U. S. Department of Energy
Facilities Information Management System
Request for Change
Change Request #: 21-03

Requestor Name:	Cindy Hunt	Date:	1/11/2021	Affiliation:	
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Program Office:	Office of Asset Management (MA-50)			Contractor	
Proposed Change:	Establish **new** data elements applicable to bridges, tunnels, and culverts, necessary to support implementation of DOE O 437.1, *Bridge and Tunnel Management* issued December 11,2020 (the Order). The attachment provides applicability and definitions for the following new data elements- 1. Posted Load Rating or Restrictions 2. Load Rating Date 3. Scour Evaluation 4. Scour Critical POA 5. Seismic Vulnerability Evaluation 6. Traffic Volume Date				
Justification:	Updating FIMS data elements and requirements to include a minimum number of new data elements leverages the Department's corporate real property inventory system to- • integrate requirements for bridge and tunnel management with existing operating and management procedures for real property, • monitor requirement fulfillment, • ensure that information and data supporting the Department's external reporting or implementation of bridge and tunnel management requirements is validated and timely, and • institutionalize data reporting, data tracking, and records management on a commonly accessible system. **Background**: Requirements of DOE O 437.1 apply to- • vehicle bridges both public and controlled-access, railroad bridges, pedestrian bridges including elevated covered walkways, culverts assigned Usage Code 2629 in the Facilities Information Management System (FIMS), and vehicle tunnels. • all DOE elements except for the Deputy Administrator for Naval Reactors, the Federal Energy Regulatory Commission, and the Power Marketing Administrations.				

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The table below correlates existing and proposed FIMS data elements with requirements of the Order for conduct of timely inspections, assessments, studies, and evaluations-

Requirement	Supporting Data Elements
Ensure timely inspections (4.a)	• Safety Inspection Date • Safety Inspection Frequency • Special Inspection Date • Special Inspection Frequency • Underwater Inspection Date • Underwater Inspection Frequency
Post a bridge, tunnel, or culvert (4.b(2))	• Posted Load Rating or Restrictions *(New)*
Maintain a current load rating (4.b(1))	• Load Rating Date *(New)*
Ensure each active bridge and culvert that crosses a waterway is evaluated for vulnerability to scour or stream instability (4.c)	• Scour Evaluation *(New)*
Develop and execute a bridge-specific Scour Critical Plan of Action (Scour Critical POA) for each bridge [under specific conditions] (Attachment 2, 3.b(3))	• Scour Critical POA *(New)*
Ensure each bridge is evaluated for vulnerability to seismic events and the need for seismic retrofitting (4.d)	• Seismic Vulnerability Evaluation *(New)*
Determine the Average Daily Traffic and the percentage that is truck traffic [] and maintain a forecasted average daily traffic (4.e(1)) OR Determine Annual Average Daily Traffic (AADT) and the Annual Average Daily Truck Traffic (AADTT) (4.e(2))	• Traffic Volume Date *(New)*

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FAC Remarks:

02/16/2021 – The FAC gave a conditional recommendation to proceed provided the change request was sent out to all Sites for review and comment.

03/10/2021 – Change Request feedback was received by MA-50. No comments were received on the scope of the changes proposed. Per FAC request, MA-50 revised the change request to include Update Frequency for each new data element or revised data element. Therefore, in accordance with the FAC's last action, the proposed changes are FAC recommended.

OAM Remarks:	
FDDC Remarks:	06/24/2021 – FDDC Approved
Implemented:	08/03/2021 – Implemented into FIMS 3.21

1. Establish the following **New Data Elements** for bridges, tunnels, and culverts:

Data Element Name	Applicability	Data Element Definition

Posted Load Rating/Restrictions
 	
Update Frequency: concurrent with update of Data Element *Load Rating Date*
	Required for OSF's (all Ownerships) when Usage Code = 1168, 1169, 1468, 1469, 1768, 1769, 1771, 1772, or 2629
	
	Optional for OSF's (all Ownerships) where the Usage Code = 1171 or 1471
		Indicates the implementation of controls where load posting or other operational or access restrictions are necessary at a bridge, tunnel, or culvert to ensure appropriate and safe use or to prevent use. This is a picklist field with the following options:
		
		Pick list includes:
		  A Open, no restriction
		  B Open, REQD posting or restrictions NOT in place
		  D Open, w/TEMP shoring
		  E Open, w/TEMP structure
		  G New, not yet open
		  K Closed, barriers IN place
		  L Closed, barriers NOT in place
		  P Posted for load
		  R Posted or load-capacity restrictions issued
		  X PSO exemption
		  Y at grade tunnel exemption
		
		For the FIMS Data Element Dictionary, include the following definitions.
		  A Open, no restriction
		  B Open, posting or operational restrictions recommended but not implemented (for example, all signs not in place or improper signage installed)
		  D Open, would be posted or closed except for temporary shoring, etc. to allow for unrestricted traffic
		  E Open, temporary structure in place to carry traffic while original structure is closed and awaiting replacement or rehabilitation
		  G New structure not yet open to traffic
		  K Closed to all traffic (barriers/signage in place to prevent access)
		  L Closed to all traffic (barriers/signage to prevent access not in place)
		  P Posted for load
		  R Posted or operational instructions issued for other load-capacity restrictions (for example, speed; number of vehicles, railroad cars, or pedestrians; no stopping, etc.)

Data Element Name	Applicability	Data Element Definition
		X Documented, PSO-established exemption Y Vehicular tunnel at grade, exempt
Load Rating Date **Update Frequency:** once every five years, or when recommended by inspectors, or when concern for reduced structural capacity is caused by unexpected events	Required for OSF's (all Ownerships) when Status = 1 Operating, 2 Standby or 3 Outgranted, And **Posted Load Rating or Restrictions** = A, B, D,E,G,K,L,P, or R	Date of the current load rating or load rating review report. Review existing load rating at least once every five (5) years to ensure conditions and assumptions are still valid, or when recommended by inspectors, or when concern for reduced structural capacity is caused by unexpected events. The **Load Rating Date** field must be changed to represent the most current load rating date within thirty (30) days of completing the evaluation.
Scour Evaluation **Update Frequency:** concurrent with each routine inspection (see *Routine Inspection Frequency* data field)	Required for OSF's (all Ownerships) when Status = 1 Operating, 2 Standby or 3 Outgranted, And Usage Code = 1168, 1169, 1468, 1469, 1768, 1769, or 2629	Current evaluation of vulnerability to scour or stream instability from floods. Pick list includes: 0 SC, closed, failed 1 SC, closed, substructure failure imminent 2 SC, immediate action REQD 4 Stable, action REQD 5 Stable, scour w/in footing limits 6 NO eval 7 Countermeasures installed 8 Stable, scour above footing 9 Foundation on dry land N Not over waterway T Tidal, NO eval U Unknown Foundation, No eval X PSO exemption Pick list includes: 0 Scour Critical – Bridge failed and closed to traffic 1 Scour Critical – Failure of piers/abutments is imminent and bridge closed to traffic; Scour Critical Plan of Action required 2 Scour Critical – Extensive scour has occurred at bridge foundations; immediate action required; Scour Critical Plan of Action required 3 Scour Critical – Scour Critical Plan of Action required

Data Element Name	Applicability	Data Element Definition
		4 Stable – Action required; Scour Critical Plan of Action required 5 Stable – Scour within limits of footing or piles 6 Eval Not Made; Plan of Corrective Action required 7 Countermeasures Installed; Scour Critical Plan of Action required 8 Stable – Scour above footing 9 Foundation on dry land N Not over waterway T Tidal Waters - Eval Not Made; Plan of Corrective Action required U Unknown Foundation - Eval Not Made; Plan of Corrective Action required X Documented, PSO-established exemption The **Scour Evaluation** field must be changed to represent the most current evaluation within thirty (30) days of completing the evaluation.
Scour Critical POA **Update Frequency:** concurrent with update of Data Element *Scour Evaluation* **Edit: No entry allowed (protect) for Scour Evaluation = 0,5,8,9,N or X**	Required for OSF's (all Ownerships) when Status = 1 Operating, 2 Standby or 3 Outgranted, And Usage Code = 1168, 1169, 1468, 1469, 1768, 1769, or 2629	When **Scour Evaluation** is 1, 2, 3, 4, 6, 7, T, or U, indicates Yes (Y) or No (N) that the site has a written Scour Critical Plan of Action (POA) describing the measures in place to make a bridge or culvert less vulnerable to damage or failure due to scour.

Data Element Name	Applicability	Data Element Definition
Seismic Vulnerability Evaluation **Update Frequency:** once every five years, or following a change in configuration, or following seismic retrofit	Required for OSF's (all Ownerships) when Usage Code = 1168, 1169, 1468, 1469, 1768, or 1769	Current evaluation of vulnerability to seismic events and the need for seismic retrofitting. Seismic Retrofit Categories are used to recommend minimum screening requirements, evaluation methods and retrofitting measures for deficient bridges. There are four categories, A through D, in increasing order of rigor and complexity. The Seismic Retrofit Category of a bridge is a function of the anticipated service life, bridge importance, and the seismic and geotechnical hazards at the bridge site. Pick list includes: A Seismic Retrofit Category A B Seismic Retrofit Category B C Seismic Retrofit Category C D Seismic Retrofit Category D E Exempt from seismic retrofitting U Eval Not Made X Documented, PSO-established exemption The **Seismic Vulnerability Evaluation** field must be changed to represent the most current evaluation within sixty (60) days of completing the evaluation.
Traffic Volume Date **Update Frequency:** once every five years	Required for OSF's (all Ownerships) when Status = 1 Operating, 2 Standby or 3 Outgranted, And Usage Code = 1768, 1769, 1771, or 1772 Optional for OSF's (all Ownerships) where Status = 1 Operating, 2 Standby, or 3 Outgranted <u>And</u> Usage Code 1171 or 1471	The date the vehicle traffic volume data collection was completed. The **Traffic Volume Date** field must be changed to represent the most current evaluation within sixty (60) days of completing the evaluation. Enter 01/01/8888 when a PSO-established exemption exists.

Data Element Name	Applicability	Data Element Definition

2. Include new data elements for bridges, tunnels, and culverts in FIMS Standard Report 015 - Bridge Safety Inspection Report.