Bridge Collapse In Washington Dumps Cars in River

Interstate 5 near Mount Vernon, Washington
May 23, 2013

What

Problems
Bridge collapsed, cars fell into river

When
Date
05/23/13

Where
Physical Location
Interstate 5 near Mount Vernon, Washington

Impact to the Goals

Schedule Goal
Impacted
Bridge unusable for extended time

Material Goal
Impacted
Replacement bridge needed

Safety Goal
Impacted
Potential for injuries

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High Level

Cause Map

Evidence: Photos, investigation of accident
Steel girder was damaged
Truck struck overhead girder

Evidence: Statement by driver of truck; review of permit paperwork
Damage to one girder made bridge unstable
'Fracture critical' bridge

Evidence: Findings from the initial investigation
Evidence: One major structural failure caused the bridge to collapse; no redundancy built into the design

Steel through-truss bridge
Bridge collapsed quickly after damage

Evidence: Photos, investigation of accident
Truck was taller than clearance

Truck was traveling in outside lane

No signs describing the bridge's vertical clearance

Truck was unaware of potential clearance issue

Evidence: Plan is to build a temporary bridge by mid-June 2013 and a permanent replacement by Fall 2014
Replacement bridge needed

Evidence: Initial estimate is that it will cost 15 million to replace the bridge

Relatively cheap and easy to build

Truck was carrying an oversized load

Transporting a case shed for a drilling rig

Design of bridge

Clearance in outside lane was lower than center lane

Truck was unaware of potential clearance issue

Evidence: Bridge unusable for extended time

Bridge destroyed

Bridge collapsed

Before photo of bridge design. Image posted to Flickr by orrosgey.

Evidence: Damage to bridge

Evidence: Photos, investigation of accident

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Lowest clearance on bridge was over 14 ft.

Evidence: Outside lane had clearance of 14 feet 7 inches

Only overcrossings of less than 14 ft. require signs

Evidence: Design of bridge

Truck had a pilot to guide it

Truck was taller than clearance

Evidence: Images posted to Flickr by roswellsgirl.