Redwood Business Park and Talmage Road Interchange Project, Shared Success Two Projects, One Commercial Corridor
Project Drivers

• Address Impacts Identified in Multiple EIRs & Studies
  – Route 101 Corridor Interchange Study (2005)
  – Airport Industrial Park Mitigation & Monitoring Plan (2007)
  – Walmart Expansion EIR (2011)
  – Ukiah Costco EIR (2016)
  – Talmage Road Interchange EIR (2016)

• Address Other Issues
  – Accommodate planned commercial development (Costco)
  – Improve Intersection Geometry (Truck Turns)
  – Address Pavement Condition (Poor)

• Address New Regulations & Other Issues
  – Reconstruction of roadways requires implementation of LID
  – Shallow utilities
Analysis, Coordination, etc.

- Project-specific studies prepared to verify and validate recommended improvements
- 7 Interchange alternatives analyzed, including 2 roundabout options
- Arborist report for management of large redwood trees with shallow roots in medians
- Geotechnical investigation for pavements and retaining walls
- Hazmat investigation for ADL and hydrocarbons
- Wetland delineation, USACE & RWQCB permitting
- Air quality and noise abatement studies
- Biological assessment (nesting raptors)
Analysis, Coordination, etc.

- Caltrans D1 coordination, permitting and oversight
- R/W Relinquishment from City of Caltrans for SB off-ramp
- R/W Relinquishment from Caltrans to City on Talmage Road
- Private property owner easement negotiations to widen Hastings Ave
- Ukiah Airport fly zone analysis & coordination (FAA regulations)
- Costco design coordination
- AT&T and PG&E utility coordination (relocation gas main & overhead)
- Funding required non-traditional bid/construction
Address Impacts from EIRs & Studies

• **Route 101 Corridor Interchange Study (2005)**
  – Change interchange to tight diamond or modify partial cloverleaf
  – Signalize NB and SB ramp intersections
  – Widen US 101 overcrossing from 2 lanes to 4 lanes

• **Airport Industrial Park Mitigation & Monitoring Plan (2007)**
  – Reconfigure lanes at SB off-ramp and WB Talmage Rd.
  – Provide dual left-turns lanes from WB Talmage Rd. to SB Airport Park Blvd.
  – Signalize Commerce Drive / Airport Park Blvd with dedicated EB and WB LT Lanes
  – Widen / restripe S. State Street / Hastings Ave. intersection for dedicated EB and WB left-turn Lanes

• **Walmart Expansion EIR (2011) and Costco EIR (2016)**
  – Confirmed Airport Industrial Park M&M Plan Recommendations
TRUCK TURNS & QUEUING

EXISTING ISSUES

NO SOUTHERN ACCESS

FUTURE DEVELOPMENT

COSTCO

QUEUING

LOS “F”

LOS “E”

LOS “F”

PROJECT LIMITS
WIDEN, FULL-DEPTH RECONSTRUCTION & MODIFY SIGNAL

PROJECT IMPROVEMENTS

OVERLAY WITH INTERLAYER

FUTURE DEVELOPMENT

PROJECT LIMITS

2 LANE OFF RAMP

SB OFF & WB SIGNAL

MODIFY SIGNAL & GEOMETRY

NEW SIGNAL

FULL-DEPTH RECONSTRUCT

OVERLAY WITH INTERLAYER

WIDEN, FULL-DEPTH RECONSTRUCTION & MODIFY SIGNAL

PROJECT IMPROVEMENTS
Talmage Road Interchange Issues

- LOS “F”
- MERGE
- SIDESWIPES
- EXCESSIVE QUEUING
- SB TO WB STOP CONTROL
- ILLEGAL LT T-BONES

MERGE SIDESWIPES
Talmage Road Interchange Solution

- LOS “C”
- MINOR R/W RELINQUISHMENT
- DUAL LANES (STATE ST OR AIRPORT PARK BLVD)
- SB/WB SIGNAL
- DUAL THRU LANES
- RAISED MEDIAN
- EB MERGE
- YIELD
- CROSSING 32ND ST
Airport Park Blvd/Talmage Rd Issues

TIGHT TURNING RADII

LOS “E”

SINGLE LT LANE
Airport Park Blvd/Talmage Rd Solution

- Widen to R/W
- Dual left-turn lanes to Airport Park Boulevard
- Raised median
- Larger corner radius

LOS “C”
Airport Park Blvd/Talmage Rd Solution

WIDENING TO ACCOMMODATE LEFT TURNING TRUCKS

LOS “C”
Pavement & Shallow Utilities

Traffic Index: 10.5 – 11.5
R-Value: 15

Traditional Pavement Section
• Section: 7” HMA over 21” AB

Material Innovations
• Mirafi RS580i Subgrade Geotextile
• Forta-Fi® Aramid Fiber in HMA
• Section: 7” HMA over 14” AB
• 50% increase in pavement life (estimated)

Overlay Areas
• Mirafi MTK Paving Fabric
• Leveling Coarse for Crown Correction (2%-4% slope)
• Pacific Geosource RG1010
• Forta-Fi® Aramid Fiber in HMA

Savings: $1.2 Million
LID Required for Road Reconstruction

Innovative Approach in Developed Environment

• 100% Volume Capture
• Tire Derived Aggregate
• New application supported by published research conducted at Humboldt State University
• CalRecycle Grant funded 100% of design, materials, testing and part of installation
• Approved by RWQCB Region 1
LID Design

- Install upstream of existing catch basins
- Integrated into existing landscaping
- Moisture barrier adjacent to pavement and existing joint trench utilities

~$100k in Savings
Diverted ~35,000 tires from California Landfills
Project Funding

- Overall project construction cost $7.1 Million
- California Infrastructure Bank (I-Bank) loan
- Requires pre-qualification of contractors (good thing)
- Requires projects be bid as “Lump Sum”

Project Bidding

- Project was bid as 2 separate projects
  - Talmage Road Interchange (State R/W)
  - Redwood Business Park Transportation Improvements (City R/W)
- Bids staggered by ~30 days (strategy and schedule)
- 4 bids on Redwood Business Park Project
- 3 bids on Talmage Road Interchange Project
Project Construction

- Construction began in October 2017 and was substantially complete by October 2018
- Critical deadline of mid-July 2018 was met to allow Costco to open (all paving complete and signals operational)
- Dry winter allowed for LID and median construction in January/February and roadway construction in April-July.
- CCOs on Redwood Business Park amounted to ~11% of bid, with less than 1.5% attributed to design or changed conditions
- CCOs on Talmage Road Interchanged amounted to ~8% of bid, most of which was attributed to changed conditions and Caltrans design changes after construction was completed
Project Outcomes

• Largest transportation improvement project undertaken by the City in decades
• Provides innovative long-term solution to transportation capacity and pavement condition in RBP and surrounding area
• Addresses long-standing issues which were holding back planned development of the Redwood Business Park
• Deadline and funding constraints were met
• Incorporated a lot of recycled material (TDA, CL2AB, RAP)
• Allowed a new employer in the community to open on schedule
• Project has received Local, State and National Recognition:
  – ACEC North Coast Chapter (Outstanding Public Works Project)
  – ACEC California (Honor Award)
  – ACEC National Engineering Excellence Award (Merit Award)
Questions?

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