Major Bridge Inspection Forms

Inspection Form Types

- Each form has a unique form identification or Form ID
- 9 different inspection report forms for bridges with a single span type
- 1 report for sign bridges
- Custom forms generated to suit number & type of spans

Standard Bridge Inspection Forms

Forms used by Class B Inspectors:

Form ID	Span Description	Span Types
TT	Timber Bridges	TT, UT, XT
PCS	Standard Precast Bridges	HH, HC, VH, PG, GR, PE, PPS,VS, SM,SMC, SC, SCC
CUL1	Single Culvert	RP, SP, FP, MP, WP, TP, CP, BP, AP, XP, RPA, RPO, RPP, RPE, MPL
CULM	Multiple Culverts	Same as CUL1 in any combination
CULE	Culvert extended with a different material or size	RPX, APX, CPX, MPX

Major Bridge Inspection Forms

Additional forms used by Class A Inspectors:

Form ID	Span Description	Span Types
TH	Through Truss Bridges	TH
PT	Pony Truss Bridges	PT
DT	Deck Truss Bridges	DT
SG	Steel Girder Bridges	RB, RG, WG, FR
PSR	Regular Prestressed Girder Bridges	RD, FC, VF, PM, VM, PB, DBT, PQ, PO, LF, FM, RM, PJ
CON	All Cast-in-Place Concrete	CA, CB, CF, CV, CX, CC
	Concrete Tee Girders Bridges	CT
	Concrete Flat Slab Bridges	CS
SS	Other Trusses and Arches	SS
SIGN	Sign Structures	Z

Common Major Bridge Form Sections

- Bridge Site Inventory
- Bridge Inspection Details
  - Name, Date, Arr/Dep times
- Posting Information
  - Vertical clearance
  - Posted loading
  - Utilities
- Approach Road

Common Major Bridge Form Sections

- Channel
- Grade Separation
- Structural Condition Rating
- Sufficiency Rating
- Special Comments for Next Inspection
- ERY
- Next Inspection Date and Inspection Cycle

Unique Major Bridge Form Sections

- Superstructure
- Substructure
- Maintenance Recommendations

Superstructure Section

- Common Elements
  - Special Features
  - Deck Rideability
  - Bridge Rail
  - Sidewalk
  - Span Alignment Problems
  - General Rating

Wearing Surface

Wearing Surface
(Material Type :)
(Thickness (mm) :)

SG, DT, CON, and SS forms

Wearing Surface/Deck Top
(Material Type :)
(Thickness (mm) :)
(Planks Width (mm) :)

PT, and TH forms

Wearing Surface	
(Material Type :)	
(Thickness (mm) :)	
Lateral Connection Problem (Y/N)	

PSR forms

Deck Top

Deck Top

SG, DT, PSR and CON forms only

- PT, TH and SS have no Deck Top Element

Deck Joints

Deck Joints	
Temperature (deg.C)	
(Expansion Type :)	
(Fixed Type :)	
Gap Size (mm)	Gap Location

SG, DT, PSR and SS forms

Deck Joints	
Temperature (deg.C)	
(Expansion Type :)	
(Fixed Type :)	
Gap Size (mm)	Gap Location

PT, TH and CON forms

Deck Drainage

Deck Drainage	
Drains Clogged (Y/N)	

SG, DT, PSR, CON and SS forms only

- PT, TH form - No Drainage Element

Curbs / Medians / Wheel Guards

Curb/Median	
Scaling (Percent Area)	

SG, DT, PSR, CON and SS forms

Curbs/Wheel Guards
(Type :)
(Height (mm) :)
(Width (mm) :)

PT and TH forms

Truss Members
Pony and Through Trusses
(PT & TH)

Wide Load Damage (Y/N)				
High Load Damage (Y/N)				TH only
Top Chord				
Batter Posts				
Sway Bracings				TH only
Diagonals				
Verticals				
Portals				TH only
Connections				
Floor Beams				
Bottom Chord				
(No. of Stringers :)				
Stringer Detail Ratings				
	N (count)	1 (count)	2 (count)	3 (count)
Last				
Now				
Stringers				
(Type :)				
(Width (mm) :)				
(Depth (mm) :)				
(Spacing (mm) :)				

Deck Truss,
Other Trusses & Arches(SS)

Top Chord		
Diagonals		
Verticals		
Connections		
Floor Beams		
Bottom Chord		
Stringers		

Girders / Beams

Girders			PSR only
Cracking (Y/N)			
Spalling (Percent Area)			

Girder/Beam			SG only
Cover Plate			
Flange			
Web			
Stiffeners			
Splice			
Weld			

Girders			CON and SS

Diaphragm / Cross Frames

Diaphragms/Cross Frame			SG, DT, PSR, CON, SS none on PT, TH

Paint

Paint Condition			SG, DT, PT, TH, SS others none
(Colour Description :)			
(Colour Code :)			

Bearings

Bearings		
Temperature (deg. C)		
(Expansion Type :)		
(Fixed Type :)		
Coating Adequate (Y/N)		
Functioning (Y/N)		

Not on PT and TH

Deck Underside

Deck Underside		
Stains (Percent Area)		

SG, PSR, and CON forms

Deck Underside		
Stains (Percent Area)		
(Snow Slots Filled :)		

DT and SS forms

Sub Deck/ Deck Underside		
(Material Type :)		
(Plank Thickness (mm) :)		
(Plank Width (mm) :)		
Defects (Percent Area)		

PT and TH forms

Substructure - Abutments

Abutments				
(Extended Backwall Piles (Y/N) :)				
(Extended Backwall Piles Spacing (m) :)				
(Total Number of Caps :)				
Bearing Seats/Caps/Corbels Detail Ratings				
	N (count)	1 (count)	2 (count)	3 (count)
Last				
Now				
Bearing Seats/Caps/Corbels				
(Type :)				
(Depth (mm) :)				
(Width (mm) :)				
Backwalls/Breastwalls				
Greatest Height (m)				
Wingwalls				
(Total Number of Bearing Piles :)				
Piles Detail Ratings				
	N (count)	1 (count)	2 (count)	3 (count)
Last				
Now				
Piles				
Paint/Coating				
Abutment Stability)				
Scour/Erosion				

PT, TH and SS only

PT, TH and SS only

PT and TH only

Substructure - Piers

Piers/Bents				
(Type :)				
(Total Number of Caps :)				
Bearing Seats/Caps/Corbels Detail Ratings				
	N (count)	1 (count)	2 (count)	3 (count)
Last				
Now				
Bearing Seats/Caps/Corbels				
(Type :)				
(Total Number of Piles :)				
Piles Detail Ratings				
	N (count)	1 (count)	2 (count)	3 (count)
Last				
Now				
Pier Shaft/Piles				
Greatest Height (m)				
Bracing/Struts/Sheathing				
Nose Plate				
Paint/Coating				
(Colour Description :)				
(Colour Code :)				
Pier Stability				
Scour				
Debris (Y/N)				

PT, TH, and SS only

PT, TH and SS only

PT, TH and SS only

Not on CON

Maintenance Recommendations

Inspector Recommendations	
REPAIR/REPLACE BRIDGE RAIL	
GALVANIZE/PAINT BRIDGE RAIL	← Not on PT and TH
RETROFIT BRIDGE RAIL	← Not on PSR
REPAIR/SEAL CURBS	
PATCH DECK	
SEAL DECK	
OVERLAY DECK	
REPAIR/REPLACE DECK JOINTS	
RESET/PAINT BEARINGS	
REPAINT SUPERSTRUCTURE	
STRAIGHTEN/REPLACE MEMBERS	
WASHING	
SHOTCRETE REPAIRS	
REPAIR ABUTMENT SCOUR/EROSION	
PLACE ADDITIONAL RIP RAP	
REMOVE DRIFT ACCUMULATION	
OTHER ACTION	
OTHER ACTION	
OTHER ACTION	
OTHER ACTION	

Form Review

- Inventory items
  - Shaded fields on form (TIMS)
  - Verify/revise data on form
- Element Ratings
  - fill all blank fields
  - use N or X if necessary
- LHS Data or Explanation of Condition
  - Verify & check off if visible
  - Carry over if not visible

Reasons for Inspection

- Safety
- Maintenance
- Management

Rating Considerations

- Condition
- Functionality

Maintenance Priority

Rating	Maintenance Priority
5	No maintenance required
4	Low priority Recommendation is not required If made - not likely before next inspection
3	Medium priority Before next inspection (6 mo. to 3 years)
2	High priority Monitor until work is done (within 6 months)
1	Immediate action

Road Classifications

Current Department standards are:

Highway Type	Road Classification
Local Roads (Gravel	RLU 207G-60 RLU 208G-60 RLU 208G-90 RLU 209G-90 RLU 210G-90
Local Roads (Paved)	RLU 208-100 RLU 208-110
Provincial Hwys. (Gravel)	RCU-208G-090 RCU-209G-090

Road Classification (Continued)

Highway Type	Road Classification
Provincial Highways (Paved)	RCU 208-110 RCU 209-110 RCU 210-110 RAU 209-110 RAU 210-110 RAU 211.8-110 RAU 213.4-110 RAU 213.4-120
Provincial Highways (divided)	RAD 412.4-120 RAD 616.6-130 RFD 412.4-130 RFD 616.6-130

Refer to Table 4.2 in Manual

Major Bridges - Concrete

	Life Expectancy		
Type	Low	Ave	High
Prestressed Girder**	45	55*	70*
Precast Girder**	30	35	50
Cast-in-Place**	40	50	60

* Use Maximum of 50 years for timber sub-structure

** Add 5 years if overlaid with concrete

** Add 5 years if strengthened or laterally stressed

Major Bridges - Steel

	Life Expectancy		
Type	Low	Ave	High
Rigid Frame	60	70	80
Welded Girder	60	70	80
Deck Truss	60	70	80
Rolled Beams	50	60*	80*
Riveted Plate Girder	40	50	70*
Through Truss	40	50	70*
Pony Truss	40	50	70*
Bailey and Other Types	30	40	50

* Use maximum of 50 years for timber substructure

Estimated Remaining Life Major Bridges

Considerations:

- Traffic characteristics
  - volume, amount of truck traffic, log haul
- Salt usage
  - road surfacing, traffic, climatic conditions
- Deck drainage, leakage
- Decay favorable conditions
- Design or rated load capacity

Questions??