Site Assessment Checklist
Stream Simulation
### ROAD

- Long-term commitment and plans for the road.
- Road management objectives.

**Location of road and crossing.**
- Road and crossing maintenance history: chronic maintenance problems.
- Vertical and horizontal constraints on road grade and location.
- Rights-of-way.

**Associated infrastructure.**

**Fillslopes: height, stability.**

**Construction closure and detour options.**

### WATERSHED RISK FACTORS

- Geologic or geomorphic hazards (landslides, avalanches, debris torrents, etc.).
- History of flooding and geomorphic events.
- Land management history and projected future change: expected changes in sediment and/or flow regimes.
- Channel stability offsite (location/type/potential to affect site.)

### EXISTING STRUCTURE

- **Dimensions, slope, fill, perch.**
- **Material, condition.**
- **Structure skew to stream and road.**
  - Flood-plain constriction.
  - Site restrictions/sensitive areas.
  - Type of barrier (partial or complete).
  - Fish and other aquatic organisms affected by barrier.
    - Endangered species.
    - Timing, swimming ability.
  - Terrestrial species affected.
  - Barriers upstream and downstream from structure.
  - Structure priority for replacement.

### RESOURCE VALUES

- Aquatic- and riparian-dependent fish and wildlife populations.
- Aquatic habitats requiring protection.
  - Quality and extent upstream from structure.
  - Critical habitats downstream.
  - Flood-plain habitats.
  - Work window timing.
- Terrestrial animal migration routes/specialized habitats.
- Flood-plain habitats; wetlands.
- Critical flood-plain water storage.
- Water supply.
- Recreation.

### PROJECT REACH

- **Annotated site sketch**
  - Geomorphic features: channel and valley.
  - Road features.
  - Significant vegetation.
  - Land ownership.
  - Utilities.
  - Potential lateral adjustment.
  - Potential construction access.
  - Photo points.
  - Cross section, key feature locations.

- **Channel morphology**
  - Channel type.
  - Natural channel location.
    - Alignment.
Stream Simulation

- Longitudinal profile.
  - Stable endpoints.
  - Key features; mobility.
  - Residual pool depths/scour potential.
  - Natural channel elevation, gradient, and vertical adjustment potential.
- Cross sections.
  - Bankfull width; variability in width.
  - Bank height.
  - Flood-prone zone width; flood-plain conveyance.
  - Flood-plain roughness.
  - Additional cross sections for backwater model.
- Bed material.
  - Pebble count or other estimate of gradation.
  - Armoring.
  - Key features; size and mobility.
- Soils/foundation materials.
- Ground water.

Channel stability
- Channel response to existing structure.
- Vertical adjustment potential.
  - Bed mobility.
  - Perch.
- Lateral adjustment potential.
  - Bank stability.
- Flood-plain conveyance.
- Plugging potential.
  - Woody debris.
  - Ice.

Risk Assessment
- Site history (flood history, past/future land use, geologic/hydrologic setting, etc.).
- Potential for change in sediment loading/flow regime.
- Vertical adjustment potential.
- Headcut potential and effects.
- Aggradation potential and projected effects.
- Lateral adjustment potential and effects.
- High flood-plain conveyance; constriction potential.
- Habitats.

STATEMENT OF PROJECT OBJECTIVES (section 4.6)
- Road.
  - Traffic level; interruptibility; safety.
  - Maintenance.
  - Diversion potential.
- Stream-simulation channel.
  - Desired design features.
  - Structure design flow.

REFERENCE REACH
- Preliminary selection.
- Longitudinal profile.
  - Gradient.
  - Key features: types, spacing, height.
  - Channel roughness.
- Cross section
  - Channel form/geometry.
  - Bankfull width.
  - Entrenchment.
  - Channel margins and banklines.
- Bed material.
  - Bed material: gradation, armoring, angularity.
  - Key features: particle sizes, packing/consolidation.
  - Bed mobility.