BRM IMPLEMENTATION HAWAII D.O.T.

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State of Hawaii
Department of Transportation

Some Background

HDOT bought a Dell server in Jan. 2012

We set up Pontis 5.1.0.3 on our new server.
(we had help!)

Note: Pontis 5.1.0.3 on HDOT Intranet: only accessible to HDOT staff).

Some Background

1. After we setup Pontis 5.1.0.3 on our server, we didn't want to manually enter the bridge inspection reports ourselves.
2. Since we were now on a server, we wanted the bridge inspectors to enter their bridge inspection reports into our server.

Two BrM Challenges

1. Getting our bridge inspectors to use National Bridge Elements (NBE's).
2. Getting BrM off our INTRAnet and onto the public INTERnet to make it available for consultant inspectors.

Getting our inspectors to use NBE's

1. Training: brought in FHWA instructors to train our bridge inspectors to use NBE's.
2. We provided additional help.
3. We created custom reports and forms.

NBE Training

1. Training: We brought in FHWA instructors to teach the NBE class to our inspectors (Nov. 2013). (FHWA was a great help!)

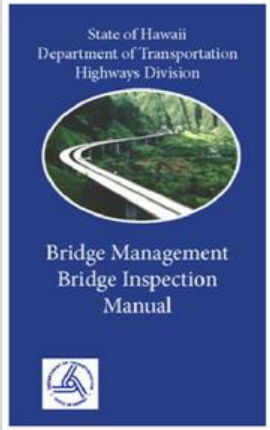
Additional Help

2. HDOT provided additional help to the inspectors:
   a) Webinars (for updates and training)
   b) HDOT Website
      i. BrM bridge inspection manual
      ii. Youtube videos
      iii. BrM Help Email

Department of Transportation
Highways

BRIDGE MANAGEMENT

The AASHTO Manual for Bridge Element Inspection provides the information needed to perform bridge inspection using the National Bridge Elements (NBE). Federal regulations will soon require all bridges to be inspected using NBE's. The purpose of this manual is to supplement the AASHTO manual with Hawaii-specific information.



HOW TO USE THIS MANUAL

The manual was designed as a top down approach when inspecting the bridge. This basically refers to the inspector starting the inspection on the top of the bridge and then proceeding down to the bridge substructure.

To use this manual for new element inspections:

1. Chapter 2 describes filling out the new inspection form and final report.
2. Chapter 3 describes using AASHTOWare Bridge Management (BrM) software.
3. Chapter 4 describes new deck elements.
4. Chapter 5 describes new superstructure elements.
5. Chapter 6 describes new substructure elements.
6. Chapter 7 describes new culvert elements.
7. Chapter 8 describes new wearing surface and protective system elements.
8. Chapter 9 includes the NBI ratings.

RECENT POSTS

- Pali Highway Honolulu-bound closure Saturday night for tunnel cleaning
- Truck escape ramp opens on Daniel K. Inouye Highway in Kona
- Public Informational Meeting scheduled for the Kuhio Highway-Mailihuna Road Intersection Improvements and Kapaa Stream Bridge Replacement project
- Public Informational Meeting scheduled for the Hanapepe River Bridge Replacement project
- Queen Kaahumanu Highway widening, phase 2 project begins with groundbreaking ceremony

CATEGORIES

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HDOT BrM Videos - YouT

https://www.youtube.com/playlist?list=PLenkR3aOHEj5nKpi45IXo1eC6YrKsc0_R

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HDOT BrM Videos

by HawaiiDOT Highways • 16 videos • 835 views • Last updated on Aug 25, 2015

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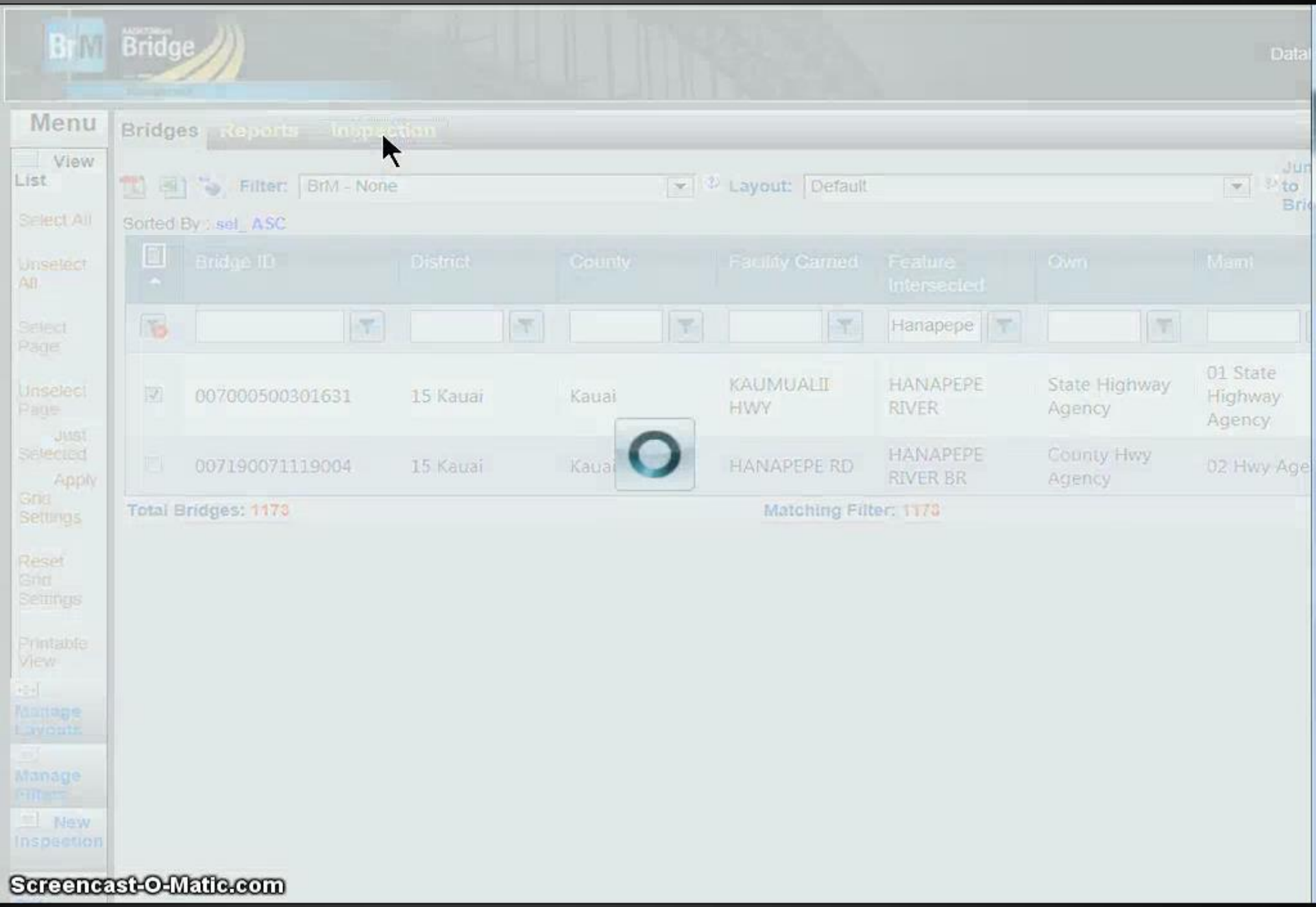
1	WATCHED	Logging in to BrM by HawaiiDOT Highways	0:43
2	WATCHED	Finding and Selecting Structures by HawaiiDOT Highways	1:15
3	Print Transition Report	Print Transition (CoRE to NBE) Report by HawaiiDOT Highways	0:51
4	Creating a New Inspection	Creating a New Inspection by HawaiiDOT Highways	1:29
5	Add Defects & Protective Systems	Add Defects and Protective Systems by HawaiiDOT Highways	4:03
6	Enter Other Inspection Items	Enter Other Inspection Items by HawaiiDOT Highways	0:57
7	Edit Element and Environment	Edit Element and Environment Ratings by HawaiiDOT Highways	1:45
8	Deleting an Element	Deleting an Element by HawaiiDOT Highways	0:30
		Adding a New Element	



Getting our inspectors to use NBE's

1. Training: brought in FHWA instructors to train our bridge inspectors to use NBE's.
2. We provided additional help.
3. We created custom forms reports.

Custom HDOT Forms and Reports:

1. Inspector goes into BrM and selects a bridge.
2. Inspector goes to "Reports" tab to print out the bridge inspection form for the selected bridge.
3. Custom form automatically inserts the NBE's elements for the selected bridge.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
NATIONAL BRIDGE ELEMENT
INSPECTION FORM
(TRANSITION - CORE TO NBE)

Date of Inspection: October 15, 2014

Bridge Number: 001000110307223 Bridge Name: KEAIWA STRM

District: Hawaii Route No: 00011 Milepost: 50 Facility: HAWAII BELT RD

NBI ITEM 36 - TRAFFIC SAFETY FEATURES			Indicate if feature meets currently acceptable standards. 0 - No 1 - Yes N - Not Applicable
36A	Bridge Railings	1	Notes:
36B	Transitions	1	
36C	Approach Guardrail	1	
36D	Approach Guardrail Ends	1	

ELEMENT INSPECTION								
ELEM NO. / DEFECT	ELEMENT / DEFECT DESCRIPTION	ENV.	TOTAL QUANTITY	UNIT	CS 1 (Good)	CS 2 (Fair)	CS 3 (Poor)	CS 4 (Severe)
38	Re Concrete Slab	1	13473	sq.ft				
Notes:								
210	Re Conc Pier Wall	1	344	ft				
Notes:								
215	Re Conc Abutment	1	116	ft				
Notes:								
234	Re Conc Pier Cap	1	344	ft				

Menu
Condition
Appraisal
Inventory
Schedule
Work
Assessments
Other Insp Items
HDOT Multimedia

Bridges Reports Inspection

Bridge: 001000110306600 Facility Carried: (007): HAWAII BELT RD Inspection:: 2014-10-22 (EUVN Type: : Regular NBI

English Metric

Traffic Safety Features

Traffic Safety Features

Bridge Railings (36A) (036A):	1 Meets Standards
Transitions (36B) (036B):	1 Meets Standards
Approach Guardrail (36C) (036C):	1 Meets Standards
Approach GR Ends (36D) (036D):	1 Meets Standards

Traffic Safety Feature Notes

Notes: CRACKS AND SPLITS ON RAILING AND POST ON INBOUND-OCEAN -HILO SIDE OF BRIDGE.

Other Features

Features

Bridge Posted:	N	Sign Visible/Legible:	☐
Riding Surface Rating:	3	Bridge Requires Insp:	☐

Other Feature Notes

Notes: NEW A/C OVERLAY HAS BEEN ADDED TO DECK

Repairs, Improvements, and Recommendations

Work Done Since Last Inspection

Notes: NONE

Proposed and/or recommended work

Notes: BRIDGE HAS BEEN RECOMMENDED FOR REPLACEMENT.
GPS COORDINATES ARE N 19 DEG. 08.324 / W 155 DEG. 31.037

Other Comments

Notes: MEASUREMENT TAKEN HAS BEEN ADDED TO NEW REPORT

Inspector

Inspector Name:	CRAIG K. YUGAWA	Inspector Title:	BMS1	Inspector Phone:	808-9330731
Other Inspector Name:	LLOYD M. LESLIE	Inspector Title:	BMS1	Inspector Phone:	808-9330731

Team Leader

Team Leader Name:	SALVADOR PANEM	Team Leader Title:	DIST. ENGINEER	Team Leader Phone:	808-9338620

Status: New Review Needed: ☑ Approved By:

Save Save & Close Cancel Delete Inspection

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
NATIONAL BRIDGE ELEMENT
FINAL INSPECTION REPORT

Date of Inspection: October 22, 2014

Bridge Number: 001000110306600 Bridge Name: NINOLE STRM

District Hawaii Route No: 00011 Milepost: 57 Facility: HAWAII BELT RD

NBI ITEM 36 - TRAFFIC SAFETY FEATURES			Indicate if feature meets currently acceptable standards. 0 - No 1 - Yes N - Not Applicable
36A	Bridge Railings	1	CRACKS AND SPLITS ON RAILING AND POST ON INBOUND-OCEAN -HILO SIDE OF BRIDGE.
36B	Transitions	1	
36C	Approach Guardrail	1	
36D	Approach Guardrail Ends	1	

ELEMENT INSPECTION

ELEM NO. / DEFECT	ELEMENT / DEFECT DESCRIPTION	ENV.	TOTAL QUANTITY	UNIT	CS 1 (Good)	CS 2 (Fair)	CS 3 (Poor)	CS 4 (Severe)
31	Timber Deck	1	1,482	sq.ft	0	1,482	0	0
1150	Check/Shake		741	sq.ft	0	741	0	0
1170	Split/Delamination (Timber)		741	sq.ft	0	741	0	0
111	Timber Open Girder	1	704	ft	0	0	704	0
1150	Check/Shake		352	ft	0	0	352	0
1170	Split/Delamination (Timber)		352	ft	0	0	352	0
_Some checks and splits on griders through out bridge.								
206	Tim Col or Pile Ext	1	10	each	0	0	10	0

93A	Fracture Critical Details	N			
93B	Underwater Inspection	N			
93C	Other Special Inspection	N			

OTHER FEATURES			REMARKS
Bridge Posted?	(Provide Posted limit or 'N' if not applicable)	N	NEW A/C OVERLAY HAS BEEN ADDED TO DECK
Signing for Posting Legible/Visible?	(Y or N)		
Riding Surface (Roughness) Rating	(3 - smooth, 2 - Avg, 1 - Poor)	3	
Bridge Requires Insp by Bridge Section Applies to in-house inspectors who aren't structural engineers	(Y or N)		

REPAIRS, IMPROVEMENTS AND RECOMMENDATIONS

List all work done to this bridge since last inspection (ie: structural repair work, cleaning, maintenance work, etc.)

NONE

List proposed and/or recommended work for this bridge including estimated cost (ie: structural repair work, cleaning, maintenance, etc.)

BRIDGE HAS BEEN RECOMMENDED FOR REPLACEMENT.
GPS COORDINATES ARE N 19 DEG. 08.324 / W 155 DEG. 31.037

Other comments or observations.

MEASUREMENT TAKEN HAS BEEN ADDED TO NEW REPORT

Inspector: **Name:** CRAIG K. YUGAWA **Title:** BMS1

Signature: _____ **Phone:** 808-9330731

1st Challenge

1. Getting our bridge inspectors to use National Bridge Elements (NBE's).

As of August 1, 2014 all our Bridges have been inspected using NBE's

2nd Challenge

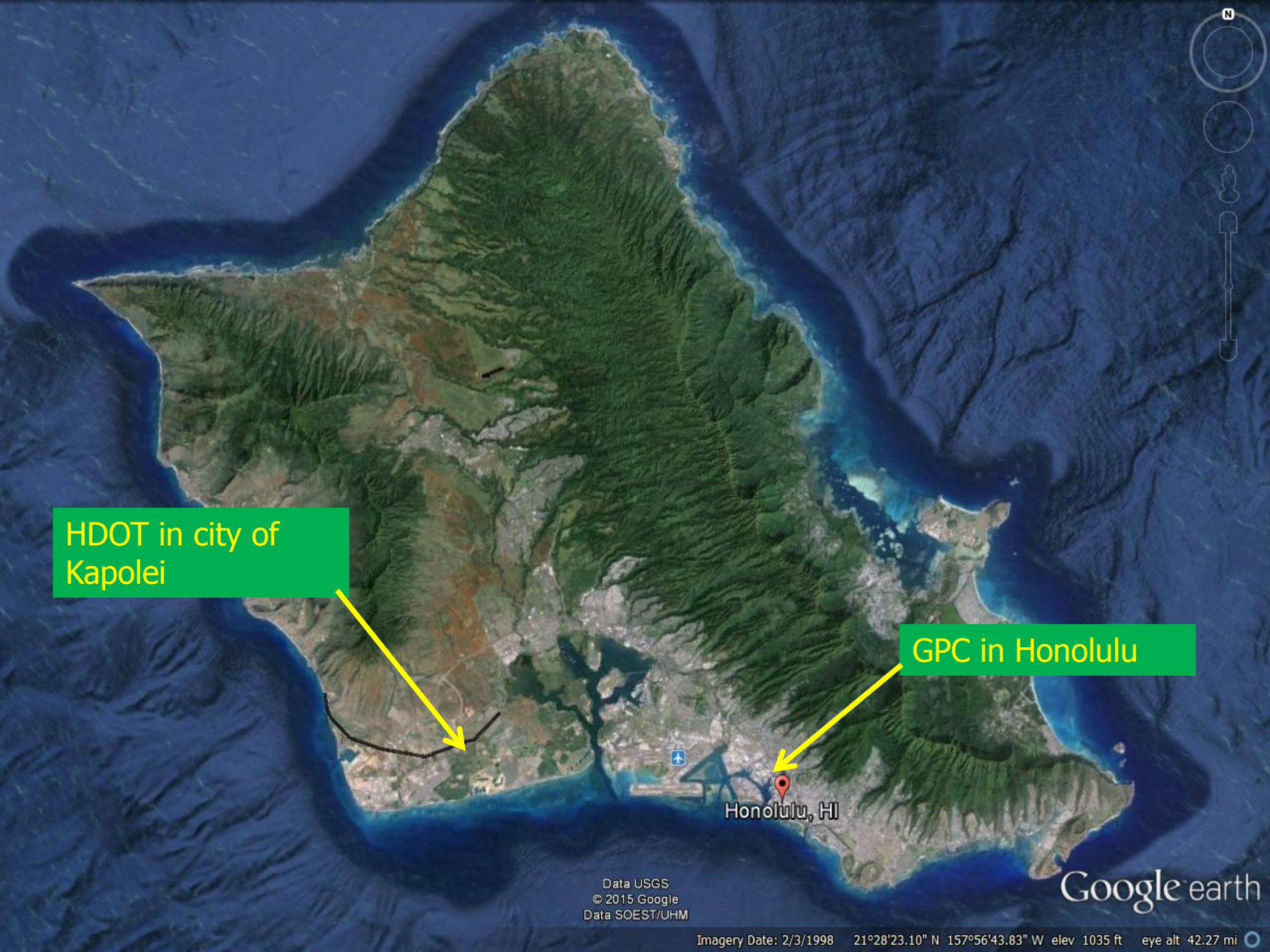
1. Getting BrM off our INTRAnet and onto the public INTERnet.

Why **Inter**net?

1. Issues with Consultant inspectors, and County inspectors accessing our **Intra**net server.
2. Allows more flexibility in accessing our BrM database.
    1. Laptops, Iphones, Ipads, etc.
    2. HDOT staff can access BrM program anywhere.

BrM on the **Inter**net

1. Security concerns from our IT Staff.
2. Learned about Hawaii's Government Private Cloud (GPC).
3. GPC: use remote servers (in the cloud) rather than using our local server.


HDOT in city of Kapolei
GPC in Honolulu
Honolulu, HI
Data USGS
© 2015 Google
Data SOEST/UHM
Google earth
Imagery Date: 2/3/1998 21°28'23.10" N 157°56'43.83" W elev 1035 ft eye alt 42.27 mi

GPC servers in Honolulu

BrM on the **Inter**net: Great results!

1. Mid-May, 2015, we contacted a State agency to get onto the cloud.
2. We were lucky: we were one of the first government agencies to request use of the GPC:
   a. Free use of the server.
   b. GPC takes care of backups, updates, and anti-virus.
   c. We just update the web server when there are updates to BrM.

BrM on the **Inter**net: Great results!

1. Requested use of the GPC in mid-May, 2015.
2. GPC's Contractor started work immediately.
3. Beta testing from mid-May to early July, 2015.
4. BrM on GPC available to public on July 15, 2015 **(ON THE INTERNET IN LESS THAN 2 MONTHS!)**

Conclusion - Two BrM Challenges

1. Getting our bridge inspectors to use National Bridge Elements (NBE's).
2. Getting our BrM off our INTRAnet and making it available on the public INTERnet.

HDOT Bridge Management Team

Questions?