Building an In-house Bridge Inspection Program

This presentation will address the development of Philadelphia District's in-house bridge inspection capabilities and take an in-depth look at several successful bridge inspection efforts.
INTRODUCTION

- Four high-level highway bridges, Chesapeake and Delaware Canal, DE & MD
INTRODUCTION

- Four non-public service and spillway bridges at the Northeastern PA dams
PHILADELPHIA DISTRICT
BRIDGE PROGRAM
INSPECTIONS
BRIDGE INSPECTION PROGRAM

• STARTING SMALL:
• In 1995 the team’s first inspection – Delaware City Bridge
• Started inspecting the Dam bridges in the year of their Periodic Inspection:
  – F.E. Walter Dam Service Bridge in 1997 and 2002
  – Beltzville Dam Service and Spillway Bridges in 1998 and 2003
  – Blue Marsh Dam Service Bridge in 1999, 2004
BRIDGE INSPECTION PROGRAM

• GETTING LARGER:
• Until 2003, the District utilized A/E firms to inspect their high-level highway bridges
• 2003 – St. Georges Bridge
  – first of the BIG bridges – 4,209ft structure, tied-arch, 42 spans!
  – financial reasons
  – team of 7 inspectors
  – competitive timeframe and cost with A/E
• 2004 - Reedy Point Bridge
• 2005 - St. Georges Bridge again
• 2006 - SUMMIT BRIDGE
• 2007 - CHESAPEAKE CITY BRIDGE
St. Georges Bridge
2003
Reedy Point Bridge
2004
St. Georges Bridge 2005
In late 1999, Fort Dix contacted NAP about inspection on 8 bridges on base in 2000.

In 2001, NAP inspected 6 bridges at Tioga-Hammond Lakes in PA for Baltimore District and 5 bridges in Iowa and Nebraska for Kansas City District.

In 2002 and 2004, NAP inspected the Fort Dix bridges again.

In 2003, NAP returned to Tioga-Hammond Lakes.

Tioga-Hammond Lakes, Mansfield, PA
Cowanesque Lake, PA

Stillwater Lake, PA

Whitney Point Lake, NY
INSPECTION TEAMS

- Usually teams are two people, two engineers or an engineer and a technician.
- District Inspection team (distributed thru EC and Ops):
  - Five engineers, three have P.E.’s
  - Four technicians
  - Two more engineers get trained this year
- Team leader(s) must be a P.E. (we need more P.E.s)
- Bridge manager plans the inspection, coordinating the notes, acquiring equipment and allocating the work.
- Team leader usually writes the report(s).
- Bridge manager also coordinating any A/E inspections at the same time.
IN HOUSE SUPPORT

- NAP owns own snooper, crash truck, MPT equipment, safety boat
- Equipment operators in OPS trained as inspectors
- NAP Survey Branch:
  - Provides multibeam scour surveys
  - Provides data in color contour drawings
KEYS TO SUCCESS

• Preparation
  – Preparation of notes – create a library for each bridge
  – Take the time to put note sheets in CAD
  – Create a system for notes and documentation
  – Our inspectors find graphical method best
  – BRIDGE FILE component of new CEBIS program will be invaluable
  – Create list of equipment suppliers
  – Ask for input from bridge firms
  – talk to other districts (i.e. NAP) about preparing cost estimates, timeframe (how long an inspection should take)
  – create a good attack plan for the inspection (critical path and secondary work)
KEYS TO SUCCESS

• In the field:
  – Pair team members with good, complementary skill sets
  – Support work (i.e. rigging, testing, diving)
  – BE FLEXIBLE – things never go like they’re supposed to go
Prioritization Issues

- Coordinating Inspection Schedule with Funding Schedule
  - Recommendation and Action Summary – identify future work items
  - Scheduling of future work vs. scheduling future funding
  - Ensure that contracts contain most current information - Good information from inspectors is paramount.
Prioritization Issues

- Coordinating Inspection Schedule with Funding Schedule
- Deciding What Work Can Wait and What Work Cannot
  - Inspectors/Bridge Program Manager/Ops Project Manager coordination
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