

Pre-Design Meeting Checklist for Stream Crossings DGR LVR Date: _____

Applicant: _____ **Road Name:** _____ **LAT/LONG:** _____

Applicant Reps: _____

CD Reps: _____

Additional Attendees: _____

Summarizes discussion points for an on-site meeting prior to project design. More information in Chapter 12 of the DGLVR Stream Crossing Replacement Technical Manual.

Project-Specific Discussion Points

- Discuss/Introduce Goals & Objectives of DGLVR Program Stream Crossings**
 - Restore stream through road profile (stream continuity)
 - Flood resiliency and ensures lifespan
 - Reduced Maintenance
 - Full Aquatic Organism Passage
- Provide Design Engineer with a copy of:**
 - Stream Crossing Design & Installation Standard
 - Stream Crossing Replacement Technical Manual

Project Management and Meetings

- Design engineer is required to attend the pre-design meeting at the location of the road/stream crossing replacement project**
- Design engineer may be required to attend the following additional meetings by the conservation district:**
 - Bid site showing
 - Bid selection / award meeting
 - Pre-construction meeting
 - Others: _____
- Communications from the grantee or Design engineer may be directed to:**
 - Contact Information: _____

Off Right of Way (ROW)

- Discuss who will obtain permission for project related Off ROW work**
 - Grantee _____ Design Engineer _____
 - Stream channel modifications including reference reach survey work
 - E&S controls areas and staging areas
 - Template Off ROW Consent Form on website

Site Survey & Mapping

- Must provide sufficient topographic survey and mapping to define or support the following:**
 - Project boundaries and disturbance areas
 - Existing roadway elevations, grades and profiles
 - Wetlands and other jurisdictional or regulated resource areas
 - Design of replacement structure and appurtenances
- Must establish two permanent benchmarks, located outside of disturbance area**
- Must collect sufficient site survey to support H&H analysis**

Hydraulic Analysis

- Must prepare an Hydrologic and Hydraulic (H&H) study that includes:**
 - Finished thalweg elevations and
 - Clearly labeled discharge values and water surface elevations at the proposed crossing inlet for Q2, Q10, Q25, Q50, and Q100
- Provide any additional H&H analysis necessary for applicable regulatory / permit requirements**

Geomorphic Assessment

- Required to base the project design on a longitudinal profile survey and cross-sectional surveys of existing conditions.**
 - Conservation district completed longitudinal profile and cross sections may be provided
 - Design Engineer may conduct their own longitudinal profile and cross sections
 - Conservation district must be present during engineer/surveyor collected long-pro
 - Details to be collected in the longitudinal profile and cross sections listed in the Stream Crossing Design & Installation Standard

Channel Design

- Using the longitudinal profile survey of existing site conditions, must provide a stream channel design extending upstream, through, and downstream of the replacement crossing that achieves the following:**
 - Provides long-term channel continuity and aquatic organism passage
 - Specifies essential channel features based upon survey of a reference reach condition
 - Bankfull width and cross-sectional shape with well-defined low flow channel (thalweg) and bank margins
 - Specified streambed material composition and placement thickness through the structure
 - Type, number, length, location and elevations of grade control features. A minimum rock size for grade controls must be specified

Structure Design

- Structure must be of adequate width to accommodate the bankfull width of the stream at the final bankfull elevation with stable bank margins.**
 - Typical bankfull channel width is _____ feet
- Replacement structure must be properly aligned with the stream channel**
- Must include types and placements of all associated structure appurtenances such as abutments, footings, wingwalls, etc.**
- Headwalls and Endwalls are required on all stream crossing structures**
- Sizing and installation of the structure and its appurtenances must provide long-term channel continuity and AOP and shall not reduce the minimum effective opening to less than 125% bankfull width at the structure inlet or outlet**
- Structure must pass the Q100 flow at an elevation not to exceed 80% of the finished opening height at the structure inlet**

Roadway Design

- Must provide design services as needed to address any change to roadway elevations and drainage patterns**
 - Stream Crossing Design & Installation Standard may require increasing the existing roadway elevation. See GP11 DEP Permit Memo for additional guidance
- Must consider additional floodplain connectivity (high-water bypass, floodplain pipes, etc.) where necessary**

Permitting & Construction Documents

- This project is located in HQ, EV, CWF, or WWF _____**
- The drainage area for this project location is _____**
- Design engineer must complete all required permit registrations and application materials needed to meet all State, Local and Federal requirements**
- Design engineer must prepare a set of construction documents meeting the DGLVR Stream Crossing Design & Installation Standard.**
 - Detailed drawings
 - Technical specifications for project implementation
 - Existing and proposed conditions comparison
 - Erosion and sediment control plan including dewatering measures
 - All critical elevations, grades, slopes and other design criteria
- Design engineer must provide all plans and specifications to the conservation district for consistency review with the DGLVR Policy and Stream Crossing Standard before submitting (or resubmitting) materials to regulatory agencies for permit registration / authorization.**
 - Submitted materials will be reviewed by the conservation district for consistency with the Stream Crossing Design and Installation Standard

