Orchard Street Realignment Study

BURGESS & NIPLE
Engineers • Planners

Project Team

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ACHD Project Manager

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B&N Project Manager

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B&N Deputy Project Manager
Presentation Outline

- Project Overview
- ACHD Goals and Concerns
- Review of the planning process
- Initial Concepts
- Review of Alternatives
- Final Recommended Alternative
- Project Lessons Learned
- Current Status of Project

Study Area
Purpose and Objectives - ACHD

- Develop a preferred concept-level design of Orchard Street as a Mobility Arterial between Gowen Road and Victory Road
- Complete a NEPA-compliant analysis of roadway design alternatives

Corridor and Study Components

- Level 3 bicycle facility as identified in ACHD Bike Master Plan
- Pedestrian facilities
- Compare roundabout and signal options at Orchard/Gowen intersection
- Balance access, traffic flow, and safety
- Maintain and improve local roadway connections
Corridor Background and Challenges

- Growth and traffic projections
- Recent construction to the south
- Airport Master Plan
- History - previous study/design efforts
- Landfills and abandoned sewer lagoon
- FAA approval needed – Environmental Document

Growth is Happening!
## Traffic Volumes

<table>
<thead>
<tr>
<th>Link</th>
<th>2018 Model Volume</th>
<th>2040 Model Volume</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orchard Street, south of Victory Road</td>
<td>11,300</td>
<td>27,700</td>
<td>145%</td>
</tr>
<tr>
<td>Orchard Street, north of Gowen Road</td>
<td>8,100</td>
<td>24,600</td>
<td>204%</td>
</tr>
<tr>
<td>Orchard Street Extension, south of Gowen Road</td>
<td>3,700</td>
<td>19,100</td>
<td>416%</td>
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## Airport Master Plan
2009 Boise Airport Study and Preliminary Design

Environmental and other site issues

- Known hazards in project corridor
  - Landfills
  - Monitoring wells
  - Abandoned sewage lagoons
  - Significant public and private utilities
  - Proximity to airport
FAA NEPA Coordination

- Coordination with FAA
- Land Exchange
- Determine NEPA Documentation
  - CAT EX vs EA

Audience Survey

- Type your thoughts in the chat:
  - What do you envision the biggest issue(s) will be?
  - What should the primary project goals be?
Study Process

- Develop 2040 Traffic Forecasts and Existing Conditions Analysis
- Identify and Screen Initial Concepts
- Identify and Evaluate Alternatives
- Develop Final Recommendations including Phasing Sequence

Stakeholder Advisory Group

- **Meeting #1 – Listen and learn**
  - Introduction to study process
  - Learn about stakeholder needs, ideas, issues, or concerns that the study team should consider

- **Meeting #2 – Consider options**
  - Review initial concepts
  - Discuss advantages and disadvantages for each concept
  - Discuss/suggest changes or refinements to concepts, or additional concepts
  - Listen and learn some more

- **Meeting #3 – Evaluate options**
  - Review draft evaluation matrix and preliminary recommendations
  - Provide feedback and suggest modifications
  - Listen and learn some more
Hands-on Stakeholder Engagement

Major Stakeholders - Concerns

- ACHD
- Airport
- City of Boise
- Gowen Field (Airforce National Guard)
- Knife River
- Valley Regional Transit
- Other Private
Design Concept Development Evaluation

- Identify **Initial Options**
- **Screen** Initial Options
- **Create** Concepts
- **Develop and Evaluate** Alternatives
- **Refine** Alternatives into Conceptual Designs
- **Make Recommendations** based on final evaluation and implementation considerations

Design Alternatives Evaluation

- Potential Criteria (evolved)
  - Traffic operations
  - Non-motorized user performance
  - User safety
  - Design impacts and costs
    - Horizontal
    - Vertical
    - Drainage & Stormwater BMP
    - Right-of-way
  - Environmental impacts
  - Land use/business impacts
  - Others as identified
Initial Public Outreach

Q1: How do you primarily use Orchard Street from I-84 to Gowen Road?

- Commuting to/from work: 70%
- Shopping or running errands: 10%
- Recreation and/or exercise: 2%
- I do not use Orchard Street: 2%
- Other (please specify): 5%

Answered: 787  Skipped: 3
**Q2** What method of transportation do you most often use on this section of Orchard Street?

**Answered: 750  Skipped: 0**

- **Car/truck/motorcycle**
- **Bus**
- **Walk**
- **Bicycle**
- **Rideshare (carpool, ...)**
- **Other (please specify)**

**Q3** What times do you most use this section of Orchard Street? (Please check all that apply.)

**Answered: 784  Skipped: 6**

- **6 am to 9 am**
- **9 am to 12 pm**
- **12 pm to 4 pm**
- **4 pm to 7 pm**
- **7 pm to 10 pm**
**Q4** Current issues you're experiencing

- High volume of traffic, congestions, and long travel time down this corridor.
- Speeding in the corridor
- Poorly synced/timed signals
- Dangerous merge section where Orchard tapers from two lanes to one lane.
- No facilities for bikes and pedestrians
- Difficulty turning left at non-signaled intersections during rush hour
- Poor sight distance and heavy congestion at the Orchard/Gowen/Harvard intersection

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**Q5** What should our priorities be as we consider future improvements? (Rank in order of priority, 1 being the most important.)

- Traffic flow
- Pedestrian and bicyclist...
- Safety
- Cost
- Property access

Answered: 734  Skipped: 56

Average Ranking:

<table>
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<tr>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
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</table>
Concerns that should be considered

- Consideration of future growth
- Dedicated turn lanes at intersections
- Signal at Diamond intersection to better facilitate left turns
- Finding a way to better accommodate heavy trucks
- Making sure the roadway is safe for pedestrians and cyclists
- Enhanced aesthetics for the corridor (landscaping)
Concept 1

- Roundabout control at major access points
- Left turn access to properties fronting Orchard St limited to roundabouts
- Limited Access. Limited right-in/right-out only access granted
- Connection to existing Orchard St via Diamond St (north); Dorman St (south)
- Gowen Rd disconnected from existing Orchard Rd and Harvard St
- Gowen Rd realigned
- Harvard St connected to existing Orchard St
Conceptual Cross Section 1

- Traffic signal control at major access points
- Left turn access properties fronting Orchard St limited to signals
- No additional access granted
- Connection to existing Orchard St via Diamond St (north); Aeronca St (south)
- Orchard St cut off north of Harvard St
- Gowen Rd realigned and new “T” intersection with Harvard St
Stakeholder Meeting #2

- Reviewed Concepts
- Feedback
  - Like roundabouts for easy left turn access and less delay
  - Concern about access to Gowen Field, Valley Regional Transit, and Airport Parcel
  - Preferred multiuse path vs bike lanes
  - Preferred narrower lanes (closer to 12’)

Evolution of ACHD Concerns

- NEPA – not the biggest concern
- Oversized Overweight Loads
- Stakeholder Coordination
- Multiple landfills, environmental concerns
Alternative Development

Project Challenges

- Existing landfills
- Coordination with partner agencies
- Pedestrian access over New York Canal
- Oversized overweight vehicles
- Boise Airport Runway Protection Zone
- Significant Utilities
- Complex Drainage
Multiple Landfills

Coordination with Partner Agencies and Stakeholders
Pedestrian Access over New York Canal

Oversized Overweight Truck Analysis
Utilities

- Ten major utilities within project area
- Utilities within the Existing Orchard Street Corridor to remain unless utility owner plans to relocate themselves
- Coordination with City of Boise on Sewer extension/relocation
- Monitoring well relocations
- Potential impacts to Intermountain Gas fire training facility at Dorman
Complex Drainage Solution

Proposed Drainage Areas

Alternatives Cross Sections

Orchard Street Cross Section | Approx 100' Right-of-Way

Alternative 1
Aerial/Dorman Cross Section | Approx. 24'

Alternative 2
Dorman Street Connector Roadway | Approx. 58'
Alternative #1

- Four lane Orchard Street with a raised center median
- 10-ft wide shared-use paths
- Pedestrian and cyclist connections between realigned Orchard Street and existing Orchard Street.
- Realigned Gowen Road to provide a curve designed for 40 mph in the vicinity of existing Orchard Street/Harvard Street.
- Full movement intersection at Diamond Street and realigned Orchard Street.
- Full movement intersection with realigned Orchard Street at either Dorman Street or Aeronca Street - with roundabout control at Dorman Street - with the option of roundabout or signal control at Aeronca Street
- Full movement intersection with realigned Orchard Street at Gowen Road with either signalized or roundabout control.
Alternative #2

- Four lane Orchard Street with a raised center median
- 10-ft wide shared-use paths on both sides of realigned Orchard Street and on both sides of Gowen Road between realigned Orchard Street and existing Orchard Street.
- Realigned Gowen Road to provide a curve designed for 40 mph in the vicinity of existing Orchard Street/Harvard Street
- Full movement intersection with realigned Orchard Street at Dorman Street with roundabout control
- Full movement intersection at Diamond Street and realigned Orchard Street Full movement intersection with realigned Orchard Street at Gowen Road with either signalized or roundabout control
Harvard Street/Gowen Road/Ex. Orchard Street Intersection

Option 1  Option 2  Option 3

Audience Survey

- Type response in Chat
- Which alternative do you like best and why?
Stakeholder Meeting #3 and Public Comments

**Alternatives Comparison**

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<tbody>
<tr>
<td>Traffic Movement/Efficiency</td>
<td>Signalized</td>
<td>Signalized</td>
<td>Signalized</td>
<td>Excellent</td>
<td>Excellent</td>
<td>Excellent</td>
</tr>
<tr>
<td>Traffic Safety</td>
<td>Roundabout</td>
<td>Roundabout</td>
<td>Roundabout</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>Access to Land/Future Plans</td>
<td>Signalized</td>
<td>Signalized</td>
<td>Signalized</td>
<td>Neutral</td>
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<tr>
<td>Truck Movement</td>
<td>Roundabout</td>
<td>Roundabout</td>
<td>Roundabout</td>
<td>Fair</td>
<td>Fair</td>
<td>Fair</td>
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<tr>
<td>Bicycle/Pedestrian Mobility</td>
<td>Signalized</td>
<td>Signalized</td>
<td>Signalized</td>
<td>Poor</td>
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<td>Poor</td>
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<tr>
<td>Cost</td>
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<td>Signalized</td>
<td>Excellent</td>
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<td>Excellent</td>
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<tr>
<td>Constructability/Risk</td>
<td>Roundabout</td>
<td>Roundabout</td>
<td>Roundabout</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
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Recommended Alternative

Final Recommendation Cross Sections

Orchard Street Cross Section

Gowen Road Cross Section
Recommended Project Phasing

<table>
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<tr>
<th>Phase 1</th>
<th>$6,200,000</th>
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* Construct Orchard Street/Diamond Street roundabout
* Construct all Orchard Street improvements from Diamond Street to just south of Victory Road
* Excavate Orchard Street within limits of North Historic Landfill

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<tr>
<th>Phase 2</th>
<th>$4,234,000</th>
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* Construct interim roundabout (and shared-use path to facilitate roundabout crossings) at Orchard Street/Gowen Road and associated widening of the Orchard Street Extension south of Gowen and Gowen Road
* Reconstruct culvert under Gowen Road

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<tr>
<th>Phase 3</th>
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* Construct realigned Orchard Street and connect Diamond Street and Gowen Road roundabouts constructed in Phases 1 and 2
* Construct shared-use path along both sides of realigned Orchard Street
* Construct Orchard Street/Dorman Street roundabout and provide stub out for future tie into Dorman Street connection

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<tr>
<th>Phase 4</th>
<th>$1,598,000</th>
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* Construct reconfigured intersection at existing Orchard Street/Gowen Road/Harvard Street
* Construct shared-use path between existing Orchard Street/Gowen Road/Harvard Street intersection and realigned Orchard Street/Gowen Road intersection

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<th>Phase 5</th>
<th>$1,407,000</th>
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* Expand roundabout at realigned Orchard Street/Gowen Road intersection (anticipated to be needed after year 2038)

**Total = $19,502,000**
Project Lessons Learned

Balancing Project Team/Stakeholder Concerns

- Dynamic team
  - Technical staff, planners, agency/stakeholder representatives
- Stakeholder Concerns
  - One-on-one meetings
- Transitioning PMs
- New Consultant
- Elected Official Buy-in
Current Project Status

Current Status

- Currently in Design (Summer 2020-Fall 2021)
  - Changes since adoption
- Right-of-Way Phase 2022-2023
- Construction to follow Right-of-Way over two years
Thank You!
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Molly Loucks – molly.loucks@burgessniple.com

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