



Bridge Management Program

Status and Condition

January 2013





Seattle's Transportation Inventory

- Seattle's transportation facilities have a replacement value of over \$13 billion (2010 Asset Mgmt report)
 - Replacement value rose over 65% from pre-BTG levels
 - Reflects construction cost increases
 - Better asset management information
 - Growth in transportation facilities and equipment
 - Pavement, Roadway Structures and the Ped/Bike system are largest asset classes
 - Roadway Structures make up over 33% system value
 - Includes bridges, retaining walls and areaways



SDOT Maintenance Needs

- Transportation deferred maintenance backlog is estimated at over \$1.8 billion (2010 estimate)
 - Maintenance backlog continues to grow
 - 'Bridging the Gap' did not fill the gap
 - Base funding declined during recession
 - System has grown increasing maintenance needs
- Roadway structures maintenance backlog is over \$1 B
- City should spend about \$190 million on maintenance each year to prevent backlog from growing
 - Currently spend about \$40 to \$50 million a year

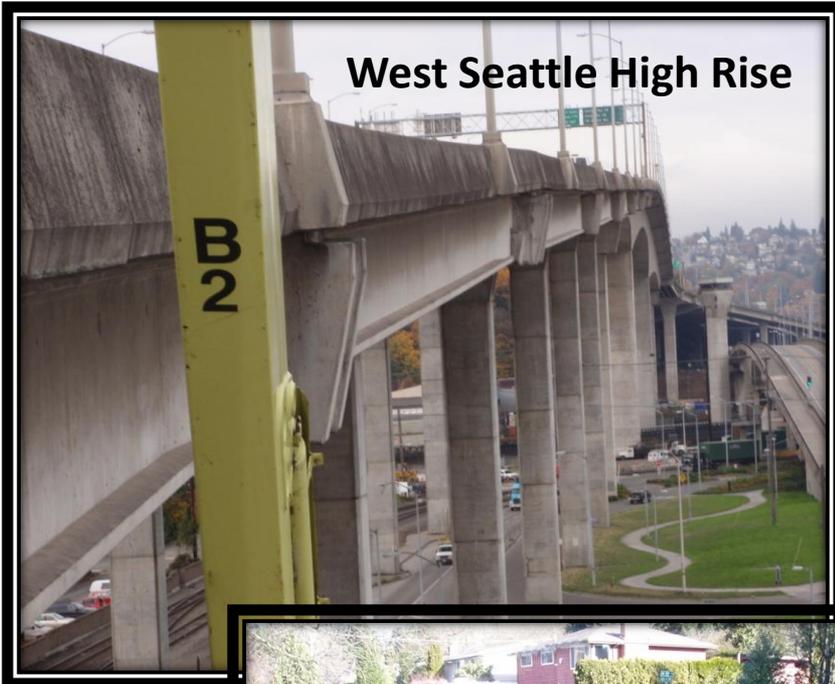


Agenda – Bridge Management

- Bridge Inventory
- Bridging the Gap
- Condition
- Inspection
- Age
- Replacement Needs



SDOT Bridge Inventory



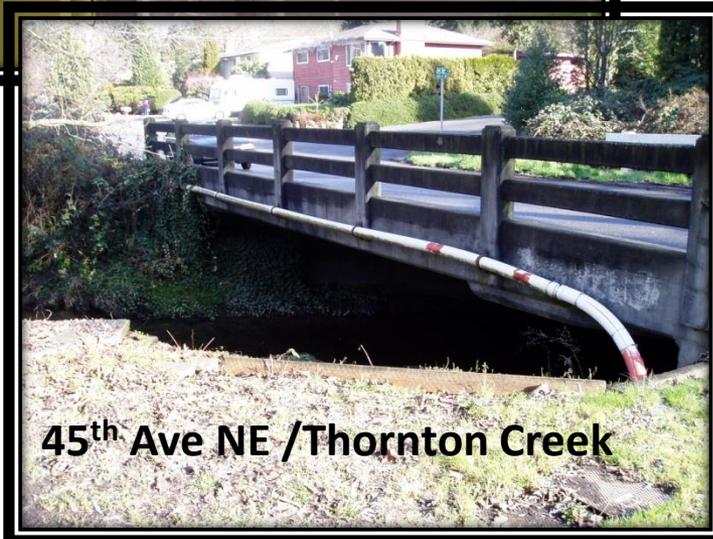
West Seattle High Rise

Owned & Maintained

- 103 Bridges
- 122 Segment

Partially Owned and/or Maintained

- 32 Bridges



45th Ave NE / Thornton Creek

2.5 Billion Replacement Value



Inventory Changes

2010

ROYAL BROUGHAM /RR	ADDED	35,298 SF
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2011

NE 45TH ST VIA - W APPR	REMOVED	-20,559 SF
E MARGINAL WAY & HORTON	REMOVED	-27,888 SF
S SPOKANE, 4TH AVE RAMP	ADDED	48,407 SF

2012

SPOKANE ST VIADUCT	WIDENING	138,224 SF
E MARGINAL GRADE SEPARATION	ADDED	30,815 SF
THOMAS ST PED	ADDED	11,306 SF
S SPOKANE, 1ST AVE RAMP	ADDED	36,840 SF

Net Deck Area: + 252,443 SF
8.0%



BTG -Rehab, Replacement and Seismic Retrofit

Exceeding Expectations



Completed

- E Duwamish Waterway– Deck Replacement
- Jose Rizal - Rehabilitation
- Fautleroy Expressway – Seismic Retrofit
- E Marginal Way @ Horton St – Filled
- 15th Ave NE & NE 105th – Rehabilitation
- 45th St Viaduct – West Approach Filled
- Albro /Airport – Seismic Retrofit



In construction

- Airport Way /Argo - Replacement
- King St Station Bridges – Seismic Retrofit
- Ballard Bridge Seismic – Seismic Retrofit



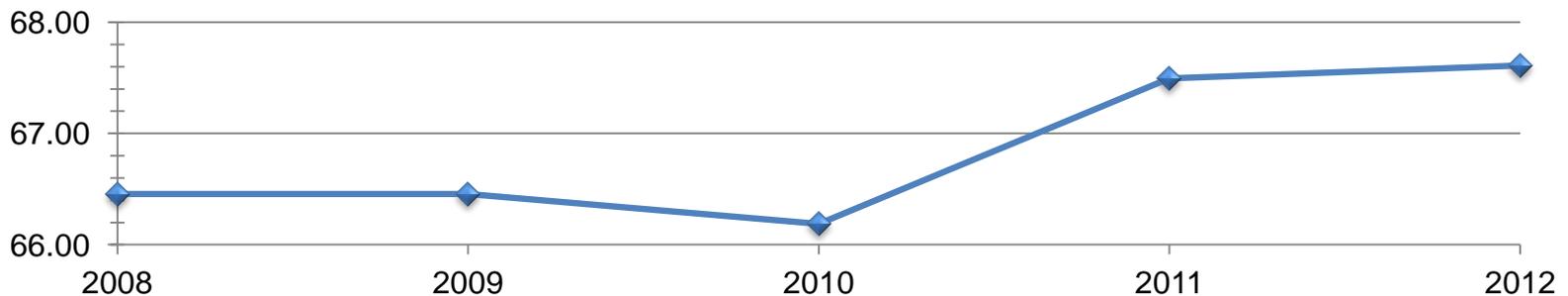
Sufficiency Rating

Sufficiency Rating (SR) is a value that indicates a bridge's sufficiency to remain in service. The value of 100 percent represents a new bridge in good condition and zero percent represents a bridge in poor condition

SR determines Federal funding eligibility

- SR < 80 Rehabilitation Candidates
- SR < 50 Replacement Candidates

Average SR of All Bridges



30% of SDOT bridges have SR < 50 with a replacement value of \$945M

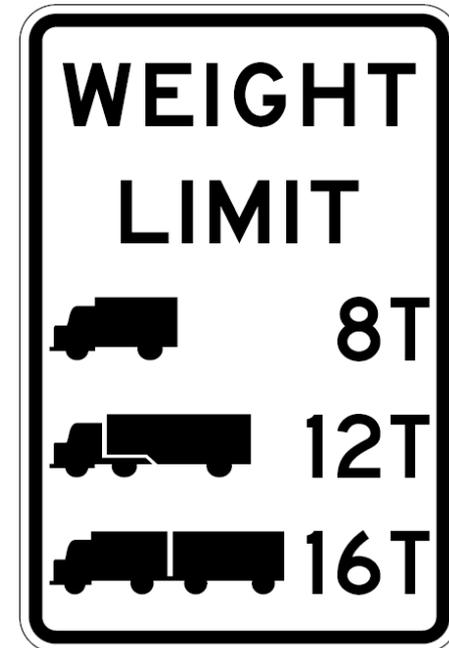
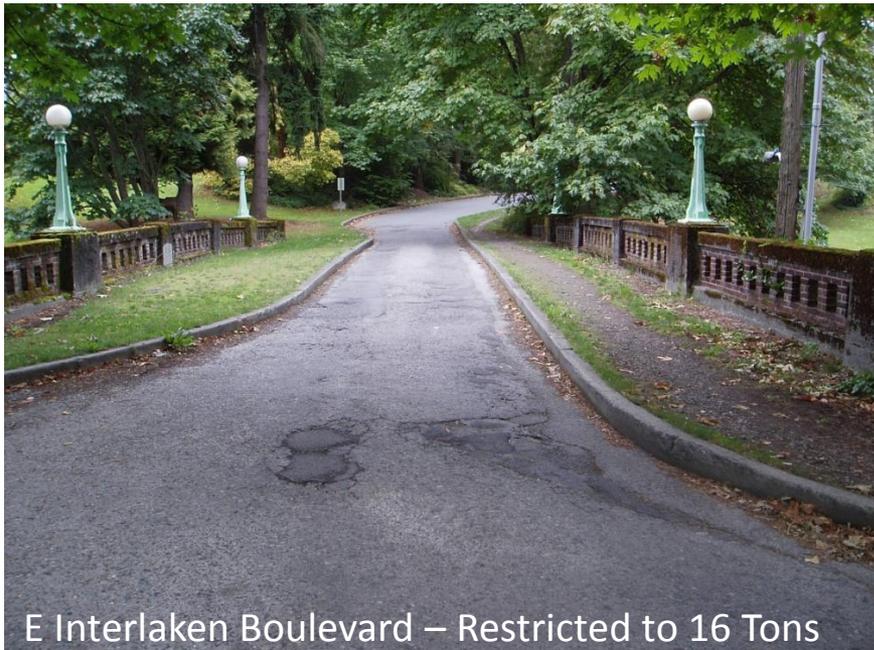


Structurally Deficient

SD: Typically needs maintenance and repair and eventual rehabilitation or replacement to address deficiencies. An SD bridge is often posted with reduced weight limits

SDOT has

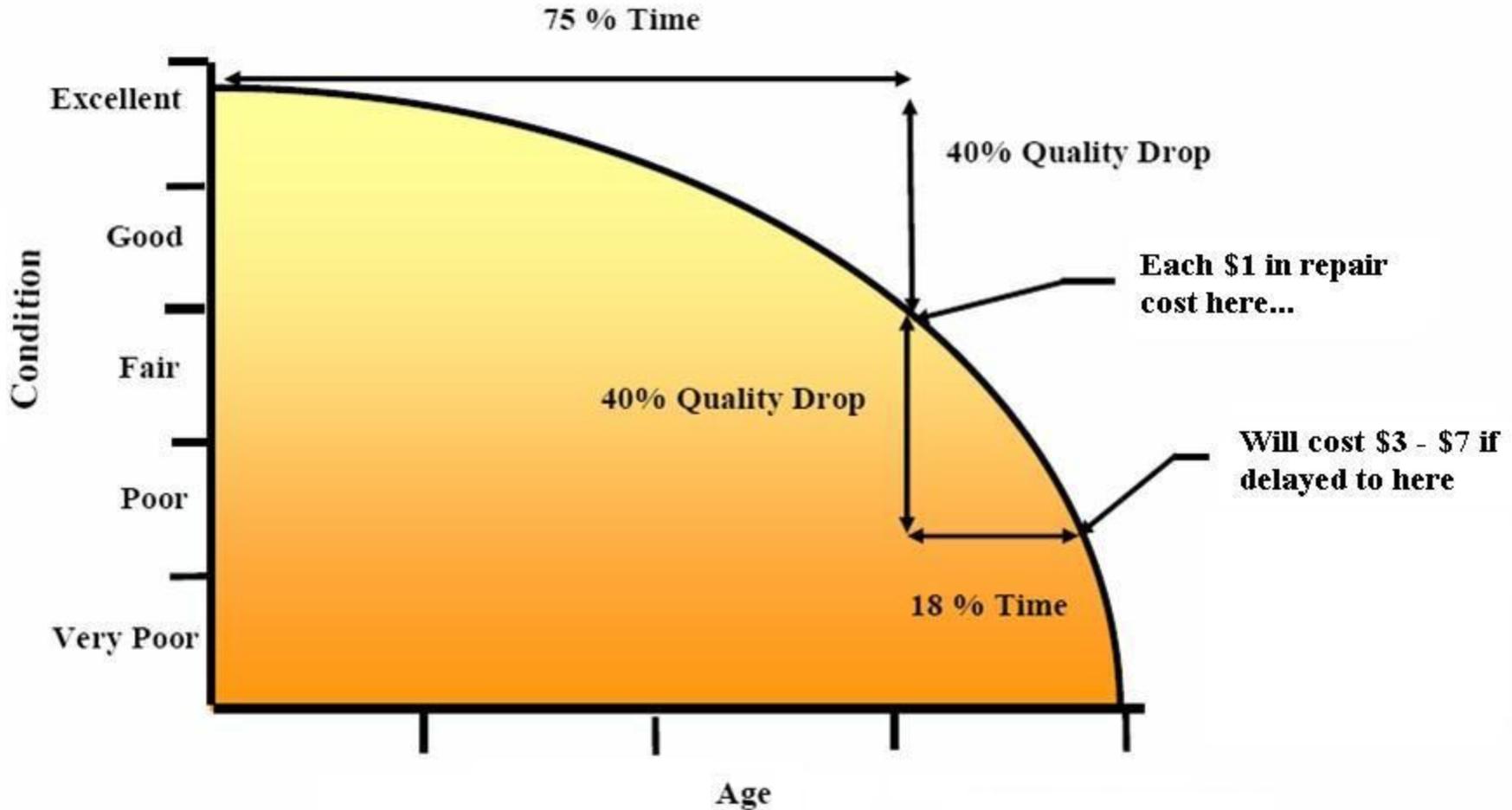
- 10 SD Bridges - Replacement Value is \$392M
- 7 Load Restricted Bridges - Replacement Value \$446M



Load Restricted Sign



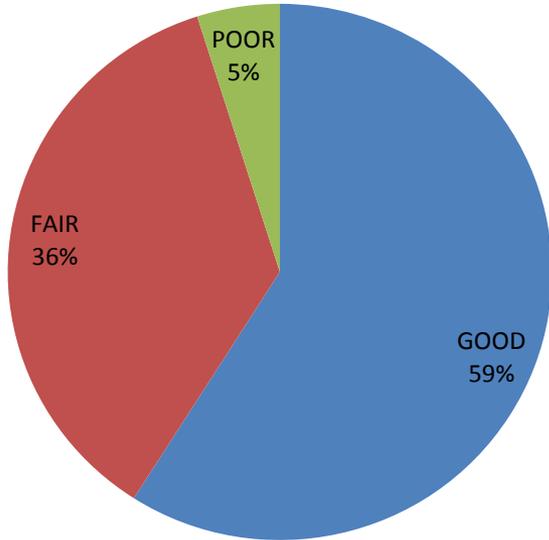
System Condition & Cost over Time



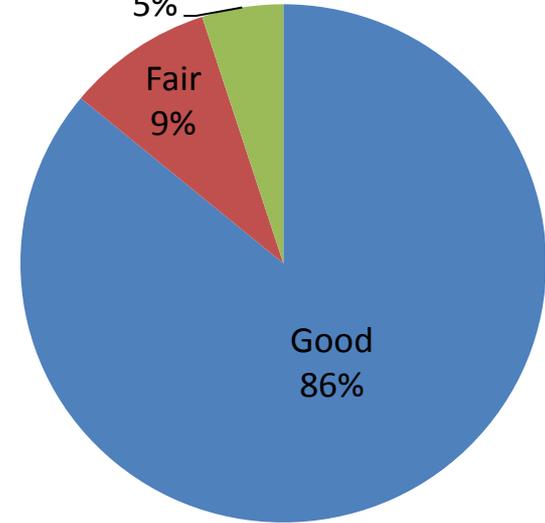


Bridge Condition

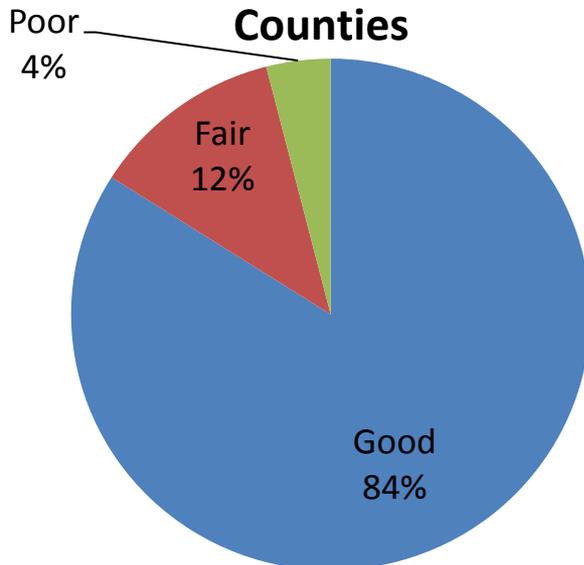
SDOT



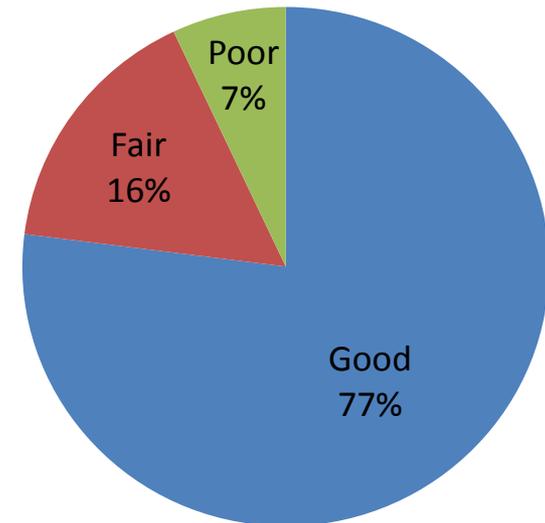
WSDOT



Counties



Cities





Functionally Obsolete

Geometry, clearances, load capacity do not meet current standards

Although FHWA's focus on FO as it relates to vehicle travel, SDOT has begun collecting data on how well bikes and pedestrians are accommodated on bridges

SDOT has 43 FO Bridges





Inspection Program

Keep Seattle Bridges Safe

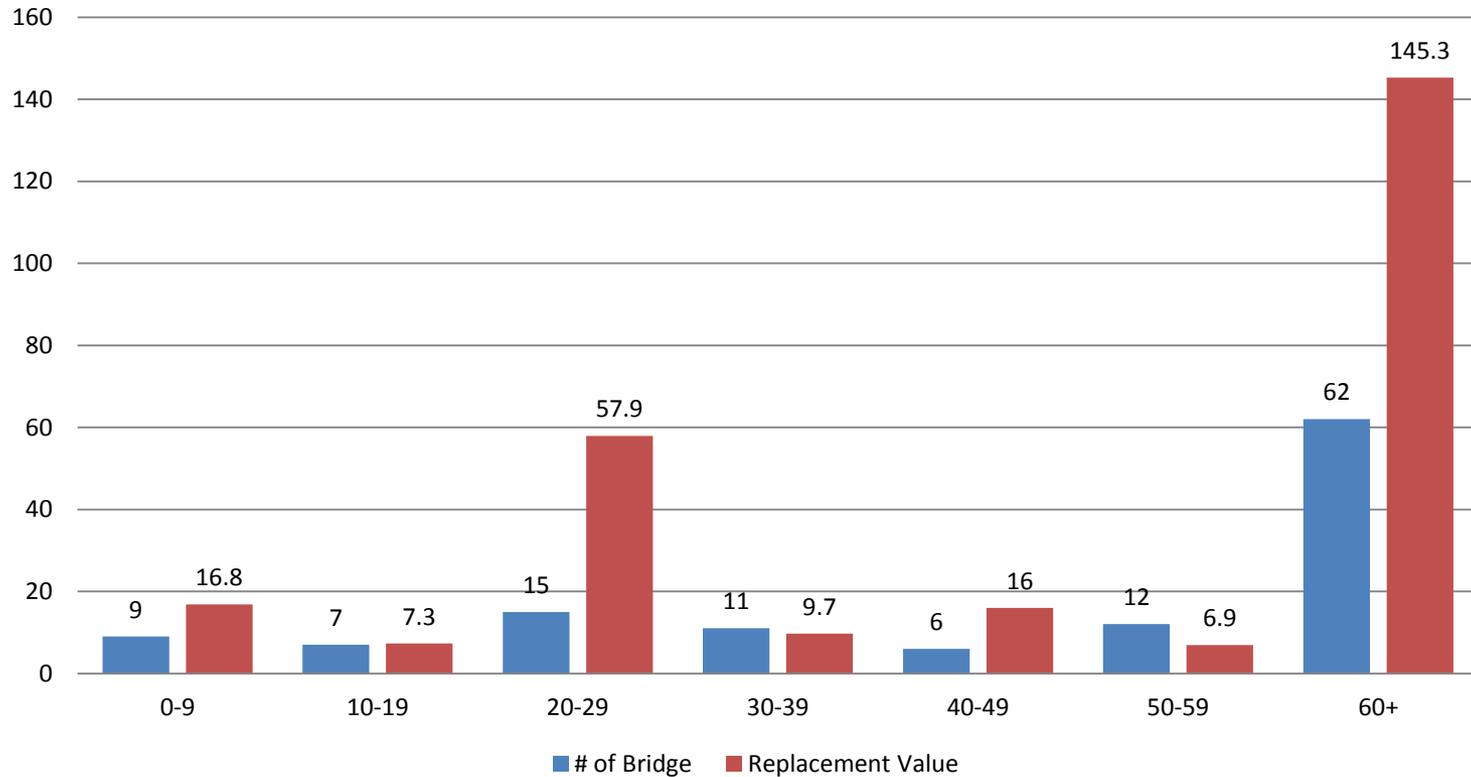
- 122 Routine
- 27 UBIT
- 14 Fracture Critical
- 2 Boat
- 2-3 Underwater
- 5 Special
- Post Earthquake





Bridge Age & Replacement Value

Bridge by Age & Replacement Value
(in 10s of Million)

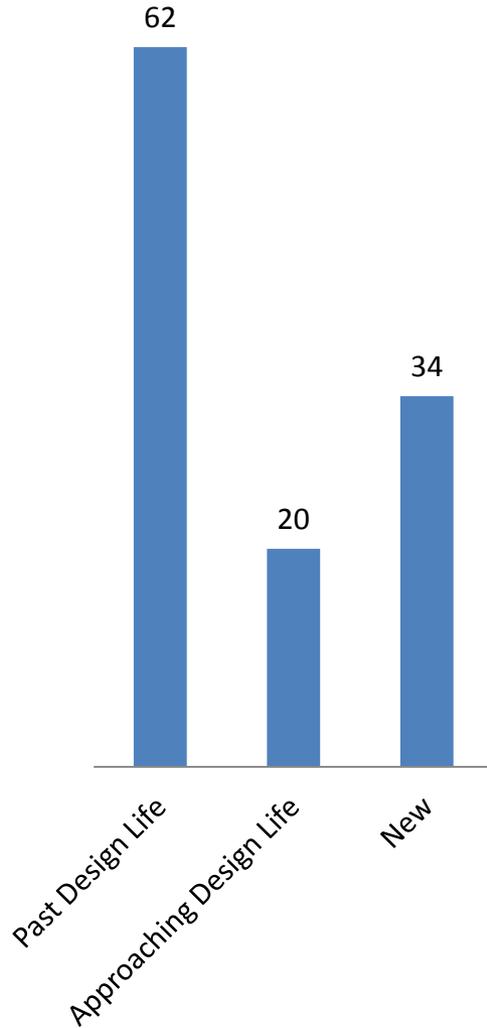


62 Bridges over 60 years old, replacement cost is \$1.5 B



Design Life

SDOT Bridges



Replacement Value

Past Design Life:	\$1,408,800,000
Approaching Design Life:	\$ 238,100,000
New:	\$ 806,600,000



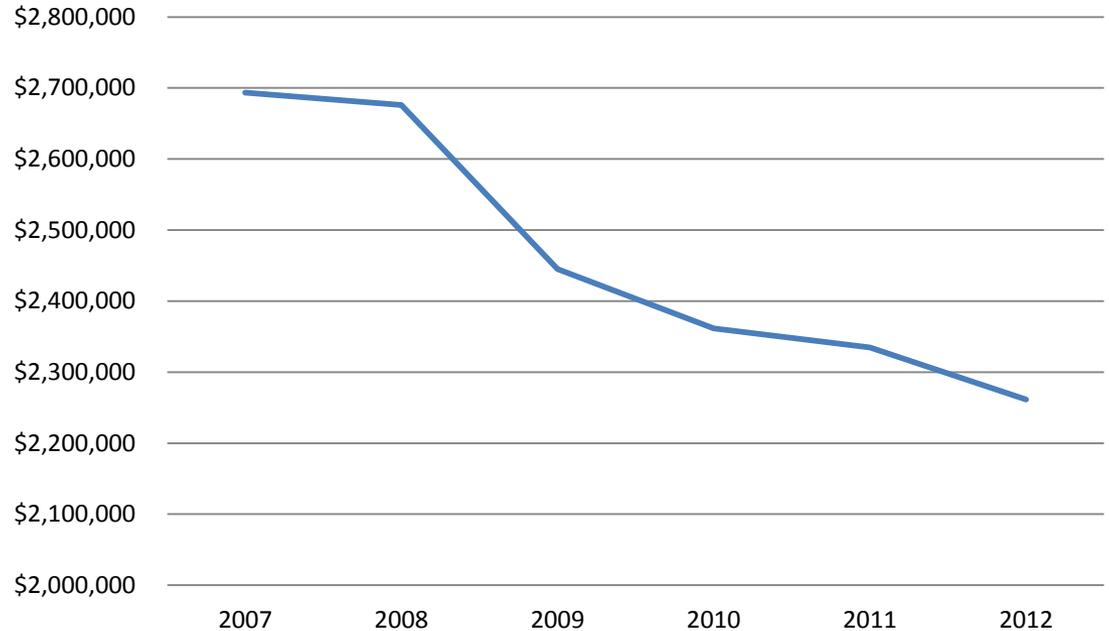
2nd Ave Ext, Age 84



Maintenance Budget

Preservation is part of the solution

Bridge Maintenance Budget



Jose Rizal Maintenance



Bridge Replacement

Replacement is critical to maintaining the function of our transportation system

- Load Restriction – limits freight mobility
- Bridge Closure – adds economic cost due to delay and detours





Other Funding

Map 21

- BRAC: Bridge Replacement Advisory Committee

BRAC does not address large projects

Magnolia - \$300 million plus

King Street Station Bridges - \$100 million plus



Questions?