

Bridge Performance Measures – All Combined Answers

1. Does your organization have bridge performance measures?

AK - Yes, but in review to comply with MAP-21 requirements.

AZ – Yes

CA – Yes: We use four different measures not counting the new MAP-21 measures

Clark Co Public Works – No. They will be forthcoming in 1 to 3 years. Exceptions noted below in Question 2.

CO - Yes

- a. Most are considered lagging measures that based on condition assessment (i.e inspection).
- b. CDOT is trying to define good leading measures that can help improve performance in the future.

ID – Yes

Linn County – No

MT – Yes

NM - No

NV - Yes

OR - Yes

UT - Yes

WA - Yes

WY - Yes. We have developed the Wyoming Bridge Index (WBI) which is similar to a health index. It provides a high level view for reporting purposes and its individual component ratings help distinguish differences in bridge attributes that may otherwise go unnoticed when using a single rating or index (e.g. sufficiency rating). It is composed of four component ratings.

- 1) Structural Condition Rating – Assessment of structural adequacy.
 - 2) Maintenance Rating – Evaluation of the condition of commonly maintained bridge components.
 - 3) Functionality Rating – Evaluation of how bridge attributes affect the traveling public.
- Risk Rating – Evaluation of bridge attributes vulnerability to extreme events

2. What are the performance measures for bridges?

AK - Decrease by 3% on a five year average the deck area of all bridges (regardless of ownership) classified by the FHWA as structurally deficient or functionally obsolete.

AZ – Condition Rating Index

CA – Bridge Health Index, Distressed Bridges, Structurally Deficient, and Level of Service Score

Clark Co Public Works –

a. Structurally Deficient bridges

Number of bridges

b. Load Restricted and Posted bridges

Number of bridges posted for load and Number of bridges with a load restriction

CO –

c. Percentage of deck area on structurally deficient CDOT-owned bridges

d. Percentage of deck area on structurally deficient bridges on the NHS

e. Percentage of CDOT-owned bridges over waterways that are scour critical

f. Percentage of bridge crossings over Interstates, U.S. routes and Colorado state highways with a vertical clearance less than the statutory maximum vehicle height of 14 feet-6 inches

g. Percentage of bridge crossings over Interstates, U.S. Routes and Colorado state highways with a vertical clearance less than the minimum design requirement of 16 feet-0 inches

h. Percentage of CDOT-owned bridges posted for load

i. Percentage of CDOT-owned bridges with a load restriction

j. Percentage of leaking expansion joint by length on CDOT-owned bridges

k. Percentage of CDOT-owned bridge deck area that is unsealed or otherwise unprotected

ID - Percent of Bridges in Good Condition: good, fair, or poor

Linn County – N/A

MT – MDT uses two Bridge Performance Measures.

1. Structure Condition and 2. Deck Condition.

These performance measures relate to the Safety and Bridge Preservation objectives of the Bridge Program. Both measures rank bridges as Good, Fair, or Poor. Individual bridges receive one ranking for each measure based on the bridge condition ratings.

Both measures are reported by deck area, in square feet, in each ranking. Once the bridge is ranked, the bridge's deck area is then assigned that ranking for statistical and planning purposes.

NM - N/A

NV –

- a. Percentage of structurally deficient bridges.
- b. Percentage of functionally obsolete bridges.
- c. Sufficiency ratings.
- d. Percentage of bridges over waterways that are scour critical.
- e. Percentage of bridge crossings with a vertical clearance less than the minimum design requirements of 16'0"
- f. Percentage of bridges with posted load restrictions.
- g. The District II Bridge Maintenance program is tracking outstanding preventative maintenance recommendations thru the NDOT Bridge Rehabilitation Workspace.

OR – Number of distressed bridges (Structurally deficient, or an identified freight mobility, deterioration, safety or serviceability need). The bridge maintenance program is also tracking the number of outstanding preventative maintenance recommendations (deck seals, deck thin overlays, and joint repairs).

UT - All deficient bridges are programmed for rehabilitation or replacement. UDOT is also managing the inventory to a health index threshold. The threshold is different for different highway systems.

WA –

a. Overall Bridge Condition

WSDOT reports the total number of bridges in Good/Fair/Poor condition by deck area. Definitions of Good and Fair will be revised to match the proposed MAP-21 definitions.

b. Steel Bridge Painting

WSDOT reports the condition of steel bridges and their paint systems by OK/Due/Past Due. WSDOT identifies the number of bridges and the paint surface area in each condition classification along with the total cost of repainting the bridges in those conditions.

c. Concrete Bridge Decks

WSDOT reports the condition of bridge decks by OK/Due/Past Due. WSDOT identifies the number of bridge decks by square foot in each condition classification along with the total deck area in square feet along with the total cost of rehabilitating the bridges in those conditions.

d. Structurally Deficient bridges

Number of bridges and deck area for bridges on NHS and Non-NHS.

e. Load Restricted and Posted bridges

Number of bridges posted for load and Number of bridges with a load restriction

WY -

- 1) WBI: 60% of NHS and Non-NHS structures in a Good or Excellent WBI Performance Category.
- 2) MAP-21: Less than 10% of NHS structures classified as Structurally Deficient (SD).

3. If you do not have bridge performance measures what do you use in their place?

AK - N/A

AZ – N/A

CA – N/A

Clark Co Public Works –

1. Individual evaluation of bridges. – i.e. replacing SD and Load Restricted bridges is the priority.
2. Studies targeted at scour critical bridges and seismically vulnerabilities.

CO - N/A

ID - N/A

Linn County – Historically, individual bridge condition and performance has been measured by a Sufficiency Rating which is included in an Inspection Report generated for each bridge as part of routine inspections. These inspections are completed by outside sources coordinated by the Oregon DOT under FHWA guidelines.

MT – NA,

We are following closely the requirements the Federal Highway Administration (FHWA) published draft Notice of Proposed Rulemaking (NPRM) for implementing MAP-21 requirements.

NM - We use the deck, superstructure and substructure condition ratings

NV - N/A

OR - N/A

UT - N/A

WA - N/A

WY - N/A

4. Do you have an Asset Management Plan for Bridges?

AK - No, but we are working on developing and implementing a Transportation Asset Management Plan to comply with MAP-21 requirements.

AZ – Under construction

CA – In the works

Clark Co Public Works – No. Forthcoming in 1 to 3 years.

CO - Yes

ID – Yes

Linn County – Not necessarily identified in a formal manner, Linn County's Asset Management Plan for bridges consists of a spreadsheet listing all bridges in the system along with updated data specific to the overall condition of each bridge. This data includes: sufficiency rating, condition states of the major elements, scour conditions, and commentary as needed. This information is used to identify and prioritize maintenance needs.

MT – In progress. MTDOT is currently working on developing and implementing an Asset Management Plan that will somewhat mimic the requirements found in the Transportation Asset Management Plan (TAMP) and MAP-21

NM - Not yet. The NMDOT is currently working on developing and implementing an Asset Management Plan

NV - Nevada is currently developing an Asset Management Plan for Structures to comply with Section 1106 of MAP-21

OR - While Oregon does not have an Asset Management Plan for Bridges at this time, we are working on an Asset Management Plan to comply with section 1106 of MAP-21

UT - Yes

WA - No.

WSDOT does have bridge preservation policies but have not fully documented these policies into a plan. WSDOT has not fully integrated Maintenance and Preservation actions.

WY - No. We are in the process of developing one

5. Are your bridge performance measures tied to your Asset Management Plan?

AK – Yes, we will add the MAP-21 required targets as soon as the rulemaking is finalized

AZ – As we adopt the National PMs, they will be tied...

CA – They will be

Clark Co Public Works – N/A

CO - Yes

ID - Yes

Linn County – This is still being developed.

MT – Somewhat

NM - Not yet.

NV - They will be once our Asset Management Plan is implemented

OR - While Oregon does not have a plan at this time, to comply with MAP-21 the performance measures must be tied to the Asset Management Plan

UT - Mostly

WA – No. WSDOT is in the process of linking the performance measures to the Asset Management Plan

WY - We plan on tying performance measures to our Asset Management Plan for Bridges once it is developed

6. Do you use bridge performance measures to prioritize bridge needs and identify gaps in funding?

AK - Yes, the Bridge Section develops annual bridge priority lists within each Region of the state based on the inspection data, but relies on the Regions to assign funding

AZ – Not yet

CA - Yes

Clark Co Public Works – Criteria listed under Question 3 is used. Once the performance measures and overall County Asset Management Plan are in place they will be used to identify projects and forecast funding needs.

CO - Yes

ID - Yes

Linn County – As discussed in question No. 4 above, bridge needs are prioritized by a spreadsheet containing pertinent data. Funding gaps are not identified.

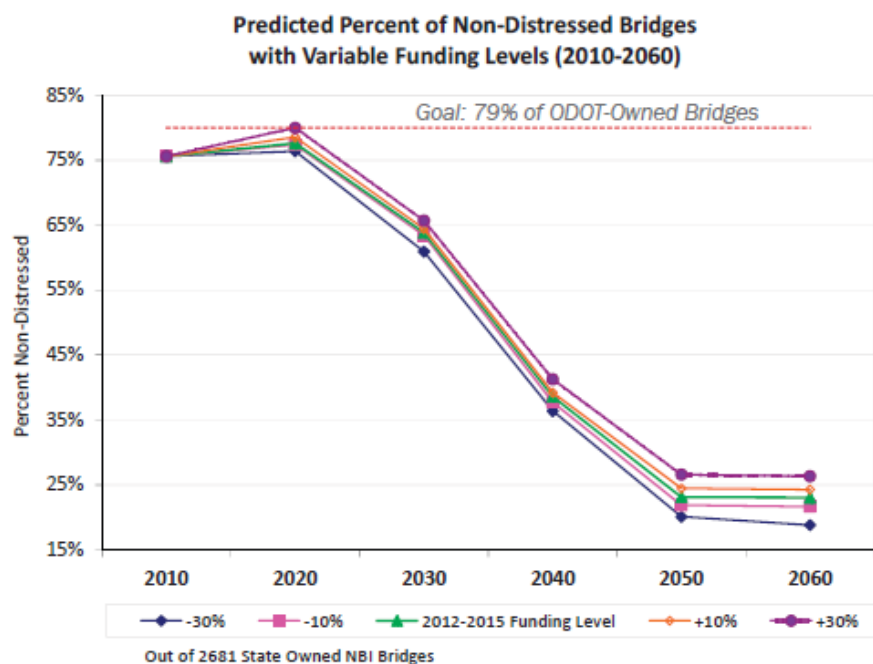
MT – We are looking at US Department of Transportation - National Bridge Investment Analysis System (NBIAS) modeling and analysis tool for predicting bridge maintenance, improvement, and replacement needs.

We don't necessarily trust that any of the current asset management programs are reliable enough to determine where to put your money.

NM - Yes, we develop annual bridge priority lists

NV - No. Each District within NDOT have own procedures for prioritizing individual preservation task. NDOT District II Bridge Maintenance does track own bridge preservation needs for the up & coming fiscal's which is used to show the gap in funding

OR - The performance measures have been used in the annual Bridge Condition Report to identify predicted levels of bridge condition with various funding levels.



UT - Yes

WA - No. WSDOT does have procedures for prioritizing individual Preservation tasks like steel bridge painting, concrete deck rehab, and bridge repairs.

WSDOT uses a hierarchy of bridge needs to prioritize overall funding.

WSDOT does have an estimate of Bridge Preservation needs for the next 10 years which is used to show the gap in funding

WY - Yes. We are continually refining

7. Has use of performance measures been effective in securing additional bridge funds?

AK - Yes, Alaska has allocated funding toward fixing bridges that are structurally deficient. These ratings have been used to demonstrate a need for additional funding, but securing additional funds has been inconsistent

AZ – N/A

CA – The trends of consistent measures over time have been effective in communication the needs

Clark Co Public Works – NA. The funding available is not based on performance measures. Rather areas identified by WSDOT/FHWA.

CO - Yes and No

- a. CDOT is above the 90% Not Structurally Deficient so that performance measure has led to a reduction in funding to the Preventative Maintenance program from its initial high in FY 2014 to a low in FY 2019. The Preventative Maintenance program was established to address the top contributors to bridge deterioration (e.g. leaking expansion joints, unsealed bridge decks, etc.)
- b. The historical argument for additional money to be applied to bridges did lead to the Bridge Enterprise but that program is primarily a worst first replacement program. <https://www.codot.gov/programs/BridgeEnterprise>

ID - Yes, legislatively this has helped in securing funds

Linn County – N/A

MT – Not currently, but with the TAMP process that may change.

NM - Yes, we have used these ratings to demonstrate a need for additional funding

NV - No. NDOT's bridge preservation funding for the immediate future looks dismal.

Past decisions have constrained the funding for addressing our current needs

OR - Both Pavements and Bridge have detailed the long term funding required to maintain the highway system. This has led to a reexamination of how available funds will be allocated, but it is too early to tell if bridge funding will be increased as a result.

UT - Yes

WA - No. WSDOT's forecast for bridge preservation funding for the next 10 years is kind of bleak. Past decisions have constrained the funding for addressing current needs

WY - This has not been attempted

8. A. Has the use of performance measures led to improved structural performance or longevity?

AK - No, we report annually our percent structurally deficient and functionally obsolete bridges and it has not significantly changed over the years

AZ – N/A

CA – Yes

Clark Co Public Works – N/A

CO - We believe so but it is too early to tell

ID - Too early to tell but I do think it will lead to improvements

Linn County – This is a work in progress.

MT – We have not collected enough information over time to directly make that correlation.

NM - Yes, we report annually our percent structurally deficient bridges and it has shown great improvement over the years

NV - No. Performance measures are reporting the conditions. We need policies & funding to lead us to preservation & hence improve structural performance

OR - Performance measures alone will improve neither structural performance nor longevity. It will take adequate funding and the selection of the right projects at the right time for each bridge. The performance measures haven't been around long enough to show measureable change. However, the long term trend for bridge conditions is clearly downward, even with a significant increase in funding.

UT - A little too early to tell.

WA - No. Performance measures simply report the conditions. Preservation policies, actions and funding will ultimately lead to the improvement in structural performance

WY - Yes. We have reduced the number of SD structures

B. Does the way you show your measurement, dashboard or other means, illustrate the improvements achieved over time?

AK – N/A

AZ – N/A

CA – Yes?

Clark Co Public Works – N/A

CO - Yes and No

a. The model is very simple but funding is such that there is decline in network condition over time.

b. There is an annual Deficit Report that shows the needed funds to achieve the targets available at <https://www.codot.gov/library/AnnualReports>

ID - Yes

Linn County – This is a work in progress.

MT – The recognition that poor bridge decks significantly impact the percentage of our bridges that fall into the structurally deficient category has led us to a more aggressive bridge deck rehabilitation program.

NM - Yes, we report annually our percent structurally deficient bridges and it has shown great improvement over the years

NV - Only time will tell

OR - Performance measures alone will improve neither structural performance nor longevity. It will take adequate funding and the selection of the right projects at the right time for each bridge. The performance measures haven't been around long enough to show measureable change. However, the long term trend for bridge conditions is clearly downward, even with a significant increase in funding.

UT - A little too early to tell.

WA - Maybe. It will take a few more years to analyze the trend in the performance measures

WY - Yes

9. Do you have a public internet site or public document reporting your performance measures? Can you share a link with us?

AK – We have some information on our website. More may be included when the Asset Management Plan has been fully implemented.

<https://www.omb.alaska.gov/html/performance/details.html?p=157>

We have an annual bridge condition report, but it is being updated with 2014 data and is not available yet.

<http://dot.alaska.gov/stwddes/desbridge/assets/pdf/2013bridgereport.pdf>

AZ – Not yet

CA – Yes. They are included on our Mile Marker Publication.

<http://www.dot.ca.gov/ctjournal/MileMarker/2015-1/index.html>

Clark Co Public Works – No.

CO - Yes but it is in need of an update <https://www.codot.gov/performance>

ID - <http://itdintranetapps/Apps/Scorecard/Home/PubDetailView?pmdid=140>

Linn County – No.

MT – No

NM - We do not have the information on our website as of yet. It may be included when the Asset Management Plan has been fully implemented

NV -

Yes. http://www.nevadadot.com/About_NDOT/NDOT_Divisions/Planning/Performance_Analysis/NDOT_Factbook.aspx

OR – Yes. The Executive Summary at the start of the report mentions performance measures.

ftp://ftp.odot.state.or.us/Bridge/bridge_website_chittirat/2014_br_condition_report_081314.pdf

UT - Yes: From the main page Click on Asset

Home https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0CB4QFjAA&url=https%3A%2F%2Fwww.udot.utah.gov%2Fpublic%2Fuccon%2Fuconowner.gf%3Fn%3D8331324918506665&ei=88IDVZekGJH1oATF3oHICg&usq=AFQjCNG45A3HvQ0oAgoXupO5yErsAY_F0A&bvm=bv.92291466,d.cGU

WA – Yes. http://www.wsdot.wa.gov/publications/fulltext/Bridge/GNB54_2014.pdf

WY –

Yes. http://www.dot.state.wy.us/files/live/sites/wydot/files/shared/Strategic_Performance_Improvement/BSC/BSC%20-%20Bridge%20-2012-2014%20Update%20September%202014.pdf