CONNECTING CENTRAL WINDSOR

Presentation to the
Sonoma County Transportation Authority Citizens Advisory Committee

September 25, 2017
• In March 2016, the Town of Windsor applied for a Measure M grant for bicycle-pedestrian studies
• The SCTA Board approved the requested Measure M program funding in the amount of $250,000
• Town of Windsor has invoiced SCTA for a total of $232,507
  • This presentation will provide a brief overview of the project and work completed thus far
• Remaining Measure M appropriation in the amount of $17,793
  • Anticipated work consists of completing the Connecting Windsor Feasibility Study, which will include 15% drawings and content to help the Town move the project into the Caltrans PID phase.
  • Work is anticipated to conclude in December 2017
PRESENTATION OUTLINE

- Purpose & Need Overview
- Analysis & Community Input
- Goals & Key Solutions

Visit www.ConnectingWindsor.com for more information
ACTIVE TRANSPORTATION BENEFITS

• Individual & Community Health
• Modal Shift & Greenhouse Gas Reduction
• Local Business Revenue
• Increased Property Values
• Tourism
A TOWN DIVIDED

CONNECTING WINDSOR
OLD RED CROSSING SERVES MAJORITY OF TOWN

CONNECTING WINDSOR
EXISTING OLD REDWOOD HIGHWAY UNDERPASS

Insufficient Width for Compliant Bike Lanes
• Caltrans Highway Design Manual 1003.1(3)
• AASHTO Guide to the Development of Bicycle Facilities Section 4.6.4
• Town of Windsor Complete Street Design Guidelines

Insufficient Width for Compliant Shared-Use Pathway
• Caltrans Highway Design Manual 1003.1(1)a-b
• AASHTO Guide to the Development of Bicycle Facilities Section 5.2.1
OLD REDWOOD HIGHWAY UNDERPASS VICINITY

Vicinity of crossing dominated by pavement

No place to pause and view creek
OLD REDWOOD HIGHWAY BIKE/PED ISSUES

- WIDE STREET
  - DIFFICULT TO CROSS
  - CONTRA-FLOW CYCLING

- LIMITED WIDTH AT UNDERPASS
  - SUBSTANDARD BIKE LANES
  - BIKES USE SIDEWALKS

- RAMP INTERSECTION GEOMETRICS
  - HIGH SPEED VEHICLE TURNS
  - LONG CROSSWALKS

- HEAVY TRAFFIC
  - DIFFICULT TO CROSS

CONNECTING WINDSOR
PUBLIC ENGAGEMENT MEETINGS

- Two Public Workshops
- Hotel and Business Stakeholders
- Community Organizations
- School Superintendent, Safe Routes to School, Police and Fire
- Spanish-Speaking Community
- Gas Station Stakeholders
- Caltrans

For meeting materials and more information, visit www.ConnectingWindsor.com
1st CONNECTING WINDSOR SURVEY (19 questions, 288 respondents)

- Most find Underpass Uncomfortable
- Half of Bikers use Sidewalk
- Top Priorities: Safety and Connectivity
- Main Safety Concern: Intersections (78%)
- Mode Separation Desired (75%)
- Additional Crossing Needed (72%)
2nd CONNECTING WINDSOR SURVEY (11 questions, 466 respondents)

• The project is important (80%)
• Preserving open spaces is important (77%)
• An additional crossing is needed (80%)
• 90% primarily drive, with slightly more occasional walkers than bikers
• People would walk or bike more if the project’s improvements were implemented (74%)
• Main safety concerns:
  • Intersections (37%)
  • BOTH intersections and underpass space (31%)
• A third of respondents believe marginal reductions in congestion would be worth the cost of a slip ramp to US 101 North.
GOALS

• Overall Goal
  • Reconnect A Town Divided by Hwy 101

• Design Goals
  • Improve Safety for All Travel Modes
  • Encourage Cycling and Walking
  • Create Inviting Public Spaces
  • Accommodate Future Changes & Development
INTEGRATED STUDY

• Planning & Urban Design
  • Transportation Planning Study for Central Windsor
• Architecture
  • Underpass Beautification Study
• Engineering Studies
  1. U.S. 101 underpass geometric improvements
  2. New undercrossing
  3. New overcrossing
  4. Roadway modifications
  5. Gas station area development plan
• Public Engagement
COMPONENTS STUDIED

1. Old Redwood Highway Underpass
2. Old Redwood Highway Streetscape
3. Old Redwood Highway Promenade
4. Lakewood Slip Ramp
5. Conde Pathways
6. Lakewood-Amigos Pathway
7. New Car-Free Undercrossing
8. New Car-Free Overcrossing
BEAUTIFICATION & UNDERPASS IMPROVEMENTS

EXISTING

BEAUTIFICATION EXAMPLE

IMPROVED UNDERCROSSING
Wider sidewalks and new bi-directional protected bike lanes
New planting and lighting
Color treatments on concrete surfaces

CONNECTING WINDSOR
EXISTING UNDERPASS CONDITIONS

CONNECTING WINDSOR
EXISTING UNDERPASS CONDITIONS

CONNECTING WINDSOR
NEW TIE-BACK WALL

Protected Two-Way Bike Lanes + 12-foot Sidewalk
NEW TIE-BACK WALL

Protected Two-Way Bike Lanes + 12-foot Sidewalk
PLACEMAKING

Windsor Town Green

Broadway, Manhattan
MINI PUBLIC PLAZAS AT MIXING ZONES IMPROVE PEDESTRIAN EXPERIENCE
OPEN SPACE NETWORK & AXES

CONNECTING WINDSOR
CENTRAL OPEN SPACE & PROMENADE
CONNECTING WINDSOR
STREET IMPROVEMENTS

CONNECTING WINDSOR

REDESIGNED INTERSECTIONS
- Shorter Crosswalk
- New Crosswalk
- Squared corners to slow vehicle turning

BI-DIRECTIONAL PROTECTED BIKE LANE BOTH SIDES OF STREET

NEW POCKET PARK

IMPROVED UNDERCROSSING
- Wider sidewalks and new bi-directional protected bike lanes
- New planting and lighting
- Color treatments on concrete surfaces

NEW CROSSWALK / CROSSLINK

TOUCHDOWN PLAZA WITH SEATING

Conde Ln
PROTECTED BIKE LANES

EXISTING

PROPOSED

CONNECTING WINDSOR
WHY BUILD PROTECTED BIKE Lanes?

WHAT ARE THEY?
Protected bike lanes put a barrier between drivers and bike riders. The barrier can be parked cars, plastic posts, or planters. They are popular in cities with high amounts of bike riders for everyday use.

GOOD FOR SAFETY
89% fewer injuries among bike riders on streets with protected bike lanes.
Bike- and pedestrian-friendly street design leads to less collisions, even when there are more people out!

DRIVERS don’t have to worry about unexpected bike maneuvers.
PEDESTRIANS don’t have to worry about bike riders on the sidewalks.

GOOD FOR BUSINESS
9th Ave in New York City saw a 49% increase in business after protected bike lanes were installed. They also saw a 33% increase.

More bike traffic on Kinzie St in Chicago after a protected bike lane was installed.

A Portland study found bike riders will go out of their way to a street with good bike infrastructure. That’s more business exposure.

Pedestrians and bike riders in Toronto SPENT THE MOST MONEY and visited stores more often. Maybe because it costs less to walk or bike?

GOOD FOR LAWFULNESS
In Chicago, protected bike lanes have resulted in a 101% increase in the number of bike riders obeying the stoplight.

GOOD FOR EVERYONE
71% of Americans have expressed interest in riding a bike more often, but find it unsafe. Are you one of them?

LESS car in traffic, causes less pollution, less wear on the road (and therefore less taxpayer-funded maintenance), and creates a healthier population.

LIKE PROTECTED BIKE Lanes?
TELL YOUR LOCAL ELECTED OFFICIALS!

1. New York City DOT
2. Chicago Department of Transportation
3. Portland Bureau of Transportation
4. Bike to Work Day - Alamada County
5. American Planning Association
6. Smart Growth America
7. Active Transportation Alliance
8. Transportation Alternatives
9. Alameda County Bicycle Coalition
10. Bike to Work Day - Alameda County

Alameda, CA
Many alternatives studied:
- Existing culvert
- New tunnel and raised roadways
- Open-air underpass alongside Windsor Creek

Recommended alternative provides Windsor Creek experience
### CAR-FREE UNDERCROSSING ALTERNATIVES

<table>
<thead>
<tr>
<th>Alternative</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
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</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>Add Pathway within Existing Culvert</td>
<td>New Tunnel Under Raised SB Ramp, Freeway, and NB Ramp</td>
<td>New Tunnel Under Freeway Only; Crosswalks at Ramps</td>
<td>Raised Freeway and Ramps</td>
<td>Series of Short Bike/Ped Tunnels Adjacent to Existing Culvert</td>
<td>New Pathway and Opened Culvert under Roadway Bridges</td>
</tr>
<tr>
<td><strong>Geometry</strong></td>
<td>400' long tunnel</td>
<td>300' long tunnel</td>
<td>155’ long tunnel</td>
<td>300’ wide open space under freeway</td>
<td>Five 25’ to 50’ long tunnels</td>
<td>Five 25’ to 50’ long overpasses</td>
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<tr>
<td><strong>User Experience</strong></td>
<td>Challenging</td>
<td>Challenging</td>
<td>Challenging</td>
<td>Excellent</td>
<td>Good</td>
<td>Very Good</td>
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<tr>
<td><strong>Safety</strong></td>
<td>Good</td>
<td>Good</td>
<td>Poor</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
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<tr>
<td><strong>Security</strong></td>
<td>Poor</td>
<td>Poor</td>
<td>Poor</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
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<tr>
<td><strong>Flooding Potential</strong>*</td>
<td>Frequent</td>
<td>Negligible</td>
<td>Negligible</td>
<td>Negligible</td>
<td>50-100 year frequency</td>
<td>50-100 year frequency</td>
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<tr>
<td><strong>Top of Bike/Ped Traveled Way (elev.)</strong></td>
<td>107’</td>
<td>119’</td>
<td>119’</td>
<td>119’</td>
<td>109’</td>
<td>109’</td>
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<tr>
<td><strong>Caltrans Approval</strong></td>
<td>Very Challenging</td>
<td>Challenging</td>
<td>Very Unlikely</td>
<td>Very Challenging</td>
<td>Challenging</td>
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<td><strong>Estimated Construction Cost</strong></td>
<td>$2M Range</td>
<td>$20M Range</td>
<td>$10-15M Range</td>
<td>Very High</td>
<td>$7.5M Range</td>
<td>$16M Range</td>
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*100-year flood level elev. at 113’
UNDERCROSSING ALTERNATIVES E & F

E. Series of Short Bike/Ped Tunnels Adjacent to Existing Culvert

F. New Pathway and Opened Culvert under Roadway Bridges
UNDERCROSSING ALTERNATIVE E

Series of Short Bike/Ped Tunnels Adjacent to Existing Culvert
New Pathway and Opened Culvert under Roadway Bridges
OVERCROSSING ALTERNATIVES COMPARISON

CONNECTING WINDSOR

<table>
<thead>
<tr>
<th>Design Score</th>
<th>Link 1</th>
<th>Link 2</th>
<th>Link 3</th>
<th>Link 4</th>
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SCTA CAC PRESENTATION 09/25/2017
THANK YOU!
BACKUP SLIDES FOR Q&A
SQUARED INTERSECTIONS

CONNECTING WINDSOR
CONNECTING WINDSOR
Option 3: Trucks Enter South - Exit North

Pros:
- Cars can enter and exit on both North and South sides
- Adequate space for Bicycle-Pedestrian promenade
- Separation between Chevron and Shell stations’ access
- Efficient turn around for the trucks to go back to the freeway

Cons:
- Exit only for trucks on North side
BEAUTIFICATION OPTIONS

GREEN WALLS

MURALS

LIGHTING & COLOR
RIGHT-TURN SLIP LANE TO US 101

• Divert traffic from dangerous crosswalk
• Overall reduction of delay
• Improved PM level of service on Lakewood southbound
• Improved PM level of service on eastbound left-turn from ORH
• Rectangular Rapid Flashing Beacon for crosswalk at existing on-ramp entrance
• Crossbikes alongside crosswalks
LAKEWOOD-AMIGOS PATH
New shared-use pathway with landscaping, trees, lighting

CONDE PATHWAYS
Enhanced Windsor Creek experience
Widened pedestrian paths
New landscaping, trees, lighting, surface treatments, public art
LAKEWOOD-AMIGOS PATH
<table>
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<th>Project</th>
<th>Cost Range</th>
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<tbody>
<tr>
<td>Underpass Improvements</td>
<td>$2-3.9</td>
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<td>Streetscape Improvements</td>
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<td>ORH Promenade</td>
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<td>Conde Pathways</td>
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<td>Lakewood-Amigos Pathway</td>
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