

SDOT Bridge Program

Seattle City Council Briefing

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Roadway Structures Division Director

April 21, 2021



City of Seattle

Agenda

- Roadway Structures Division Organization
- Bridge Seismic Retrofit Program
- Bridge Inspection & Maintenance Program
- City Auditor Recommendations and Business Practices Upgrade Status



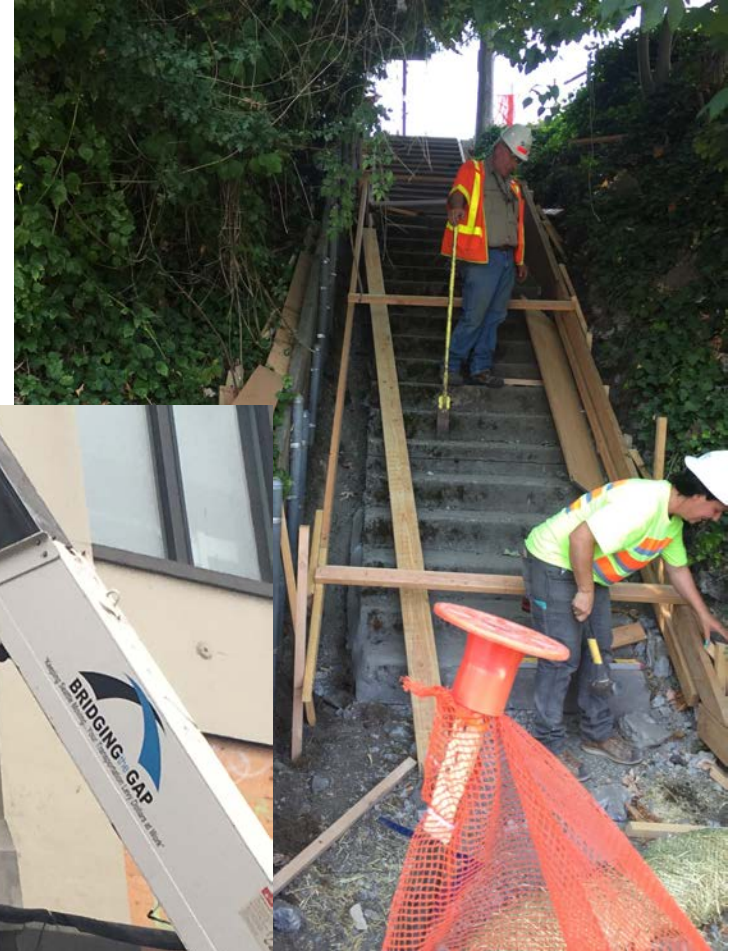
Roadway Structures Division

- Director: Matt Donahue, PE
 - 30 years' experience
 - Geotech/Structural
 - Design/Construction
 - Asset Management
 - Seismic Resiliency
 - Federally Designated Bridge program Manager for SDOT
 - Certified Bridge Inspector
 - NHI Instructor for Underwater Bridge Inspection and Countermeasure Design
 - ADCI Commercial Diver



Roadway Structures Division

- Total Division Staff of 63 Permanent Positions
 - 3 Main Groups
 - Movable Bridge Operations
 - Structural Maintenance
 - Structural Engineering
- Work Type Split
 - Operation & Maintenance
 - Capital Programs (Levy/Non-levy)
 - Subject Matter Expertise
 - Emergency Response/Incident Management Team
 - Equity Initiatives
 - Reimbursable Work



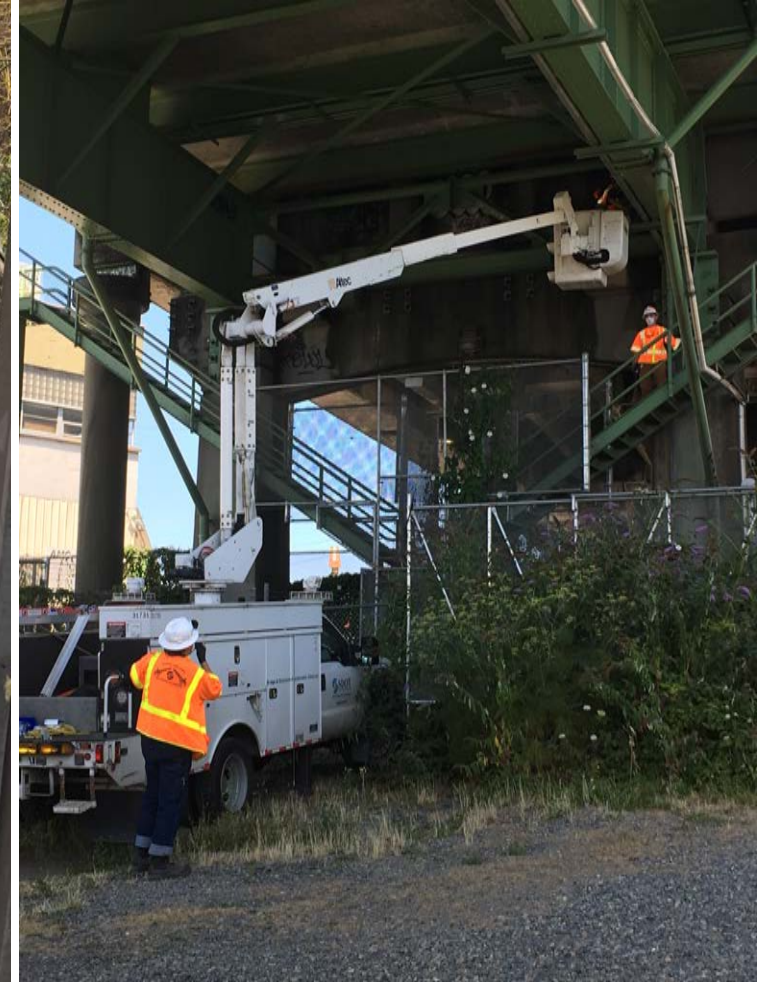
Movable Bridge Operations Group

- Bridge Operators
- Operate University, Fremont, Ballard, Spokane Street Swing and South Park Bridges
- Maintain Safety of the Waterway
- Non-journey level maintenance activities



Structural Maintenance Group

- Journey Level Trades
 - Electrician
 - Mechanic
 - Carpenters
 - Concrete Finishers
 - Installation Maintenance Workers
- Preventive Maintenance
- Major Rehabilitation
- Capital Replacement



Structural Engineering Group

- Engineers and Engineering Specialists
- Bridge Inspection per Code of Federal Regulations
 - Fracture Critical
 - Special/Movable Structure
 - Underwater
- Other Structural Asset Inspection
- Repair Design
- New Asset Design Review and Intake
- Existing Asset Protection



Roadway Structures Division

Management of
Asset Types
Valued at \$8.3B



124

Bridges

\$6.85B



613

Retaining walls

\$1.2B



502

Stairways

\$72M



238

Areaways

\$189.5M



Roadway Structures Division

- Capital Program Ownership

- Levy

- Bridge Seismic Retrofit
 - Bridge Rehab & Replacement
 - Bridge Spot Repair
 - Stairways

- Specific Projects

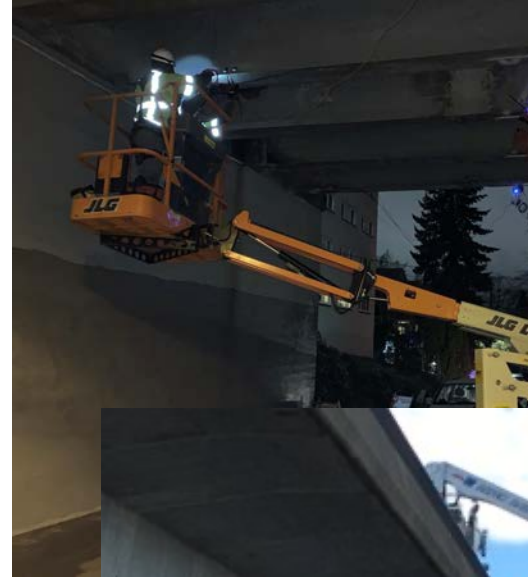
- Northgate Pedestrian Bridge
 - Fairview Avenue Bridge
 - Northlake Retaining Wall

- Non-Levy by Asset Type



Roadway Structures Division

- Emergency Response/IMT
 - 24/7/365 Staffed On-Call Calendar
 - Movable Bridge Outages
 - Fixed Bridge Hits for SDOT and as needed for WSDOT
 - Snow & Ice Response
- Race and Social Justice/Equity Initiatives
- Subject Matter Expertise



Bridge Seismic Retrofit Program

- Levy Program
- Guided by our SDOT seismic retrofit policy guidelines
- Started with 16 bridges in 2016
- CDR phase indicated higher costs than anticipated
- Levy Oversight Committee approved reducing the number of projects in December 2020
- Current deliverable is retrofit of 11 bridges



Bridge Inspection & Maintenance Program

- Average age of bridges in Seattle is 60 years old – with many exceeding their designed life
- Requires coordination between operations, maintenance and engineering
- We appraise bridge conditions by using a bridge management system and follow guidelines prescribed by FHWA and the Washington State Bridge Inspection Manual
- We inspect a variety of elements for each bridge including footings, columns, cross beams, girders, decks, railings, underwater components and movable systems



Business Practices Upgrade (BPU) Alignment with OCA Audit Recommendations

Objective: A strategic shift from a reactive asset maintenance project list to a proactive asset preservation work plan

BPU Priority	Major Work Category	OCA Audit Recommendation
1	Prep for 2022 FHWA/WSDOT Audit	1
2	Reimbursable Work Tracking Tool	2
3	Staffing Analysis	5 & 6
4	Life Cycle Cost Analysis	8 & 9
5	Technology CBA	7
6	Update Ordinance 96715	3 & 4
7	Bridge Strategic Asset Management Plan	10

Business Practices Upgrade Process Timeline

2018

- Full review of inspection, operation, maintenance and capital replacement practices

2019

- Revamp of unfunded needs list
- Full review of bridge inspection program and invitation to WSDOT/FHWA to perform informal audit
- Operationalized policy for asset protection for areaways and bridges
- Reorg of RS internally/externally to new Division in SDOT

2020

- Began response to WSDOT/FHWA inspection program evaluation and OCA audit in September

- Identification of BPU Initiative lead staff

2021

- Full BPU Initiative workplan including scope/schedule/cost
- Reimbursable Work Tracking Tool
- Begin preparation for WSDOT/FHWA formal audit
- Asset data check for Areaways and Retaining Walls

2022

- Complete preparation for WSDOT/FHWA formal audit
- Continue work on other BPUs

2023

- Full completion of BPU initiative

Summary

- Through careful management, SDOT maximizes investments in our transportation infrastructure, preserves existing facilities, manages capital improvements, and operates these assets to provide a safe and reliable transportation system for the traveling public.
- With a significant number of bridge assets +60 years old, extending the life of existing bridges is important to keep our transportation system functioning at full capacity while making investments in new infrastructure.
- SDOT considers many factors before recommending a structure for replacement, including detailed condition assessments and other local factors.
- Investment in our aging bridges must be planned proactively; and this is the main objective of the Business Practices Upgrade work that began in 2018.
- On track to meet commitments in response to Bridge Audit.

Questions?

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