



**Attachment 2**

**TYPE SELECTION ISSUES, TOPICS, AND ITEMS FOR CONSIDERATION**

- Project Description**
  - EA and CO-RTE-PM
  - Structure Names and Numbers
  - Vicinity Map
  - Purpose
  - General Plans for all structures and alternatives
  - Project Engineer and Architect
- Project Schedule**
  - Design Hours for each structure
  - Structures P&Q and PS&E dates
  - Critical dates for other functional units
  - Ability to meet schedule
  - Missing Design Data
- Previous Advance Planning Studies**
- Design Alternatives**
  - List Alternatives Considered
  - Structure Depth
  - Span Arrangements
  - Material Alternatives
  - Construction Alternatives
  - Describe Pros and Cons
- Accelerated Bridge Construction (ABC)**
  - ABC Decision Making Guidance (ABC Design Impact Questionnaire & ABC Decision Flowchart)
  - (see Structure Policy and Innovation intranet site)
- Physical Constraints**
  - Horizontal Clearance
  - Vertical Clearance
- Loads**
  - Special Loading Requirements
  - Construction Overloads
- Adjacent Structures**
  - Clearances
  - Transition to other structures
- Existing Bridge**
  - Removal/Replacement
  - Strengthening
  - Widening Methods
- Future Widening**
  - Superstructure
  - Lower Roadway
  - Impacts on Current Project
- Frame Layout**
  - Hinge Locations
  - Selection Process
- Abutment**
  - Embankment Slopes
  - Seat, diaphragm, bin, strutted, rigid frame
  - Embankment surcharge and settlement
  - Approach Slabs
  - Slope Protection
  - Skew



- Bent/Pier Wall Types**
  - Number of Column/Bent
  - Drop Cap/Integral Cap
  - Column Fixity
  - Superstructure Fixity
  - Outrigger/C Bents
  - Skew
- Railing and Barriers**
  - Type
  - Rail Replacement Requirements
- Corrosion Issues**
- Signs and Lighting**
- Joints Seals**
- Deck Surfacing**
  - Additional Thickness for Quiet Deck Retrofit
  - Recommended surfacing (Polyester concrete, Multi-Layer Polymer, or AC)
  - Removal of existing surfacing (AC and deck membrane protective system)
  - Condition of existing deck (have cores been taken and evaluated by Translab?)
- Sidewalks/Medians**
- Hinge Access**
- Bearing Systems**
- Deck Drainage**
  - Design Rainfall Intensity
  - Inlet/Piping/Outlet Locations
  - Access openings
- Retaining Walls and Soundwalls**
  - Construction Materials
  - Special Design Required
- Utilities**
  - Type and location of utilities carried by structure
  - Future Utility Opening requirements
  - Interfering Underground and Overhead Utilities
  - Soffit openings
- Permits and Agreements Required**
- Railroad Requirements**
- Structure Type Recommendations**
  - Construction Costs
  - User-delay Costs

## **DISTRICT ISSUES**

- ADA Compliance**
- Presentations required for Outside Agencies**
- Commitments to outside Agencies**
- Environmental Constraints**
  - EIR Requirements
  - Protected species
  - Mitigation measures
  - Monitoring requirements
  - Construction Windows
  - Hazardous Waste
- Complete Streets**
- Context Sensitive Solutions**
- Construction Noise Issue**
- Noise Sensitive Area**



## **AESTHETICS ISSUES**

- Requirements of EIR, District, or other Agencies
- Sketches of architectural treatment

## **FOUNDATION ISSUES (Bridge and Earth Retaining Structures)**

- Preliminary Report
- Groundwater
- Soil Profile
- Foundation Testing Requirements
- Foundation and Pile Types
- Risks and Potential Construction Issues

## **SEISMIC ISSUES**

- Seismic Performance Criteria
- Seismic Analysis Methods
- Fault Magnitude and Distance from structure
- PGA & ARS
- Liquefaction Potential and Design methods
- Retrofit requirements
- Isolation Systems
- Critical Seismic Issues
- Peer Review Requirements
- Proposed New Criteria

## **MAINTENANCE ISSUES**

- Utilities
- Widen ability of existing bridges
- Repair/Rehabilitation
  - Deck Condition
  - Deck Seals
  - Joint Seals
  - Approach Slabs
  - Bearing Systems
- Hydraulics/Hydrology
  - Final Hydraulic Report
  - Waterway Area requirements
  - Scour depths and protection
  - Bank Protection
  - Construction Methods in Waterway
  - Pier Shapes, location and skew
  - Sea level Rise or Tsunami
- Special Railing Requirements
- Life-cycle Analysis

## **CONSTRUCTION ISSUES**

- Constructability
- Stage Construction
- Storage Facilities
- Distance to Nearest Batch Plant
- Construction Sequence Access



- Falsework**
  - Temporary Vertical Clearances
  - Temporary Opening Widths
  - Temporary Support Locations
- Traffic Control Issues**
  - Detours
  - Lane Reductions and Closures
  - Column/Footing Construction Requirements
  - K-Rail and Crash Cushions
  - Stage Construction
- Bridge Construction Impact**
  - (See Attachment 3)
- Possible Risk with Proposed Structure Type**

### **Risk Register**

- Update Project Risk Register (from APS Phase)**
- Identify New Risk from All Aformentioned Issues**
- Include Updated Project Risk Register During General Plan Distribution**