



# OSM



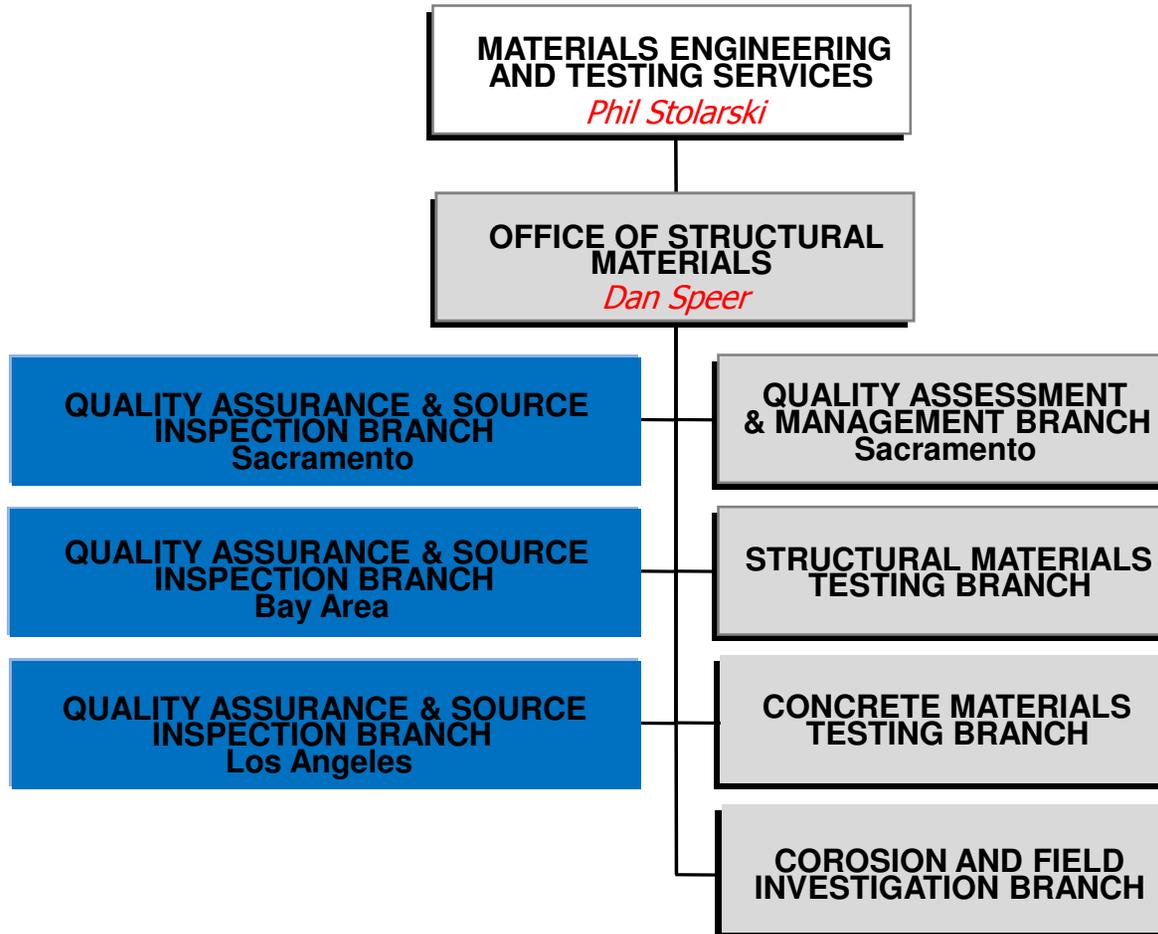
## What we Do

### **Description of the Office of Structural Materials and Consultant Services Needs**

*Presented by Keith Hoffman and Nina Choy  
From the Office of Structural Materials*



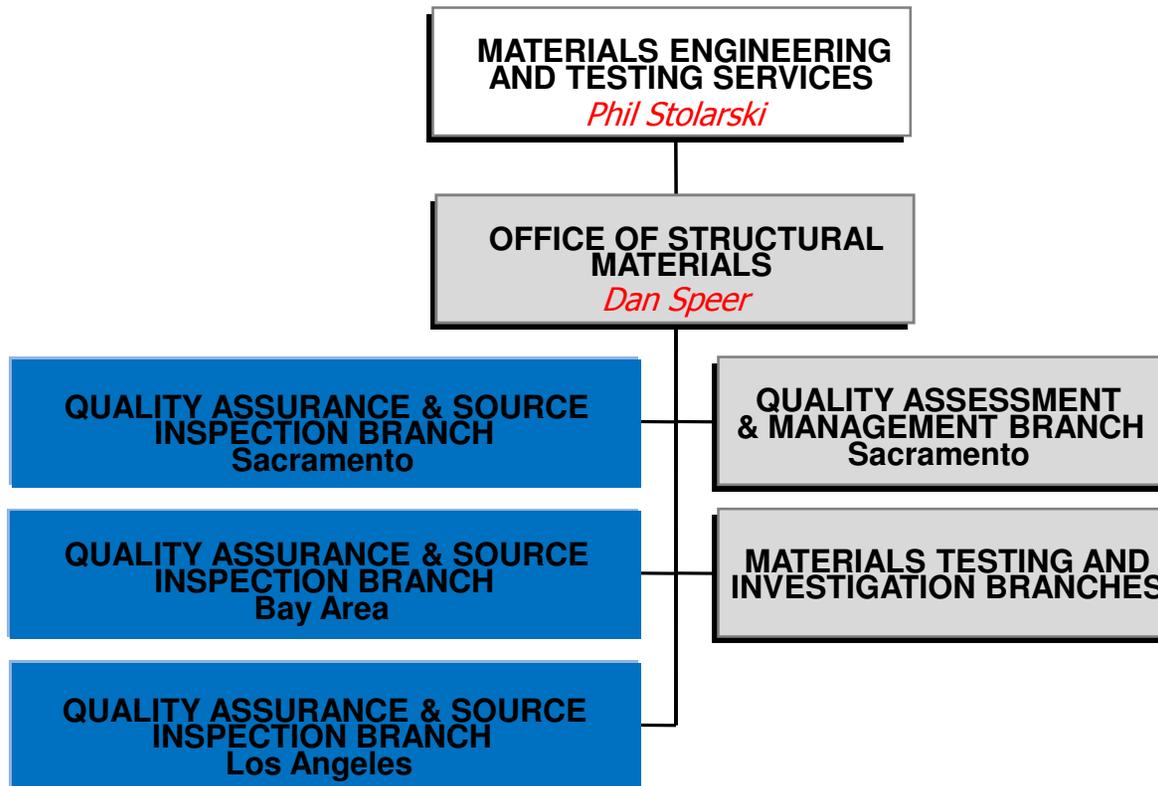
# OSM Organizational Chart



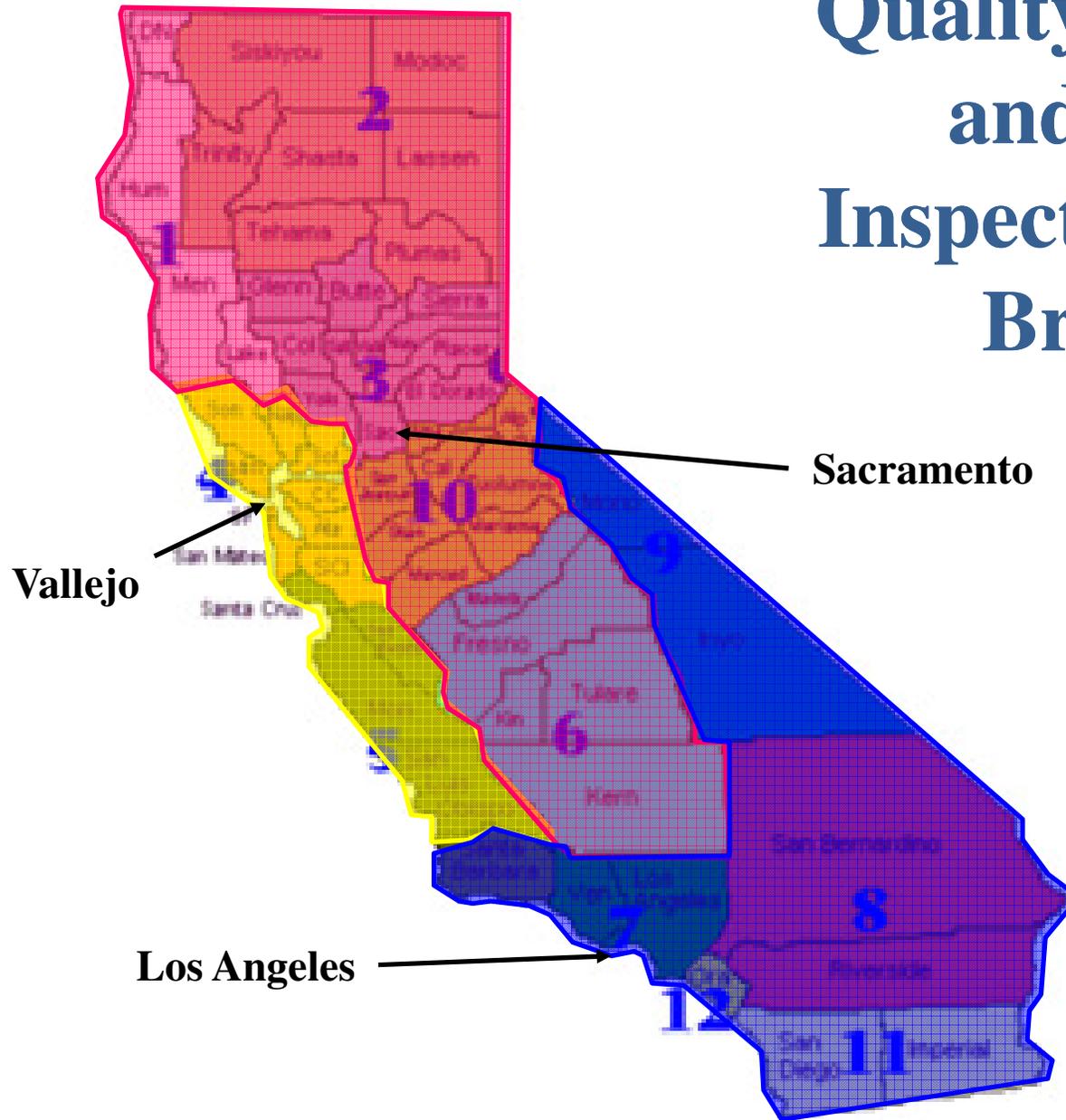
# The Office of Structural Materials

- **Quality Assurance and Source Inspection Branch (QASI)**
- **Quality Assessment and Management Branch (QAM)**
- **The Structural Materials Testing Branch (SMTL)**
  - **A2LA accredited lab tests structural products including reinforcing and pre-stressing steel, bearing pads, steel plates and rebar coupling systems.**
- **The Concrete Materials Testing Branch (CMTB)**
  - **Aggregate, Cement, and Concrete Laboratories conduct acceptance and prequalification testing of concrete materials for projects throughout the State.**
- **The Corrosion and Field Investigation Branch**
  - **The Field Investigation Team (FIT) conducts investigations and corrosion testing throughout the State for numerous functional units within the Department.**

# OSM Organizational Chart



# Quality Assurance and Source Inspection (QASI) Branches



- divided into three areas to facilitate inspections and staffing.

# Different Levels of Inspection

- **METS QA**
  - Award, Advertise, Administered by Caltrans
- **METS OVERSIGHT\*\***
  - Award, Advertise, Administered by Local Agency
- **METS IQA**
  - Alternate Delivery / Design Build Contracts
- **ENHANCED IQA**

**\*\*Conflict of interest may be an issue depending on service provided to LA**

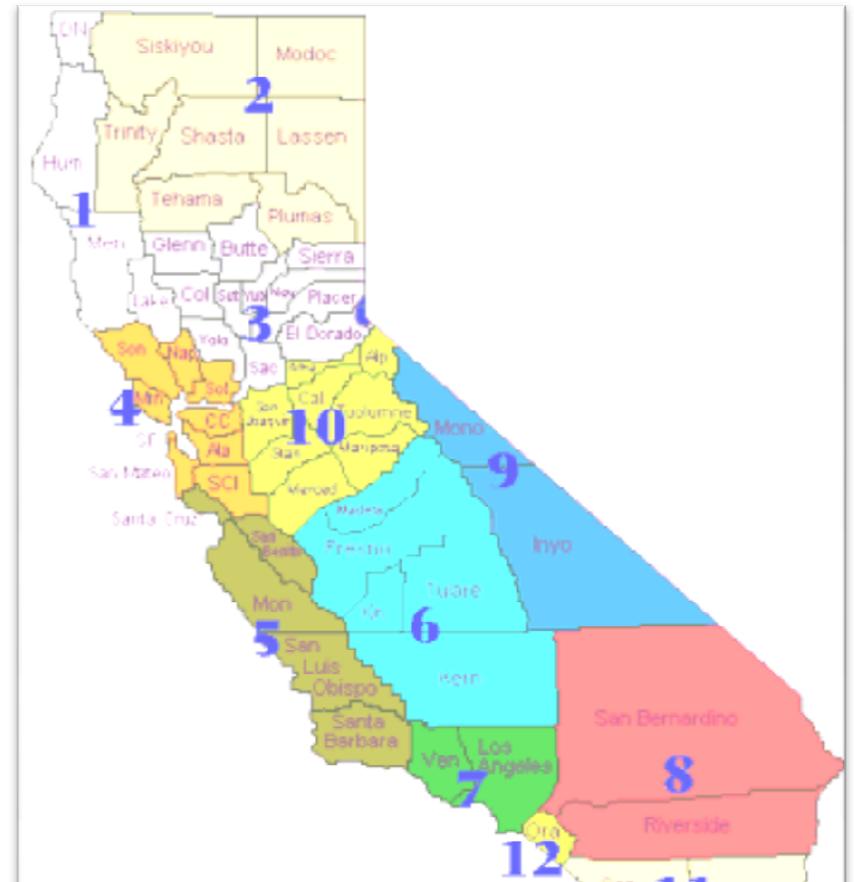


# Statewide Source Inspection A&E Contract

1. CT AAA & Local Agency Oversight
2. DPAC Pilot Selection Process

3 Years

\$25 Million



# Quality Assurance and Source Inspection (QASI) Branch

- **Coordinates inspection, sampling, and release of a wide variety of fabricated and manufactured products**
- **Determine level of inspection appropriate for a given product**
- **Verify that the structural materials for Caltrans contracts are compliant prior to arrival to the jobsite**
- **Provide fabrication inspection at the source**
- **Inspection occurs in state, out of state and internationally.**
- **May also observe field welding at job sites and review quality submittals.**
- **Develop specifications with design**
- **Coordinates with industry and fabricators regarding structural materials**



# Personnel Requirements

• <b>Project Manager</b>	3 years experience managing on-call contracts as a Project Manager. Must demonstrate knowledge in fabrication and erection of bridges
• <b>Structural Materials Representatives</b>	Qualifications equivalent to Caltrans Transportation (Civil), Range C or Range D
• <b>Welding Inspectors</b>	Certified as Certified Welding Inspector (CWI) in accordance with AWS QC-1. Fracture Critical (3 years bridge experience)
• <b>NDT Level III Inspector</b>	ASNT Level III certificate holder in UT, PT, MT and RT
• <b>NDT Inspector</b>	Level II per ASNT TC-1A in at least two of the following disciplines UT, RT, MT and PT
• <b>Pre-cast Concrete Inspector</b>	PCI Level II or III Certification
• <b>Paint and Coating Inspector</b>	NACE Certified Coating Inspector- Level III
• <b>Technical Experts</b>	Metallurgical Engineering, Welding Engineering, Corrosion Engineering, Failure analysis Engineering, Structural Concrete Engineering

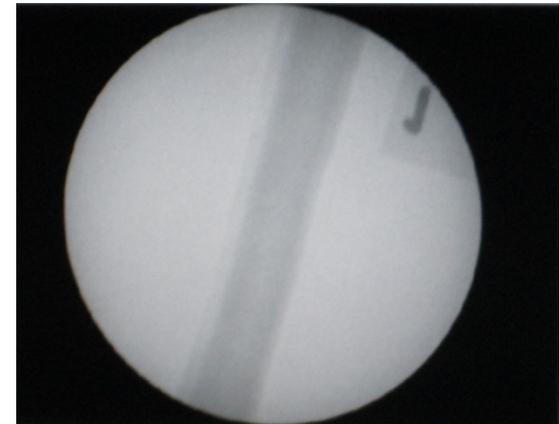
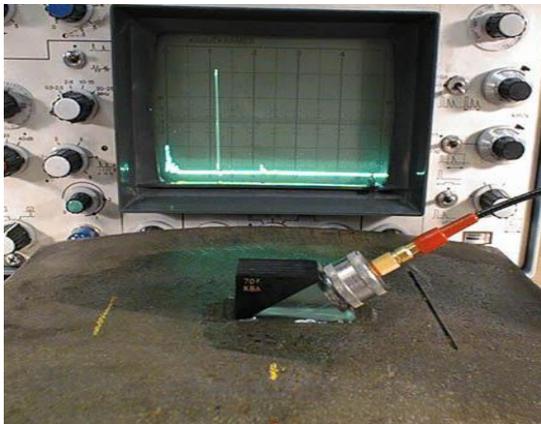
# The Function of the OSM Consultant

- A&E staff are integrated into OSM / Caltrans staff
- On-call Contract
- Provide inspection and engineering services for :
  - Capital Projects and Oversight of Local Agency Projects
  - Maintenance Contracts and Permit Jobs
  - Specialty Services (metallurgy, welding engineering, paint, timber, etc.)



# The Role of the OSM Consultant

1. Provide Level III Program to insure consultant's Level II inspectors are trained and qualified
  - ASNT-Certified Level III UT, RT, MT, and PT
  - Company conforms to ASNT TC-1A Written Practice



# The Role of the OSM Consultant

## 2. Provide Trained & Certified Inspectors

- CWI – Fracture Critical
- Level II UT, RT, MT & PT
- PCI Level II
- NACE Level III
- Perform QA Testing & Sampling
- Communicate with project team members
- Ability to navigate and interpret codes and specifications



# QASI Inspector Expectations

- **Highly trained and certified in:**

- Welding Inspection (CWI, NDT) – Fracture Critical
- Precast/Prestressed Concrete Inspection (PCI, ACI)
- Paint Inspection (NACE)
- Miscellaneous fabrication (timber, plastics, etc.)



- **Must stay current in specification changes and industry practices**
- **Inspect to verify that the fabricator's approved Quality Control plans are implemented effectively**
- **Identify non-conformance issues – clearly communicate to SMR**
- **Multiple certifications beneficial to OSM**



# The Role of the OSM Consultant

## 3. Provide Engineering staff – SMRs

- Regional responsibility assigned to one of the branches
- Single Point of Contact between OSM and
  - Construction
  - Fabricators
  - Other Caltrans functional units
- Interpret plans and specifications
- Ability to perform research of materials and documentation and make materials related decisions and recommendations
- Coordination between project team members



# The Structural Materials Representative (SMR)

- **Manages the Quality Assurance methodology for structural materials for each project, including shop drawing and control plan submittals**
- **Understands various fabrication practices and provides technical recommendations to Construction in a timely manner**
- **Need for SMRs to be flexible, resourceful and able to handle multiple projects concurrently.**
- **Effective communication to Construction, other OSM personnel, and Branch Seniors**



# The Role of the OSM Consultant

## 4. Expert recommendations

- **Welding Engineering (AWS D1.1, D1.5)**
- **Metallurgical Engineering**
- **Corrosion Engineering**
- **Failure Analysis**
- **Structural Concrete Engineering**



# Snapshot of CT Projects

1. Districts 1, 2, & 3 – 159 Active, Approx. 15-20 new per month
2. Districts 6 & 10 – 59 Active, Approx. 10-15 new per month
3. Districts 4 & 5 – 195 Active, Approx 25-30 new per month
4. Districts 7, 8, 9, 11, & 12 – 261 Active, Approx 35-40 new per month

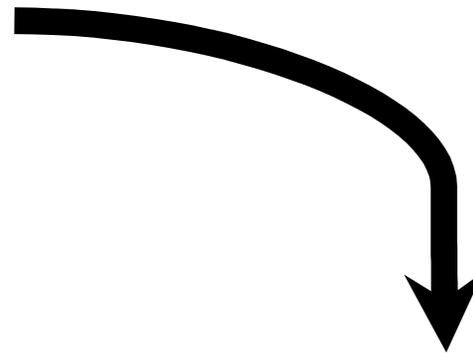
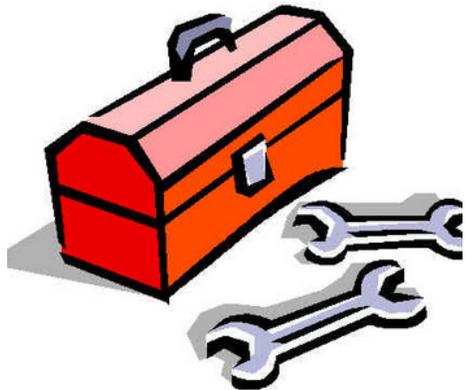
**Total 704 Active Contracts**

**Does not include all permit jobs, minor contracts,  
or cooperative agreement contracts**



# Typical Inspection of a Capital Project

1. **Dynamic** in nature. OSM is not always aware of fabrication schedule until the fabricator notifies OSM.
2. Inspections are managed and coordinated by State Dispatchers
3. Inspection is coordinated upon notification
  - Inspector is dispatched to review contract documents, set up travel, execute inspection, then document the inspection.
  - May have multiple projects inspected at one time, at various stages of production





Verification

**Contract Requirements**  
 |  
*Assurance that the structural materials delivered to the jobsite meet contract requirements*  
 |  
**Specifications & Codes**

Documentation

# Typical Capital Project

The screenshot shows a web browser window displaying the Caltrans OSM J2 database interface. The page header includes the text "project delivery engineering services materials engineering and testing services office of structural materials" and the date "Wednesday, October 17, 2012". The main content area displays the following information:

- Contract Number: 07138204 Project Number(EFIS): 0700000142
- According to the J2 database this project is currently active.
- Project Information
- Quality Assurance Service Level: Service Level 1 - METS will perform verification inspection, sampling, and testing for source inspection. Engineers, lab managers, dispatchers, task leaders, lab technicians and inspectors will perform their duties as outlined in their respective office policies and procedures.
- Location, etc.: County: LA Route: 47 Post Mile: 3.5/4.6,0.0/1.1 Working Days: 1090 Contract Type: Capital Buy America: Yes Final sum: \$180,259,999 Bridge sum: unknown Complete: unknown Description of Work: REPLACE STEEL BRIDGE WITH CIP PS CONCRETE BOX GIRDER BRIDGE AND RAMPS. Project Location: LOS ANGELES COUNTY IN LONG BEACH AND LOS ANGELES ON ROUTE 47 FROM OCEAN BOULEVARD TO ROUTE 103 JUNCTION AND ON ROUTE 103 FROM ROUTE 47 JUNCTION TO ANAHEIM STREET OVERHEAD
- Dates: Award: 06/30/2011 Suspension: N/A Acceptance: -not entered- Closeout: -not entered- SIPI Review: 10/01/2012 Bid item list sent to construction: Not sent
- Contract Documents Disposition: Specifications on file with OSM: Yes Plans on file with OSM: Yes Standard Specification Version: 2006 Standard Plan Version: 2006

**194 Bid Items, 26 of which OSM would typically inspect and release at the source of fabrication**

**Other OSM-related items released via programmatic inspection or by the RE at the jobsite**



- 1. Furnish Steel piling (2.4m) – Granite Falls, Washington (CWI + UT or RT)**
- 2. Furnish Steel piling (760mm) – St. Louis, Missouri (CWI+UT or RT)**
- 3. Furnish Steel piling (Class 625) - Unknown**
- 4. Drive Steel piling – Field welding (CWI + UT inspection)**
- 5. PTFE Sliding Bearings – Seattle, Washington (Sp. Training for Engineer or Inspector)**
- 6. Prestressing (CIP) strand – Unknown (typically Sumiden Wire Products, Stockton)**
- 7. Prestressing (CIP) anchorages – Unknown (Could be Avar in Campbell, CA or SDI, or other as proposed by Contractor)**
- 8. Joint Seal Assembly – Unknown (Could be Watson Bowman in Buffalo or D.S. Brown in Ohio)**
- 9. Rebar Couplers – Unknown**
- 10. Signal and Lighting Poles (Unknown, Omaha, Canton, Tulsa typ.)**



# Multiple inspection Locations

require **flexibility!**



# Consider the Signal and Lighting Source Inspection ...



- *1 inspector per shipment*
- **EXAMPLE:**
  - *3 contracts District 7*
  - *2 contracts District 3*
  - *4 contracts District 4*



# Consultants Roles

- Provide flexibility for Construction support
- Provide efficiency to work on multiple contracts
- Maintain consistency!



- **Keeps projects moving forward!**



# Conclusion

Thank you for your interest

Any Questions ???

Provide a safe, sustainable, integrated  
and efficient transportation system to enhance  
California's economy and livability

