

ROAD SAFETY AUDIT REPORT

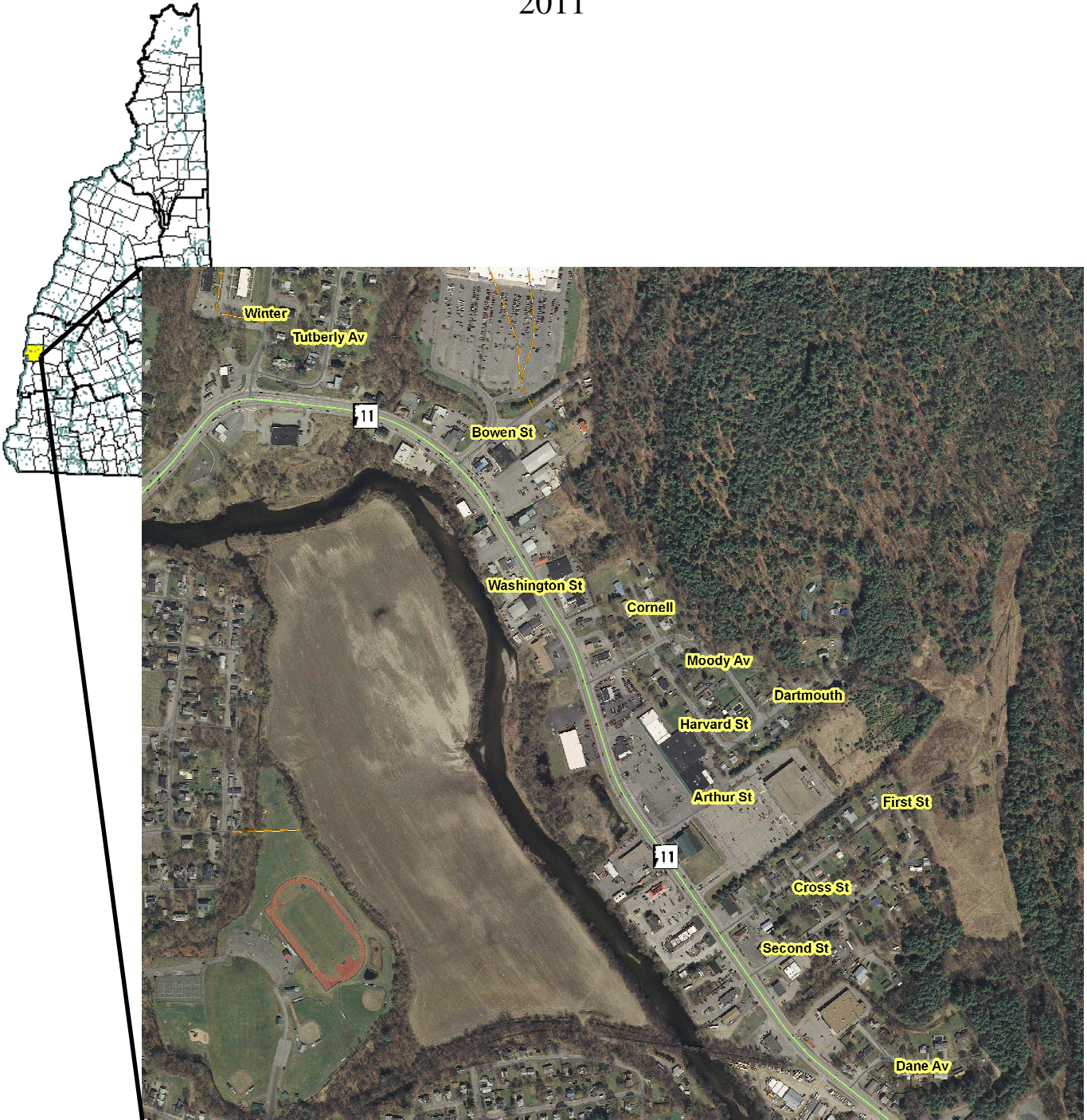
Road Safety Audit Report

Claremont, New Hampshire

New Hampshire Route 11 (Washington Street)

Claremont Compact – Dane Avenue to Winter Street

2011



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Claremont New Hampshire

PROJECT: Claremont, NH – State Route 11, Dane Av to Winter St.

DATE OF REVIEW: May 3, 2011

ATTENDED BY:

Nate Miller – UVLSRPC
Robert Hudson – New Hampshire DOT
Stuart Thompson – New Hampshire DOT
John Butler – New Hampshire DOT
Alan Hanscom – New Hampshire DOT

OWNER REPRESENTATION:

Kurt Beck – Claremont
Tracey Thibault - Claremont
Nancy Merrill – Claremont
Peter Chase – Claremont
Alex Scott – Claremont

PROJECT CHARACTERISTICS:

Audit Type: Existing Road
Units of Measure: US
Adjacent Land Use: Urban
Posted Speed (US): 30 mph
Opposite Flow Separation: Undivided
Service Function (Rural): Rural Minor Arterial
Terrain: Flat
Climatic Conditions - Temperature: Cold Winter (freezing, icing possible)
Climatic Conditions - Snow: Snow in winter

BACKGROUND:

New Hampshire Route 11 is a 104.14-mile long east–west state highway in New Hampshire, running westward along the southern shore of Lake Winnepesaukee. Its eastern terminus is at the Maine state line in the city of Rochester, where it continues north as Maine State Route 11. U.S. Route 202, which runs concurrent with NH 11 through most of Rochester, follows NH 11 across the border. The western terminus is at the Vermont state line in the town of Charlestown, where it becomes Vermont Route 11. On its route, it runs concurrent with Interstate 89 for approximately 3.7 miles near the town of New London, and with U.S. Route 3 for approximately 17.3 miles from Franklin to Laconia.

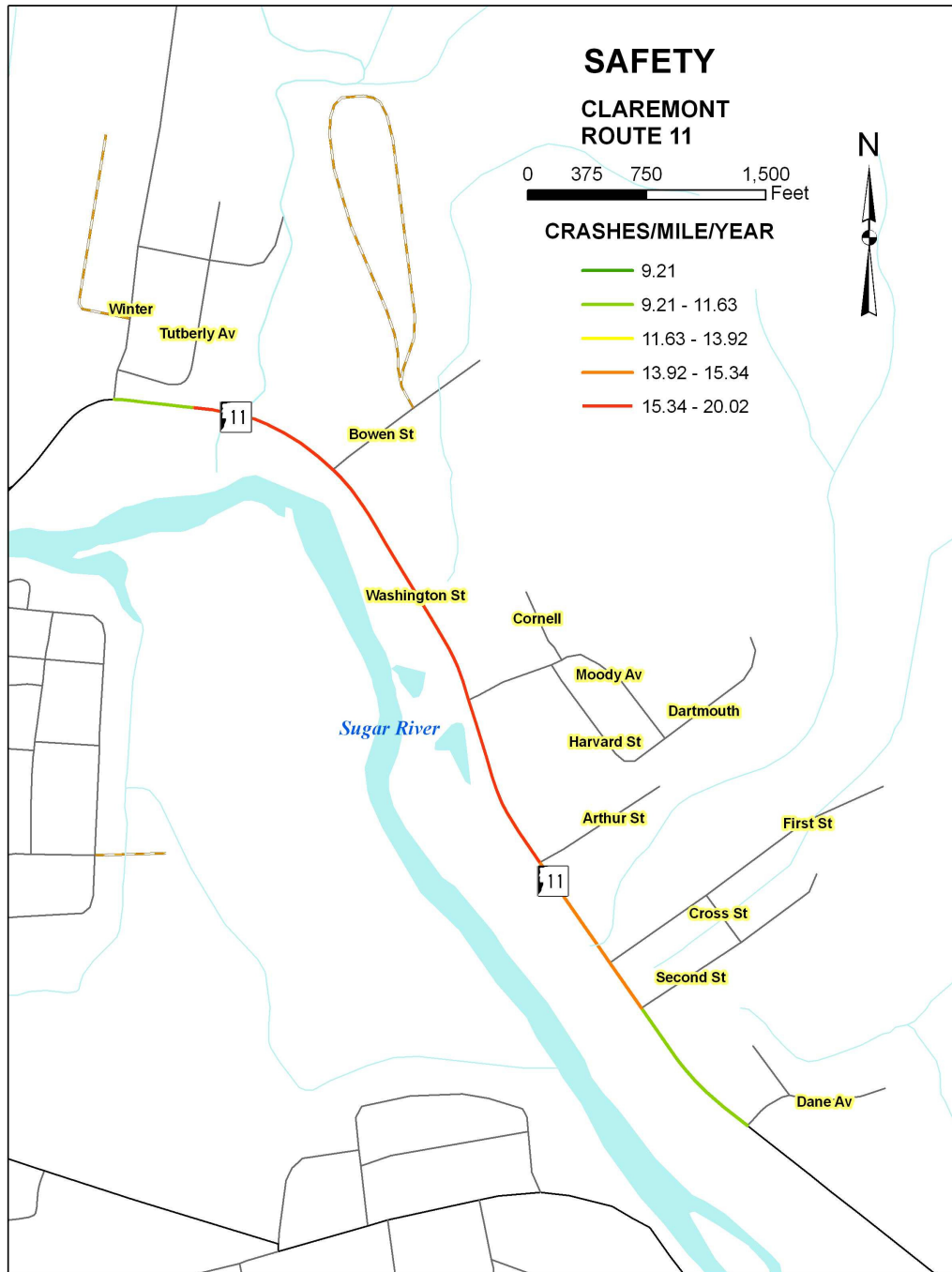
The segment of Route 11 in Claremont between Parsons Avenue and Winter Street is approximately 5,000 feet long. The portion from Arthur Street to Winter Street was reconstructed in 2002 – 2004 to a 4-lane roadway between Arthur Street and Bowen Street, and to a 5-lane roadway between Bowen Street and Winter Street. It was previously a 3-lane roadway with a center turn lane. This

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commercial section includes supercenters, grocery stores, car sales, shopping plazas, and several convenience eating establishments. There are approximately sixty access points per mile along this corridor, the 2010 AADT was 20,512.

CRASH HISTORY

Over the analysis period, 2002 to 2010, there were 118 reportable crashes. Ninety five-percent were multiple vehicles crashes, forty percent were between the hours of 3:00 pm and 7:00 pm. While the majority of crash reports sited “No Improper Driving or Unknown”, a significant proportion were “Failed toYield” or “Driver Inattention”. Thirty five percent of vehicle turning movements were “Left Turn” and sixty-five percent were coded “No-Turn”. The expected number of crashes/mile/year are shown in the graphic below.



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ROADSAFETY AUDIT PROCESS

The Road Safety Audit Process includes eight steps.



Step 1: Identify Project or Existing Road

Step 2: Select Independent and Multidisciplinary RSA Team

Step 3: Conduct Start-up Meeting to Exchange Information

Step 4: Perform Field Reviews under Various Conditions

Step 5: Conduct RSA Analysis and Prepare Report Findings

Step 6: Present RSA Findings to Owner/Design Team

Step 7: Prepare Formal Response

Step 8 Incorporate Findings into the Project when Appropriate

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ROADSAFETY AUDIT PROCESS:

Project Identification and Team Selection

The City of Claremont identified this project location as an area of concern based on the high number of crashes, unsafe acts, and perceived unsafe conditions. Working with the Upper Valley Lake Sunapee Regional Planning Commission, they formed a team of Auditors representing planning, engineering, law enforcement, and emergency medical service disciplines. Staff from the Department of Transportation facilitated the audit as a function of the Highway Safety Improvement Plan.

Start Up Meeting

At the pre-audit meeting, participants discussed the following points:

- Drivers entering from residential streets are not able to see approaching traffic
- Left turning traffic into businesses from NH Route 11:
 - Rear-end crashes
 - Drivers taking chances with short gaps
- Drivers exiting businesses on to NH Route 11 being hit
- Drivers going in excess of the speed limit
- Most crashes are associated with left turns
- Crashes have increased since reconstruction to a four lane cross section
- Businesses are not willing to give up redundant access points
- The Bowen/Washington Street intersection sees an elevated number of crashes because drivers are crossing painted median
- The Moody Avenue/Washington Street intersection is dangerous for drivers turning left. Restricted sight distance due to parking on adjacent property.

Field Review

The team parked their vehicles at the intersection of Washington Street and Winter Street and proceeded easterly through the audit area on foot.

General Recommendations

A complete planning/access management study for this corridor from Roberts Hill Road to Winter Street.

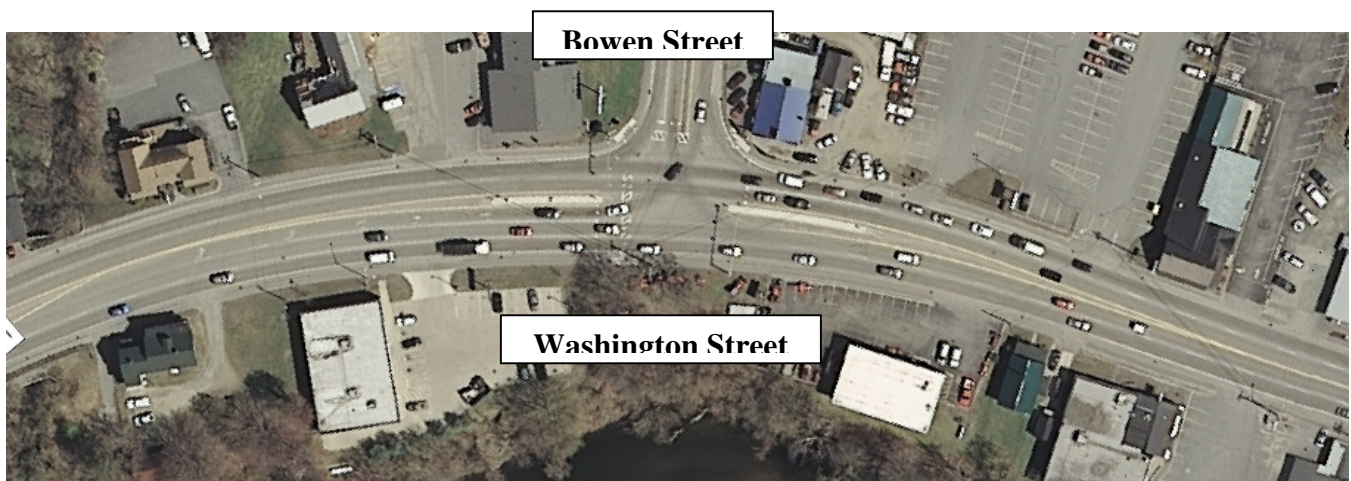
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RSA FINDINGS

Location: Intersection of Bowen Street and Washington

Description of Safety Issues:

On the approach to the intersection, there are numerous access points. Drivers entering traffic from these access points are attempting to cross into the queue of vehicles at the traffic light. This left turn movement is causing confusion and delay to both directions of traffic. On the eastbound approach the median island extends approximately 120 feet from the intersection, the turn bay is 550 ft long. On the west bound approach to the intersection the median island is 135 ft long, the cross over restrictive markings are 550 ft long.



Suggestions:

Extension of the raised median islands at this location will limit turning options for vehicles, and shift these movements to safer locations. Recent studies show that the installation of raised median islands reduces all crashes by twenty-five percent. The predicted number of crashes in this segment is 15-20 crashes/mile/year. Potentially the reduction of crashes would be 4 to 5 crashes/mile/year.

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Location: Intersection of Moody Avenue and Washington Street

Description of Safety Issues: Moody Avenue provides primary access to Washington Street for approximately forty residences, and secondary access for two businesses. The business (Arrow Head Motors) on the southeast corner of Moody and Washington Street has recently closed down an access point on Washington Street that was in close proximity to Moody Avenue. However, the manner in which they display their vehicles restricts the sight distance for vehicles entering Washington Street from Moody Avenue. City planning staff indicated that a new business may be opening in the vacant space on the west side of the intersection.

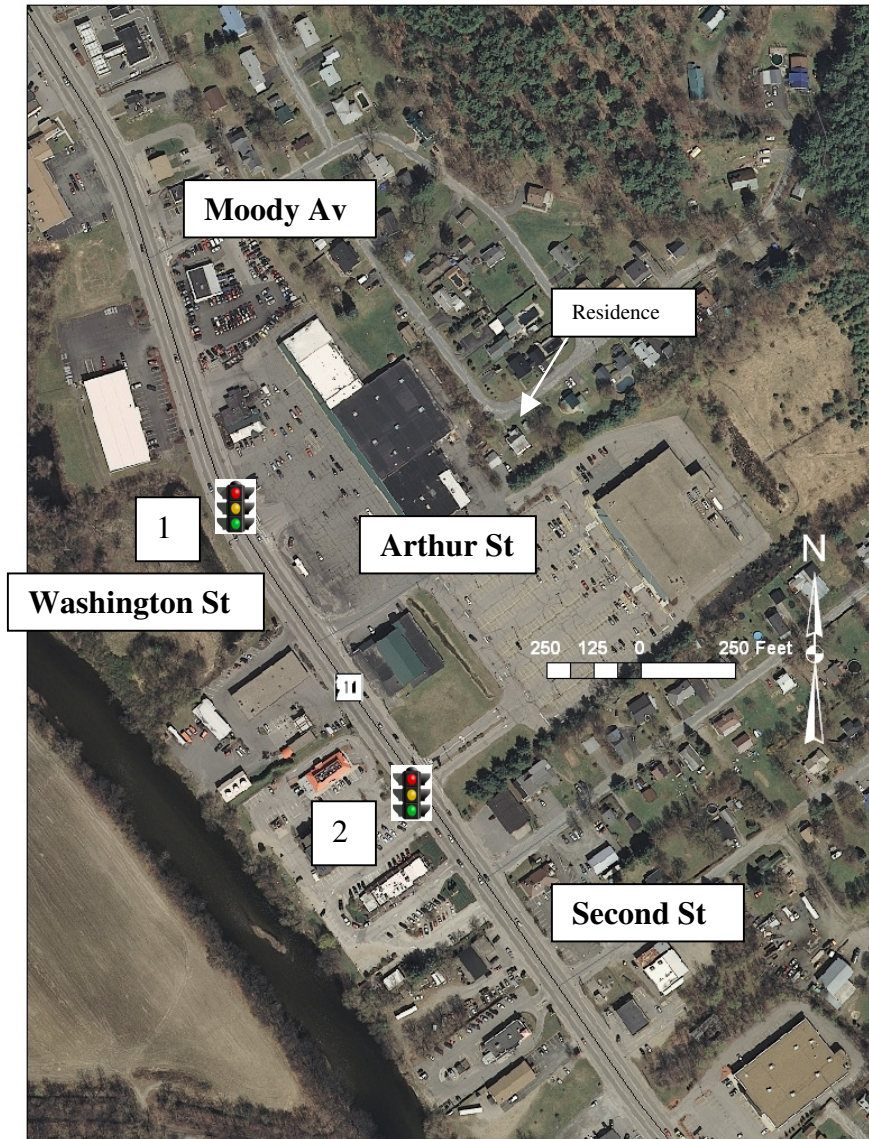


Suggestions: The obvious suggestion at this location is to work with the business on the southeast corner to open up the sightline for vehicles turning left or right onto Washington Street from Moody Ave. Other recommendations include restricting Moody Avenue to “right out” only movements. Further enhancements depend on the proposed development on the west side. Channeling traffic from existing and future business to one access point and installing a signal is a potential option.

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Location: Area from Moody Avenue to Second Street

Description of Safety Issues: There are no less than fifteen access points in this area and ten businesses. Private access points, on Washington St., before and after Arthur St. are signalized. Arthur St provides primary access to one residence, and secondary access to several businesses. Left turning traffic accounts for the majority of crashes in this area.



Suggestions: Within this area there is no one solution to address the safety issues. Solutions for consideration are related to access control and will require a planning/access study.

Potential Solutions:

- Close Arthur Street and provide access to one or both adjacent signalized intersection. Would require easements from area businesses.
- Consolidate the two existing signalized intersections into one new signalized intersection at Arthur Street

Considerations: Single residence on Arthur St (currently for sale), future expansion and connections north of existing businesses, access for delivery trucks to unload, and pedestrian access.

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Looking East at Intersection Number 1



Looking East at Intersection Number 2

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Audit Response:

The next step in the Road Safety Audit process is for the owner (local or state) to document their response to the findings of the audit report. The response should outline what actions the owner (local or state) will take related to each safety concern listed in the report. The owner may either:

- Agree with the suggestion described by the audit team and commit to its implementation, outlining a schedule for the completion of the suggestion.
- Disagree with the suggestion described by the audit team and commit to an alternative, outlining a schedule for the completion of the alternative. In doing so, the owner should provide a valid reason as to why they choose not to adopt the audit team's suggestion.
- Choose not to implement certain improvements at all due to constraints or disagreement regarding the safety issue, believing that there is no increased risk associated with the concern raised by the audit team. In doing so, the owner should document the reasoning behind their decision.

Protection of Data from Discovery & Admission into Evidence

Section 148(g)(4) stipulates that data compiled or collected for the preparation of the HSIP Report "...shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in an action for damages arising from any occurrence at a location identified or addressed in such reports..." This information is also protected by 23 USC 409 (discovery and admission as evidence of certain reports and surveys).