TYPE, SIZE & LOCATION REPORT for STATE CONSULTANT & LHTAC PROJECTS

GENERAL

The purpose of the TS&L Report is to provide enough background information so that reviewers can effectively evaluate the proposed final design and the concepts it is based on. The report should describe the project, the proposed structure, and give reasons why the bridge type, size, and location were selected. The report should concisely summarize the information. A separate TS&L Report shall be prepared for each structure except minor projects such as deck joint rehabilitations or rail retrofits.

The intent of the TS&L Report is the collection of pertinent data required for the design of the structure, in addition to documentation of design decisions. Pertinent data shall be extracted from other discipline reports and summarized in this Report for use by the structure designers. There are many approaches to selecting a structure type for a particular project depending upon the project goals. It is common that the structure selection is not driven by least cost, but more on constructability issues like site conditions, minimizing interruptions to the traveling public, environmental impact or aesthetic considerations. The TS&L report should document the tradeoffs between competing project goals and reasonably discuss and resolve an appropriate solution.

A more detailed overall project cost may need to be developed at the TS&L stage in order to reasonably evaluate project goals and to ensure the project remains within budget.

Even though the Hydraulics Report or Geotechnical Engineering Report may not be available at the time the TS&L Report is prepared, always include comments about assumptions made in consultation with the Hydraulics or Foundation Engineer.

The TS&L Report will include the following sections, where applicable. Not all sections will apply to all structures.

REPORT OUTLINE

General Background

- Project description
- Structure location (may include roadway plan & profile and aerial photography)
- Right-of-way restrictions
- Permits and restrictions
- Utility conflicts or restrictions
- Railroad clearances or restrictions
- Design Specifications

Environmental

- Wetlands
- Historical Sites
- Contaminated areas
- Recreation areas
- Threatened Species areas
- Environmental commitments listed in the environmental documentation

Design Concepts Rationale for:

- Building new bridge versus widening existing one
- Use of bridge versus culvert
- Foundation support assumptions
- Assumed pile or bearing capacity loads
- Assumed lateral soil pressure against abutment
- Seismic load assumptions

Geometry and Layout

- Roadway width
- Traffic volumes
- Profile grade
- Horizontal alignment
- Design exceptions
- Sidewalks
- Railing

Hydraulics
- Waterway opening
- High water elevation
- Clearance
- Bank protection
- Floodway information
- Deck drains

Foundations
- Piling or spread footings
- Fills, surcharges
- Settlement
- Lateral earth loads
- Seismic loads

Structure Features
- Span length and span arrangement
- Type of superstructure
    - Girder type and spacing
    - Fixity at abutment & piers
    - Location of expansion joints
    - Deck thickness and corrosion protection system
    - AASHTOWare BrDR shall be used unless approved by the ITD Group Leader. Rationale for using any structure type that can't be rated using AASHTOWare BrDR. In-House load rating procedures in Article 0.04 list structure types that can be load rated using AASHTOWare BrDR.
- Type of substructure and location
- Alternate structure types considered and estimated costs
- Stage construction and detour requirements
- Aesthetics
- Maintenance considerations
- Feasibility of construction

Recommendations
- As part of the recommendations, include a preliminary Situation and Layout drawing of the recommended alternative. ITD will provide guidance during scoping on the number of alternatives to assume for requiring Situation and Layout drawings.

Many bridge replacement projects require a Biological Assessment. To aid in the process, try to address as many of the following subjects as practical.
- Project timing and chronology
- Alignment and span configurations of the new bridge in relation to the existing bridge
- Proposed treatment of the runoff and comparison of the number of drains on the existing bridge to the number of drains on the new bridge.
- Discuss the sizes, numbers, and removal methods of the existing bents, footings and piles within the Ordinary High Water Mark.
- Discuss the sizes, numbers, and construction methods of the new bents, footings and piles within the Ordinary High Water Mark.
- Method of dewatering
- Method of removal and disposal of existing bridge members with lead based paint
- Discuss the construction and removal methods for detour bridges, work bridges, or falsework within the Ordinary High Water Mark
- Extent and duration of heavy machinery work in the wetted channel
- Amount or extent of fill and/or riprap
- Possible staging area and access
- Amount and type of vegetation to be removed outside and within the Ordinary High Water Mark
- Amount of wetland impacted
- Any planned mitigation

Revisions:

April 2008	Added new article.
May 2014	Expanded the issues to be covered and discussion of possible solutions.
Oct 2016	Changed Article number from 0.7 to 0.07.
Sep 2020	Changed name of "Phase 4 Foundation Report" to "Geotechnical Engineering Report" to agree with the Materials Manual. Changed title of article to include LHTAC projects.
Oct 2023	Added using superstructure types that can be rated using AASHTOWare BrDR. Added a requirement of including a preliminary S&L drawing of the recommended alternative.