



**ENHANCED NATIONAL
HIGHWAY SYSTEM AND
REQUIREMENTS WEBINAR
FEBRUARY 20, 2013
1:00 – 2:30 P.M.**

Webinar Housekeeping Tips



- There is a designated time at the end of the presentation for questions and answers.
- Please submit your questions in the chat pod during the presentation. Please direct questions to presenters.
- We also will open up the phone lines for questions.
- Please state your name and affiliation when you ask a question.

Welcome and Overview



STEFAN M. NATZKE

**TEAM LEADER,
NATIONAL SYSTEMS AND
ECONOMIC DEVELOPMENT
TEAM,**

**FHWA OFFICE OF HUMAN
ENVIRONMENT**

The NHS and HPMS



RALPH GILLMANN
FHWA OFFICE OF HIGHWAY
POLICY INFORMATION,
HIGHWAY SYSTEM
PERFORMANCE DIVISION

FHWA Office of Highway Policy Information

David Winter, PE

Highway Finance and Recovery Act

Chris Allen
Team Lead

- Responsible for highway finance data collection (an extensive amount of input on Federal, State, and local governments).
- The Recovery Act provides significant new funding for transportation infrastructure.

Motor Fuel and Tax Evasion

Ralph Davis
Team Lead

- Analyzes and compiles monthly state data on the amount of gallons taxed by each state.
- Provides data to be used in the attribution process

Highway System Performance

Ralph Gillmann
Team Lead

- The HPMS is a national program responsible for data on our nation's highways to the extent of the condition, performance, use and operating characteristics.

Travel Monitoring and Surveys

Tianjia Tang, PE
Team Lead

- Responsible for maintaining national programs to track traffic trends, vehicle distributions, and weight to meet data needs specified in federal highway legislation.



Highway Performance Monitoring System

- Annual data collection from the States
- Geospatial, route, inventory, pavement, traffic data
- Three ways of getting data
 - Full extent section data (universe)
 - Sample section data
 - Summary data
- Centerline system
 - Inventory direction only



The NHS and HPMS

- NHS is a section data item in HPMS
 - Currently provided by the States
 - New module for FHWA HQ to update NHS
- HPMS data provided for NHS expansion
 - Functional class, etc.
- Impact of NHS expansion on HPMS
 - Full extent truck counts on the NHS
 - Annual IRI on the NHS



Ramps and HPMS

- HPMS Reassessment 2010+ included ramps
 - Grade-separated interchanges only
- Only five data items:
 - Functional System, Urban Code, Facility Type, Through Lanes, AADT
 - “NHS” in the Extent does not include ramps
- HPMS does not indicate ramps on the NHS



Transportation Performance Management



NHS DATA COLLECTION AND REPORTING REQUIREMENTS

MAP-21 Requirements



- MAP-21 provides for FHWA to develop national performance measures
- Three measures apply specifically to the NHS
 - Pavement condition
 - Bridge condition
 - System performance
- Minimum condition requirements
 - Pavements on Interstate
 - Bridges on NHS

Performance Management Implications



- Pavement
 - Collection of condition data for additional mileage
- Bridge
 - All bridges are currently subject to condition assessment under the NBIS
- System Performance (NHS)
 - system performance data data will be required for NHS
- Details to be worked out through rulemaking.

TPM Contacts



- Measure Rulemaking
 - Francine Shaw Whitson 202-366-8028
- Pavement Condition Measure
 - Thomas Van 202-366-1341
- Bridge Condition Measure
 - Everett Matias 202-366-6712
- System Performance
 - Rich Taylor 202-366-1327

National Highway System



MIKE NEATHERY
TRANSPORTATION SPECIALIST,
NATIONAL SYSTEMS AND
ECONOMIC DEVELOPMENT
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FHWA OFFICE OF HUMAN
ENVIRONMENT

NHS Legislation



- ISTE A
- NHS Designation Act of 1995
- MAP-21
- 23 USC 103
- 23 CFR 470

Federal Designation Process for NHS/Interstate



- Why is it important?
 - Eligibility for National Highway Performance Program funds
- Who coordinates the changes?
 - FHWA, States, MPOs
- What is the official record?
 - Maps

MAP-21 Changes (Section 1104)



- Expands the NHS from ~165,000 miles to ~220,000 miles (effective October 1, 2012).
- Adds principal arterials not currently on the NHS/
- Removes mileage cap on the NHS.
- For Congressionally Designated Future Interstate routes, allows addition of non-connecting Interstate segment, if connected within 25 years of legislation.

Identifying the New Principal Arterials



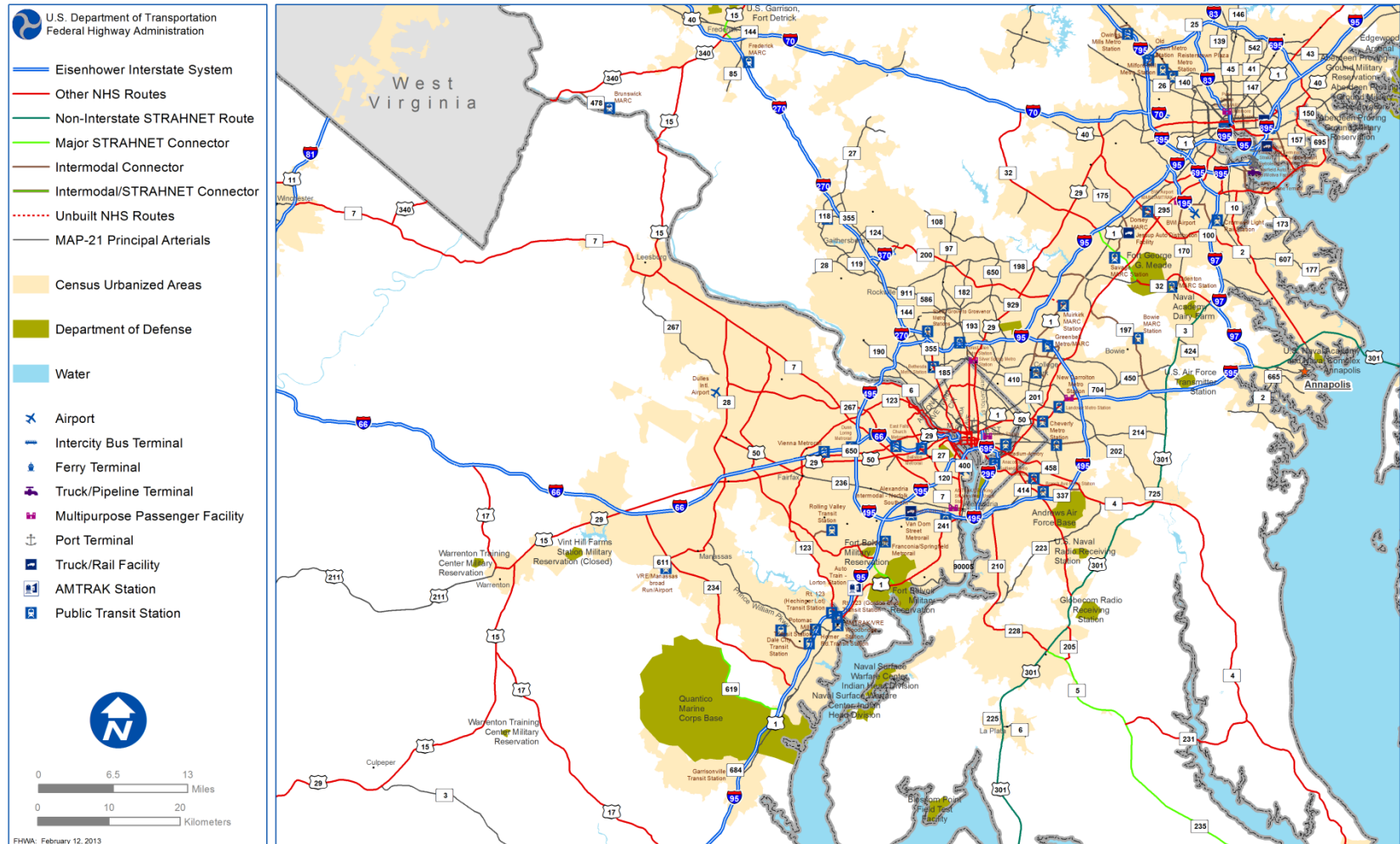
- 2011/2010 HPMS GIS Data
- Other State Sources
- September 2012 Memo to Review Principal Arterials

National Highway System











- ~220,000 miles of principal arterials composed of:
 - Interstate
 - Other principal arterials
 - STRAHNET routes/connectors
 - Intermodal connectors
- NHS maps website:
http://www.fhwa.dot.gov/planning/national_highway_system/nhs_maps/

National Highway System: Washington, DC--VA--MD



NHS Highways

-  Eisenhower Interstate System
-  Other NHS Routes
-  Non-Interstate STRAHNET Route
-  Major STRAHNET Connector
-  Intermodal Connector
-  Intermodal/STRAHNET Connector
-  Unbuilt NHS Routes
-  MAP-21 Principal Arterials

MAP-21 NHS FAQ/Issues



- Connect on One End to Existing/New NHS
- Upgrade to Principal Arterial—
Automatically NHS?
- NHS Ramps
- FHWA GIS Layer
- Technical Map Corrections

Are Ramps to NHS Routes on the NHS?



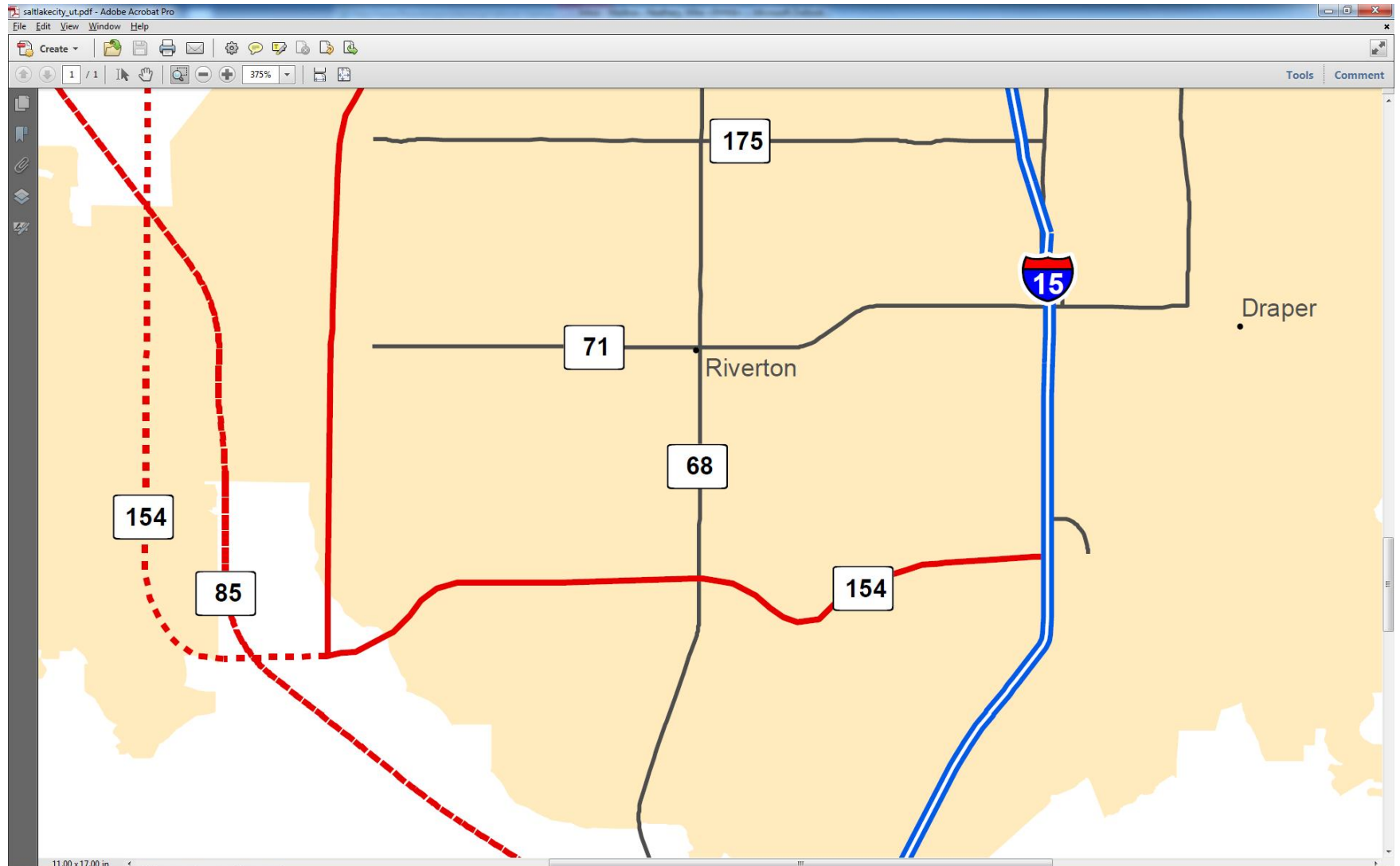
- For Federal-Aid Eligibility: **Yes**
- For OAC and Junkyard Control: **Yes**
- For HPMS: **No**
- For Bridge Management Purposes: **Yes**
- For Pavement Management: **TBD** (going through rulemaking)
- For Asset Management Plan: **Should be included**

Future NHS Data-Related Efforts



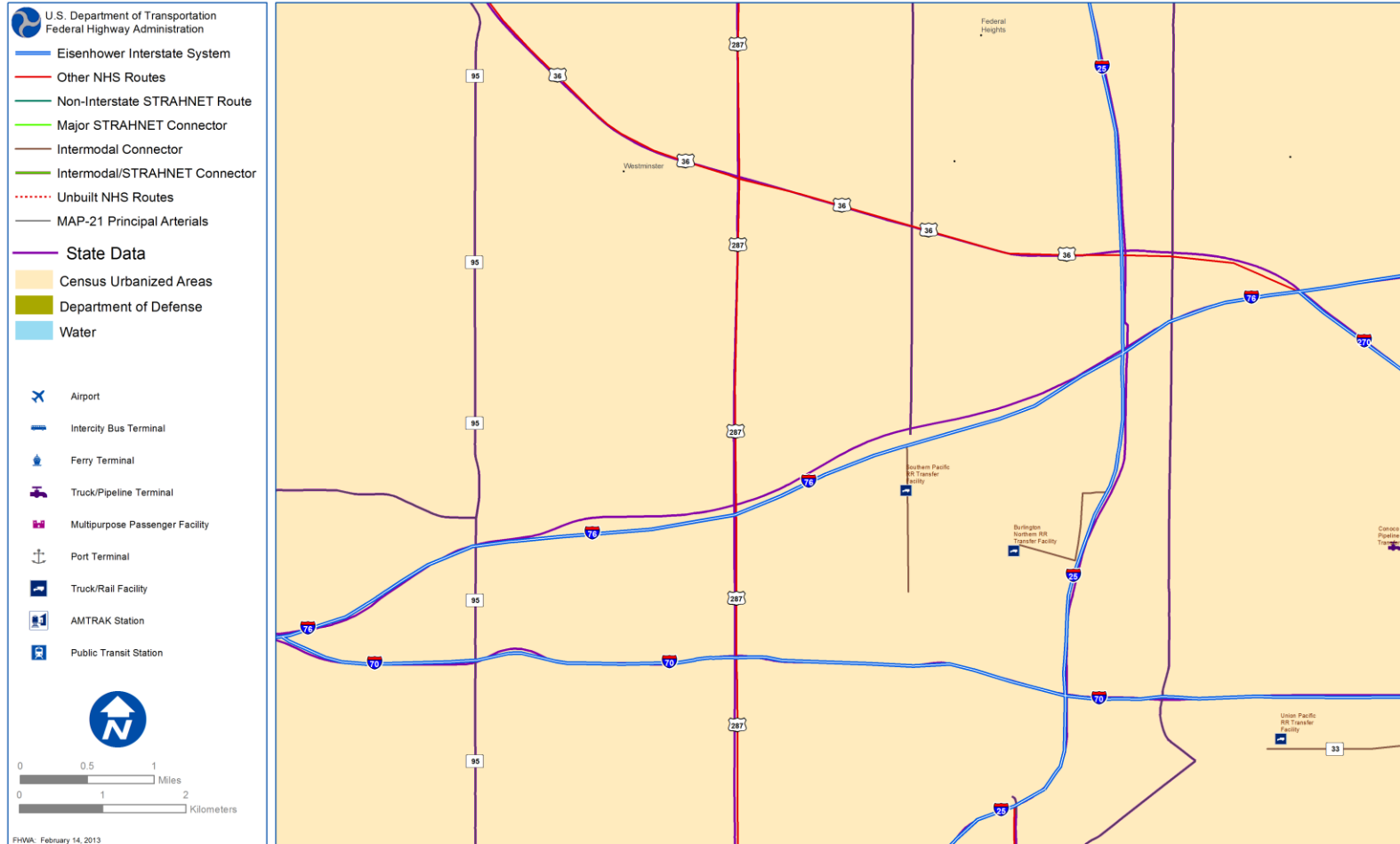
- Upgrade or “conflate” FHWA NHS GIS layer
 - ✦ Improve spatial depiction of highways.
 - ✦ Coincide the FHWA spatial layer with the layers used by the States.
 - ✦ Create “Federal-Aid Primary System” GIS layer.

Technical Map Correction: Gaps



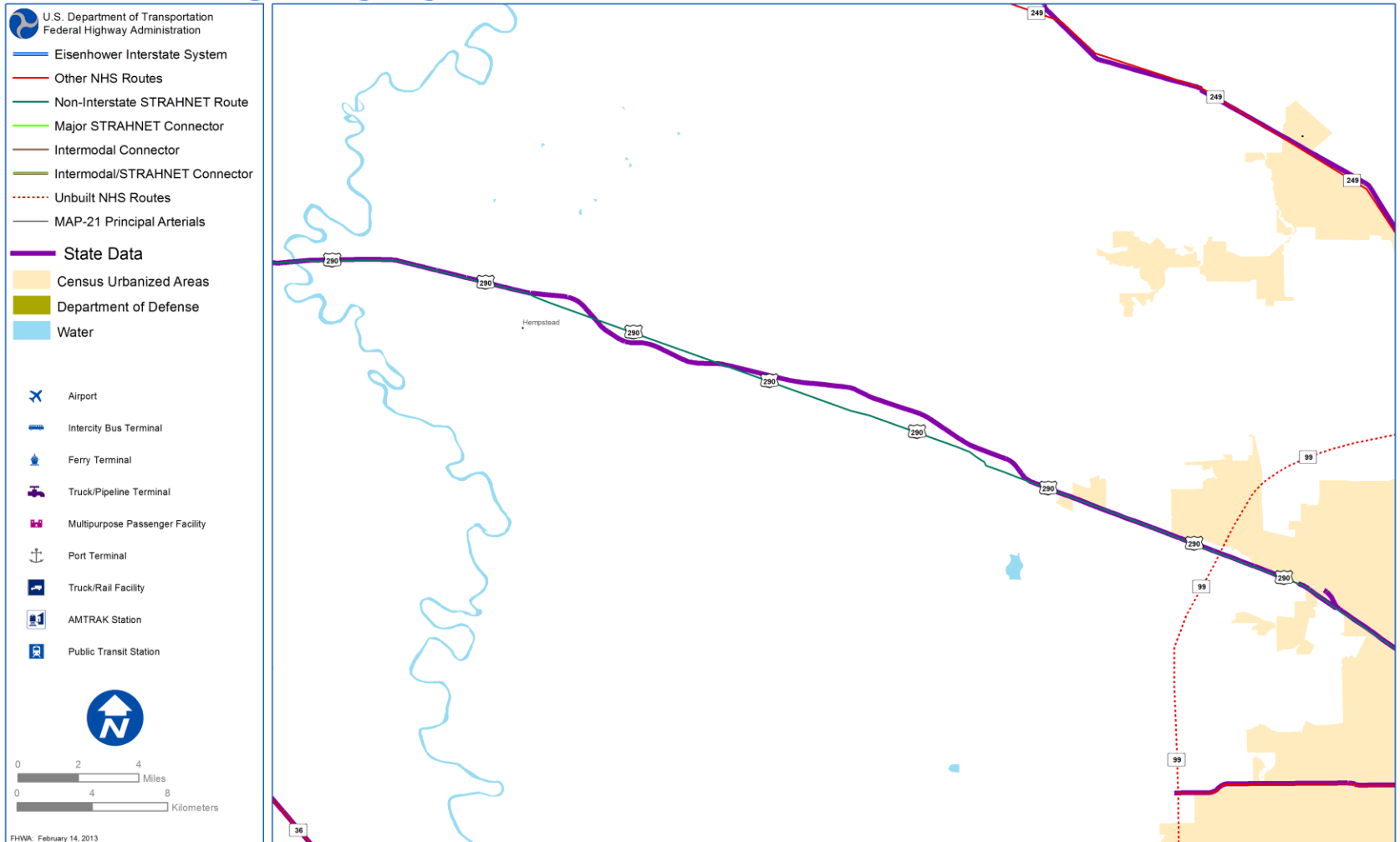
FHWA vs. State Spatial Line Comparison - Example 1

National Highway System: Colorado



FHWA vs. State Spatial Line Comparison - Example 2 (Hempstead, TX)

National Highway System: Texas



Guidelines for NHS Requests for Additions/Deletions



- Initiated by the State.
- Made in writing to the FHWA Division Office.
- Include maps and documentation of coordination with impacted jurisdictions.
- FHWA Division reviews, summarizes and recommends for transmittal to FHWA HQ.
- FHWA HQ approves and modifies the NHS maps as appropriate.

Guidelines for STRAHNET Requests for Additions/Deletions

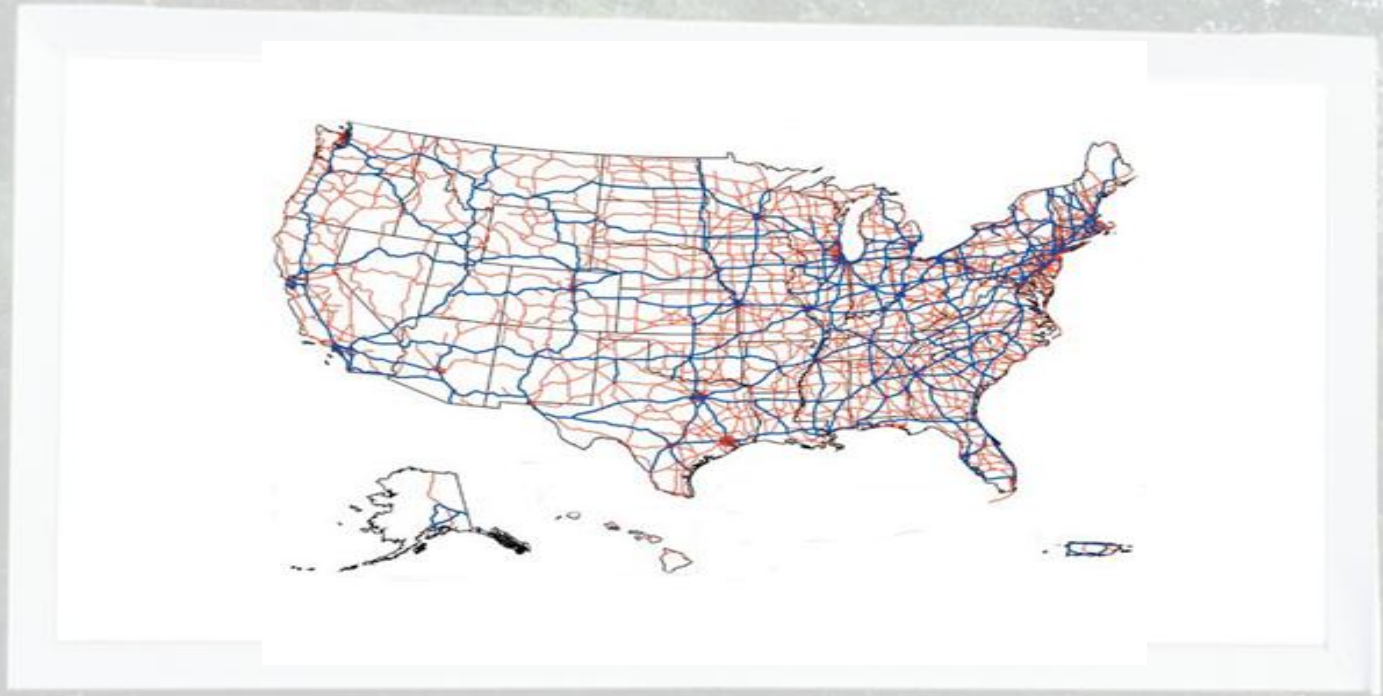


- Initiated by the State, military installation, or SDDC (DOD's Surface Deployment Distribution Command)
- Coordinated through the FHWA Division Office
- Include maps and documentation of coordination
- FHWA Division reviews, summarizes and recommends for transmittal to FHWA HQ
- FHWA HQ and SDDC to concur on revisions and modify NHS maps as appropriate

Outdoor Advertising Control



**DAWN HORAN
REALTY SPECIALIST,
PROGRAM DEVELOPMENT
TEAM,
FHWA OFFICE OF REAL
ESTATE SERVICES**



The Highway Beautification Act

Change in CONTROL ROUTES

Prior to MAP-21

Interstate System, Federal-Aid Primary System
and the National Highway System

After MAP-21

Interstate System, Federal-Aid Primary System
and the National Highway System

Possible Overlapping CONTROL ROUTES

Federal-Aid Primary System in existence on
June 1, 1991

VS.

(enhanced) National Highway System



Junkyard Control

Enhanced National Highway System and
Federal Requirements under MAP-21

Change in CONTROL ROUTES

Prior to MAP-21

Interstate System and Primary System

After MAP-21

(enhanced) National Highway System,
including the Interstate Highway System

Change in PENALTY percentage

Prior to MAP-21


10%

After MAP-21

7%

November 15, 2012 Memo MAP-21 Impacts on Outdoor Advertising Control and Junkyard Control

Realty Discipline Support Website FHWA Outdoor Advertising Control Memos Document number 43A

| | | |
|---|--|--------------------------------|
|  | | Memorandum |
| <hr/> | | |
| Subject: | INFORMATION: MAP-21 Impacts on Outdoor Advertising Control and Junkyard Control | Date: November 15, 2012 |
| From: | Susan Castellan Director, Office of Real Estate Services | In Reply Refer To: HEPFC-10 |
| To: | Division Administrators Assistant Division Administrators Division Realty Specialists and Officers | |
| <p>The purpose of this memorandum is to provide information to Division Realty Professionals concerning the Moving Ahead for Progress in the 21st Century Act (MAP-21) and the impacts this legislation will have on Outdoor Advertising Control and Junkyard Control.</p> <p>Outdoor Advertising Control</p> <p>The Highway Beautification Act requires States to provide effective outdoor advertising control along certain Federal-aid highway systems. Prior to MAP-21, those highway systems were the Interstate system, the Federal-aid primary system (as it existed on June 1, 1991), and the National Highway System (NHS). MAP-21 Section 1304 has amended 23 U.S.C. 103 to incorporate additional routes not previously included in the NHS and created an enhanced NHS. This enhanced NHS is now subject to outdoor advertising control. The penalty for not providing effective control of outdoor advertising remains at 10 percent.</p> <p>Junkyard Control</p> <p>MAP-21 Section 1404(b) has amended 23 U.S.C. 134 to require States to now provide effective junkyard control in areas adjacent to the enhanced NHS. Section 1404(b) also amended 23 U.S.C. 136 by reducing the penalty for not providing effective control of junkyards from 10 to 7 percent.</p> | | |

Looking Ahead.....

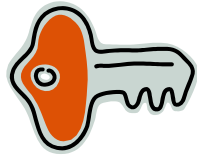


- Webinars
- Questions and Answers
- NAHBA Conference

Design Standards on the National Highway System



BROOKE STRUVE, PE
FHWA OFFICE OF PROGRAM
ADMINISTRATION



Key Questions



- What are the NHS standards?
- When are NHS design standards applicable?
- What design flexibilities are available?
- What are FHWA's interests with design standards and design exceptions for NHS projects?
- What actions can agencies take to verify their policies for projects on the NHS comply with FHWA-adopted design standards?

Flexibility in Design Decision Making



FHWA encourages designs that are based on:

- Project context and aesthetics
- Needs of all users
- Public and stakeholder involvement
- Balance community objectives and stakeholders values:
 - Roadway and user performance - safety and mobility
 - Human and natural environment
 - Constrained rights-of-way
 - Project costs

Discretionary Design Choices



Lead agencies for projects are responsible for:

- Selecting type of projects
- Establishing project priorities
- Establishing performance thresholds (e.g., traffic flow, pedestrian and vehicular safety)
- Selecting & designing roadway features:
 - ✦ Number of lanes
 - ✦ Whether or not to have sidewalks, bike lanes, or parking
 - ✦ Controlled or uncontrolled access

Geometric Design



Selection and design of roadway features should be based on:

- Context of the project
- Design standards and criteria
- Assessing impacts of the design of each feature:
 - lanes (e.g., number, width)
 - shoulders (e.g., include or omit, width)
 - clearance (e.g., height, width)
 - sight distance (e.g., intersections, curves)

NHS Standards



- Standards apply to all highways on the NHS:
 - For all highway construction projects
 - Regardless of highway jurisdiction (State or local)
 - Regardless of funding source
- Examples of types of standards:
 - Design
 - Traffic control devices (MUTCD)
 - Pedestrian accessibility (ADA)

NHS Design Standards

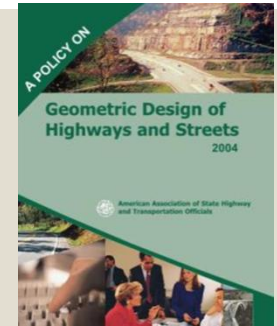


FHWA Adopted Design Standards (23 CFR 625):

- Roadway geometry
- Bridges and structures
- Erosion and sediment control
- Hydraulics
- Traffic noise
- Materials

<http://www.gpo.gov/fdsys/pkg/CFR-2012-title23-vol1/pdf/CFR-2012-title23-vol1-part625.pdf>

NHS Geometric Design Standards (Non-Interstate)



- New and Reconstruction Projects
 - 2004 AASHTO Green Book
 - State DOTs & local authorities must adopt AASHTO Green Book or develop equivalent standards that FHWA approves
- Resurfacing, Restoration & Rehabilitation Projects
 - State DOT and/or local authorities develop standards that FHWA approves

Flexibility in Design Standards



- AASHTO Green Book identifies standards and provides guidance for roadway features:
 - Standards for different applications (e.g., rural, urban)
 - Range of criteria and dimensions
 - Guidance to select dimensions based on expected impacts and conditions specific to each location

Flexibility in Design Standards Examples



- Urban Arterial Standards
 - Design speed: 30-60 mph
 - Lane width: 10-12 ft
 - Shoulder width: 4-8 ft
 - # of lanes: 4-8
- Rural Arterial Standards
 - Design speed: 40-75 mph
 - Traveled-way width: 22-24 ft (total for 2 lanes)
 - Shoulder width: 4-8 ft
 - # of lanes: 2 or more

Variances from Design Standards



- Design exceptions are a useful tool to balance competing project needs and achieve a design consistent with community values
- Agencies encouraged to develop design exception process
 - Determine impacts and cost of using standard dimensions
 - Identify risks and evaluate impacts with alternative dimensions
 - Identify and evaluate measures to mitigate risks and impacts
 - Document basis for decision and obtain necessary approvals

Standards Requiring FHWA Approval of Design Exceptions



- Design speed
- Lane width
- Shoulder width
- Bridge width
- Horizontal alignment
- Superelevation
- Vertical alignment

- Grade
- Stopping sight distance
- Cross slope
- Vertical clearance
- Lateral offset to obstruction
- Structural capacity

Approving Design Exceptions



- FHWA approval required for only 13 design standards
 - Stewardship and Oversight Plans identify when approval is delegated to State DOT and local authorities
- State DOTs and local authorities must evaluate and review all design exceptions
- Agencies' policies identify the process to assess, justify, document, and approve design exceptions

Approving Design Exceptions (*Cont.*)



- Approving design exceptions for FHWA is a “Federal Action” which requires:
 - Evaluation of the impacts of each exception
 - An environmental review
- Design exceptions, by themselves, typically do not change a project scope or cause significant impacts
- Project’s environmental review is sufficient to verify design exceptions have no adverse impact

Highways Added to NHS Under MAP-21



- Effective date of MAP-21 was October 1, 2012
- Highway projects may proceed “as is” if:
 - Environmental decision completed prior to Oct. 1 or
 - Final design was completed prior to Oct. 1
- All other applicable projects on NHS must:
 - Comply FHWA approved design standards
 - Evaluate, approve, and document design exceptions
 - Verify design exceptions have no environmental impact in documentation



Summary



- Standards apply to all projects on the NHS
- FHWA encourages flexibility when using standards to evaluate and design projects
- Design exceptions are a useful tool to achieve a balance of project needs and community values



Summary



- State DOT or local authorities must evaluate, approve, and document design exceptions
- Approving design exceptions is a Federal Action, which requires reviewing and documenting their potential environmental impacts
- Projects completed after October 1, 2012 must comply with NHS standards

Where to find more information:



- Your State DOT's
 - Project development process
 - Design exception process
 - Design manual
 - State DOT engineering staff
- FHWA Division Office in Your State
 - <http://www.fhwa.dot.gov/about/field.cfm>



Where to find more information:



- **FHWA**

- Office of Program Administration <http://www.fhwa.dot.gov/design/>
- MAP-21 <http://www.fhwa.dot.gov/map21/>
- Context Sensitive Solutions <http://contextsensitivesolutions.org/>
- *Mitigation Strategies for Design Exceptions*
<http://safety.fhwa.dot.gov/geometric/pubs/mitigationstrategies/>



- **AASHTO**

- Green Book
https://bookstore.transportation.org/collection_detail.aspx?id=110
- *A Guide for Achieving Flexibility in Highway Design*
https://bookstore.transportation.org/collection_detail.aspx?ID=31

Questions and Answers



- Phone lines are now open for questions.
- Chat box in lower left hand side of the screen.



Contact Information



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