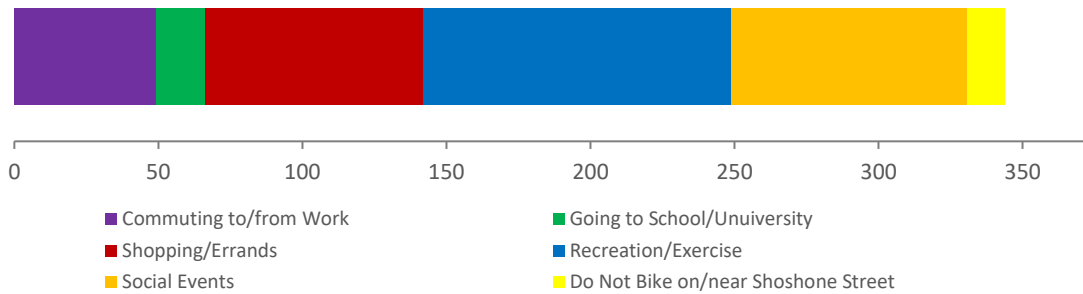
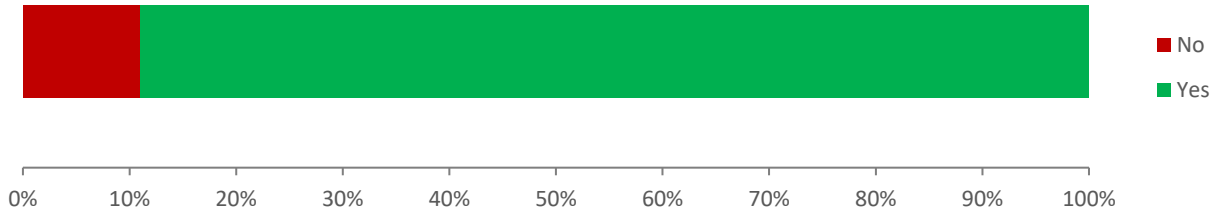


Figure 12 Responses to "Why do you bike near Shoshone Street?" - Shoshone Street Survey

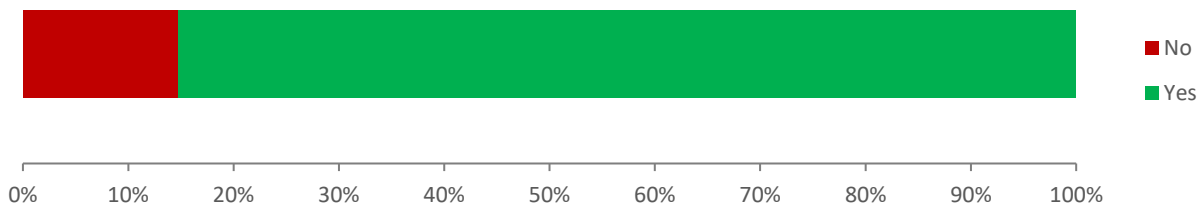
### Support for Bikeways on Cassia Street and Shoshone Street

Respondents were asked if they did or did not want a bikeway on Cassia Street and Shoshone Street. As shown in Figure 13 and Figure 14, most participants are supportive of bikeways on each corridor,

with approximately 90% of participants supporting the bikeway project on Cassia Street and approximately 85% of participants supporting the project on Shoshone Street.



**Figure 13 Responses to "Would you like to see a bikeway project completed on Cassia Street?" - Cassia Street Survey**



**Figure 14 Responses to "Would you like to see a bikeway projects completed on Shoshone Street?" - Shoshone Street Survey**

Further, of the participants that live on Cassia Street, approximately 80% (22/28) are supportive of a bikeway project and of the participants that live on Shoshone Street, approximately 85% (21/25) are supportive of a bikeway project on Shoshone Street.

### Public Comment Themes

Upon review of the comments provided by respondents to the two surveys and interactive maps, the following themes were identified about the respective corridors:

- Cassia Street:
  - Connection to/through Cassia Park – There were approximately 50 comments regarding a connection to/through Cassia Park (approximately 15% of all received comments on the Cassia Street survey).
  - Cassia Street between Roosevelt Street and Shoshone Street Near Schools – There were 20 comments to reduce speeds and/or traffic volume, 25 comments to provide pedestrian facilities (either improve/add sidewalk, add bike lanes), and 10

comments regarding drivers running stop signs at Cassia Street/Owhyee Street and Cassia Street/Shoshone Street.

- Other areas where comments were concentrated included:
  - Borah High School/Borah Park area, including the Curtis Road crossing.
  - Crossings of Orchard Street and Roosevelt Street
- Shoshone Street:
  - Overland Road Crossing – There were 50 comments (approximately 15% of all comments received on Shoshone Street survey) regarding the challenging crossing at the Overland Road/Shoshone Street intersection. Specifically, respondents were concerned about the offset of the intersection between the north and south legs of Shoshone and the traffic signal timing and crossing of Overland Road as a cyclist or pedestrian.
  - Rose Hill Crossing – There were 80 comments (approximately 25% of all comments received on the Shoshone Street survey) noting the challenges at this intersection, ranging from sight distance and intersection offset between Shoshone Street and Peasley Street and traffic speeds and volumes.
  - Connection to Downtown Via Capitol Boulevard – There were 40 comments regarding the challenging biking conditions on the sidewalks on Capitol Boulevard and the lack of bike facilities on Capitol Boulevard.
  - Areas with 30 MPH Posted Speed Limit – There were 9 comments requesting/suggesting lowering the speed limit, 8 comments noting that Shoshone Street in these segments were too narrow/had too much traffic to add bike lanes, 16 comments noting the opportunity for adding bike lanes/signage, and 6 participants noting the desire to retain on-street parking.

DATE 8/14/2018

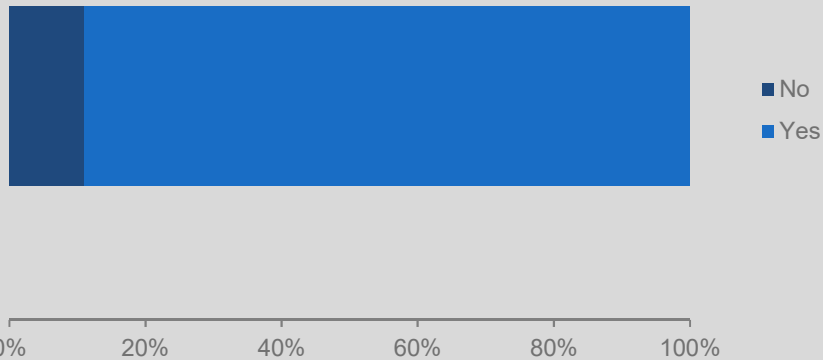


PUBLIC COMMENT SUMMARY  
PMT MEETING 2

# Cassia Street Summary

No. Participants	Online Survey Comments	Online Map Comments	Mail-in Comments	Total Comments Received
177	113	253	4	370

Do you want a Bikeway on Cassia Street?



- 89% participants are supportive of bikeway on Cassia Street.
- 22/28 participants living on Cassia Street are supportive of bikeway.



# Cassia Street Themes

- School Areas Near:
  - South Junior High School
  - Monroe Elementary School
  - Sacred Heart School.
- Cassia Park Connection.
- Borah High School/Park Area.
- Orchard Street & Roosevelt Street Crossings.



DATE 8/14/2018



POP-UP MEETING SUMMARY  
PMT MEETING 3

 **KITTELSON**  
& ASSOCIATES

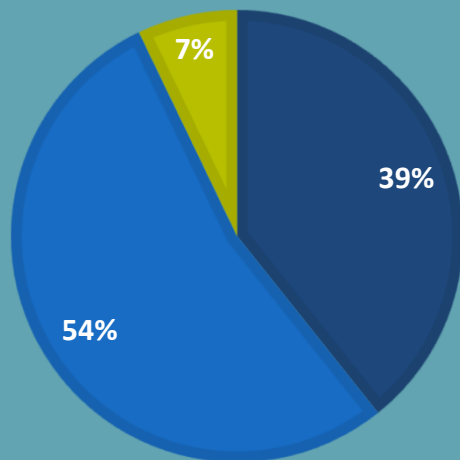


# Cassia Street Summary

Total Survey Participants	Online Survey Participants	Paper Survey Participants
28	8	20

DO YOU AGREE WITH THE PROPOSED TREATMENTS?

■ Strongly Agree ■ Agree ■ Not Sure



- 93% of participants agree with the proposed treatments.



# Cassia Street Themes

- Providing Connections to Downtown/Parks/Parallel Bike Routes
- Cassia Park Connection Well Received
- Orchard Street & Roosevelt Street Crossings Remain Priority for Residents
- Consider Treatment at Shoshone/Cassia where Bikeways Comes Together

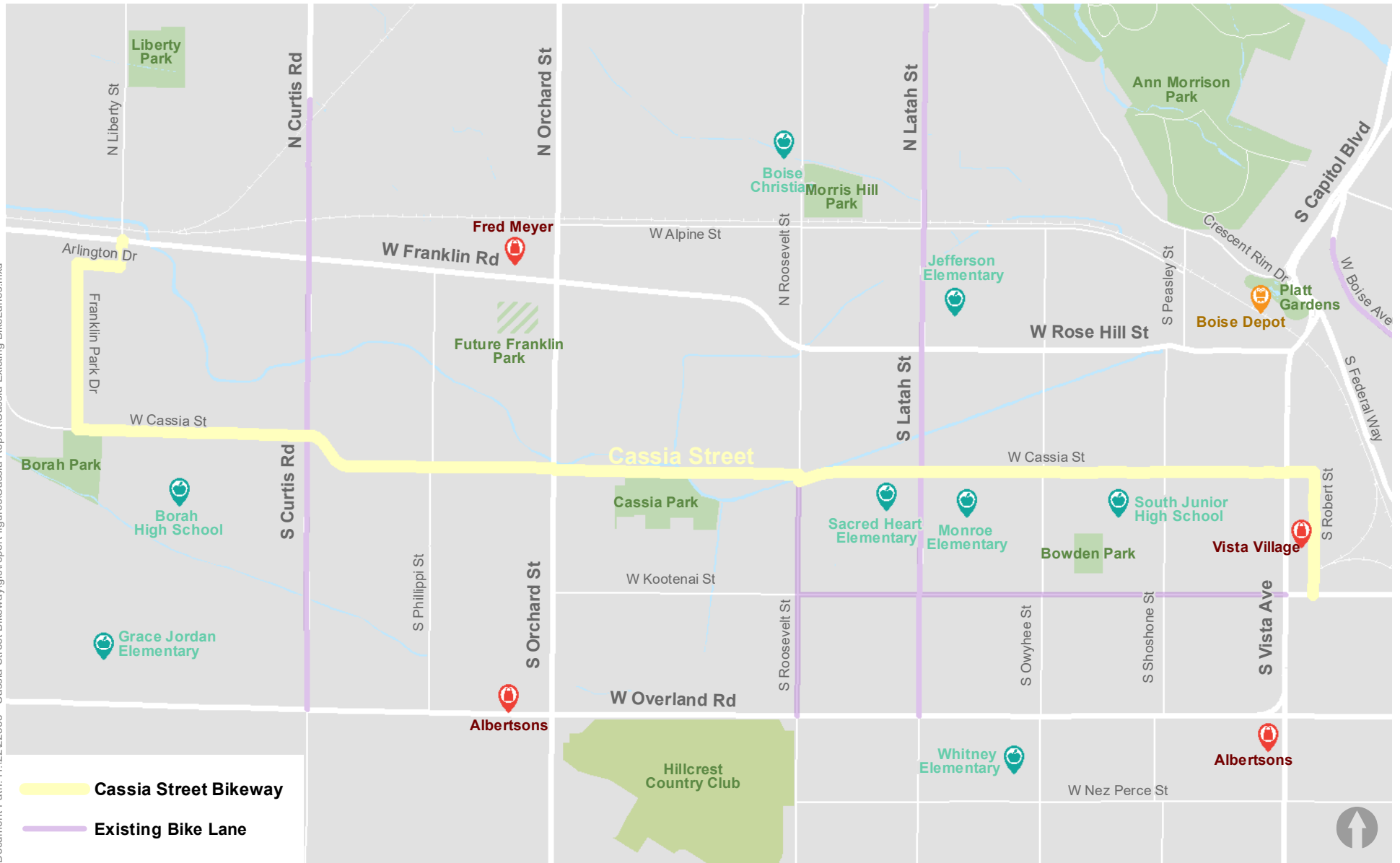






# *Appendix 3*

## **Existing Bike Lanes**

Document Path: H:\22\22563 - Cassia Street Bikeway\gis\report figures\Cassia Report\Cassia-Existing BikeLanes.mxd



-  Cassia Street Bikeway
-  Existing Bike Lane

