



# Briefing on NDOT Research Program

Agenda Item # 14

April 14, 2014

Ken Chambers

Research Chief





# Research Section Staff



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# 23 USC 505

## (Research Requirement)

- Two percent of each state's annual apportionment shall be available for planning and research.
- No less than one quarter of those funds shall be used for research, development, and technology transfer



# 2014 Apportionment Example:

National Highway Performance Program	\$200,497,123
Surface Transportation Program	\$ 92,222,381
Congestion Mitigation & Air Quality	\$ 32,538,736
<u>Highway Safety Improvement Program</u>	<u>\$ 20,932,651</u>
Total:	\$346,190,891

Two percent for State Planning & Research: \$ 6,923,818

No less than 25 percent of that for Research,  
Development, and Technology Transfer \$ 1,730,955





# Federal Matching Requirements for Research

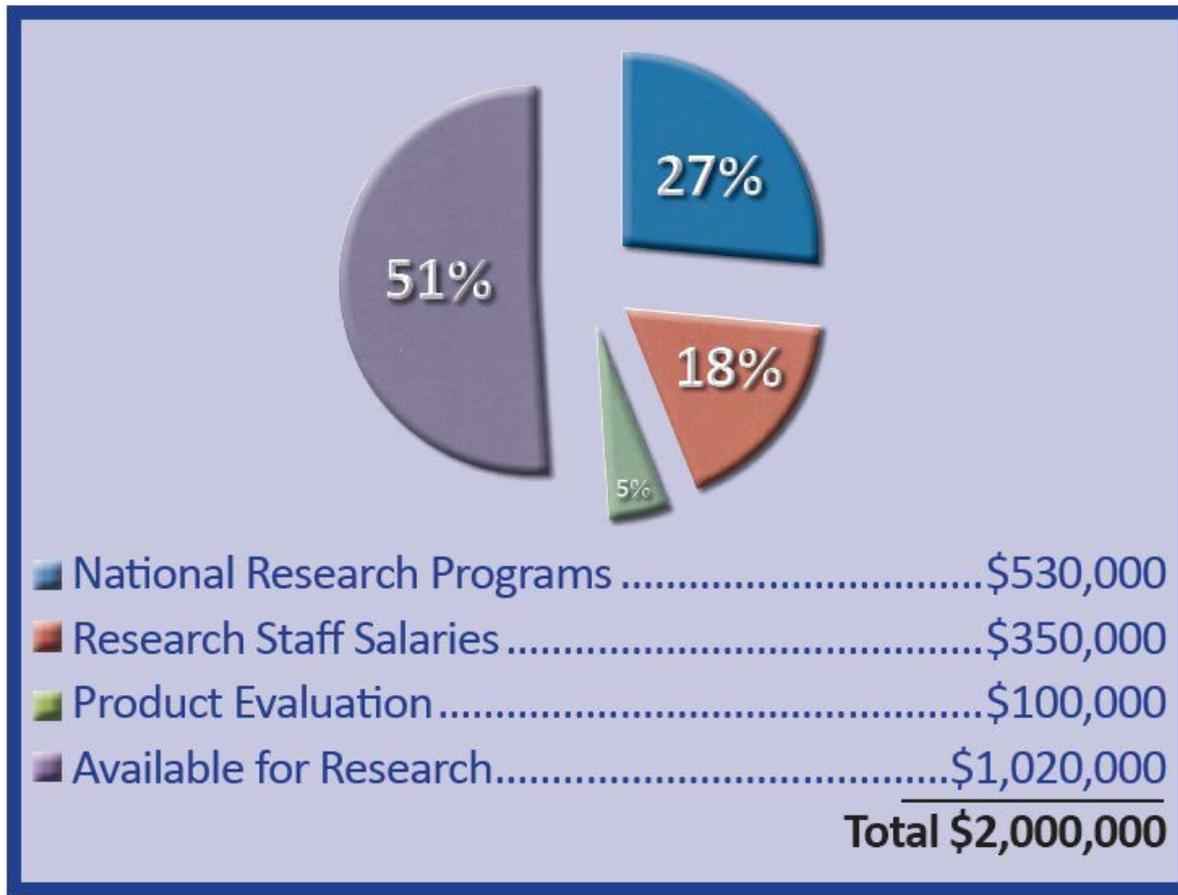
80 percent federal funds  
20 percent State

There are exceptions for some national research programs





# Where Do We Spend Research Funds?





# How Does NDOT Select Research Projects?

- Established in our Research Manual, approved by FHWA in 2003.
- Rely on two interdisciplinary groups of professionals within the Department:
  - The Research Advisory Committee
  - The Research Management Committee



# NDOT's Research Project Selection Process

- Solicit problem statements internally and with our transportation partners
- Rank problem statements
- Solicit research proposals for the higher-ranking problem statements
- Solicit proposals nationally
- Rank the proposals (scope, schedule, budget)
- Fund selected proposals based on need and available budget



# Research Process Schedule

## Research Timetable

Oct 16 – Dec 31: Conduct Meetings/Brainstorm Sessions to Identify Research Needs

Jan 1 - 31: Develop/Prepare Problem Statements

Feb 1 – 28: Sort, Screen and Clarify New Problem Statements

Mar 1 – 15: RAC Evaluates and Prioritizes Problem Statements

Mar 16 -June 15: Proposal Development/Submission

Oct 1-15: Solicitation Begins; Distribute Problem Statement Form

Sep 1-30: Agreement Drafting / Develop SPR Work Program

Aug 1 – 31: RMC Meets to Approve New Research Priorities

Jun 15 – July 31: RAC Meets to Evaluate and Prioritize New Proposals



# The NDOT Research Advisory Committee (RAC)

- Composed of 16 NDOT technical experts and one non-voting FHWA representative
- Review and rank problem statements
- Review and rank proposals
- Present final recommendation to the Research Management Committee



# The Research Management Committee (RMC)

- Six NDOT members
  - Two Deputy Directors
  - Four Assistant Directors
- Review Research Advisory Committee recommendations (ranked proposals)
- Incorporate any necessary changes
- Approve final selections and budget



# The Direct Benefits of Research

- Pedestrian Safety
- Driver Safety
- Develop Cost Savings
- Verifying Transportation Investments
- Improve Materials through Specifications
- Effective Operational Solutions
- Improved Bridge Structures
- More Effective Maintenance



# The Indirect Benefits of Research

- We get the results first
- Partner with the universities to ongoing challenges
- Engineering students are supported and attracted to NDOT
- Discussing issues improves communication and awareness
- NDOT shares its solutions with others



# The Overhead Rate

- The national rate for research is 46.5 percent
- NDOT has allowed a rate of 23 percent with the universities



# University Transportation Center NDOT Research Partnership

- Federal grants are awarded directly to each Center
- Universities are required to match grant monies at a minimum of 50 percent
- Centers are usually consortiums of universities with specific areas of expertise
- We have had success in leveraging these federal funds in the past



# The Future of the NDOT Research Program

- No significant changes to the apportionment formulas or governance are expected
- We are currently improving our project selection process at the Research Advisory Committee level
- We would appreciate an opportunity to present research updates to the board
- University Transportation Center matching funds will remain separate and will require Board approval



# Recommended Policy

- The Department will present its research program annually to the Board for informational purposes.
- The Department will present University Transportation Center (UTC) funding requests separately for possible action by the Board.



# Briefing on University Transportation Center (UTC) - SOLARIS

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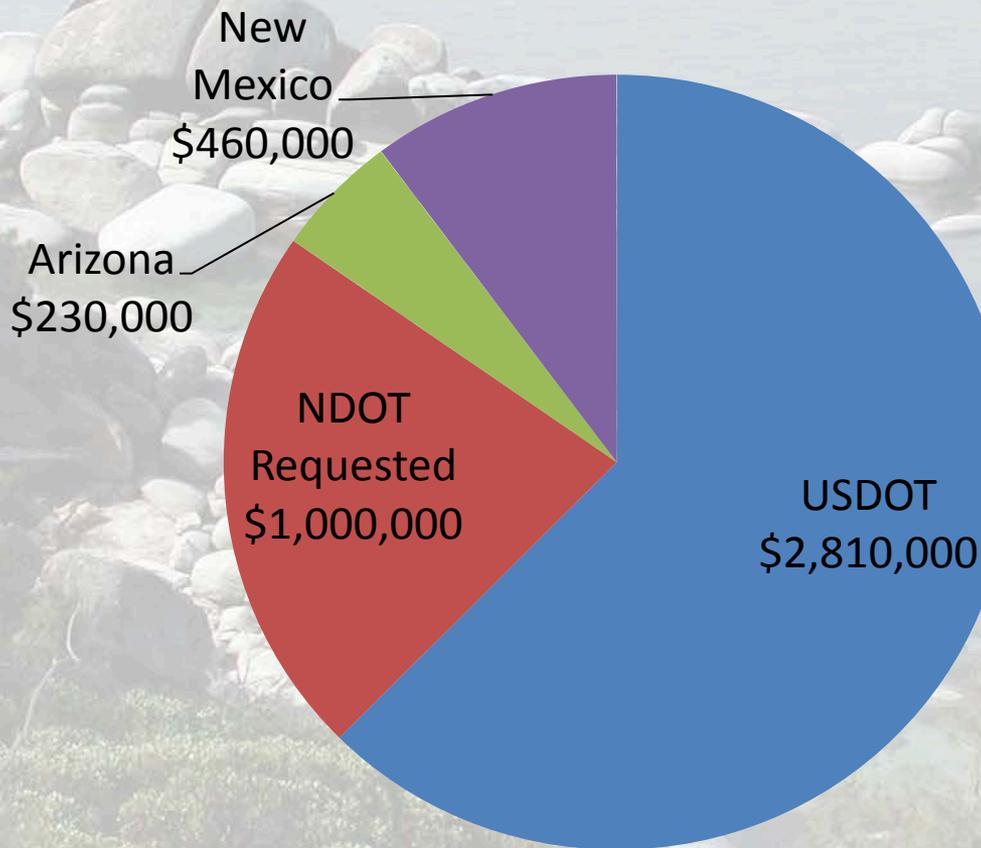
Research Chief







# Potential UTC Funding Sources Over Four Years





# Potential Research Topics

- Enhance Bridge Design Standards
- Improve Pedestrian Safety
- Analyze High Crash Locations to Improve Safety
- Improve the Effectiveness of Various Maintenance Treatments



# UTC Advisory Committee

- Chair: Tracy Larkin-Thomason
- Tom Skancke
- Seven NDOT Technical Experts
- Two from RTC Washoe
- Two from RTC Southern Nevada
- Five from other states



# Previous Student Awards

- International/National level
  - ITE Best Student Paper (Wang)
  - ITS America Student Paper Competition 1<sup>st</sup> Place (Hu)
- Regional Level
  - ITE District 6: Best Student Paper (3 times)  
Van Wagoner Award
  - Student Chapter Winning Proposal
  - ITE Intermountain Section
  - Las Vegas Fall Conference





# Previous Media Spotlights

4A

## Wrecks/Researchers look at new methods of flagging dangers

From 1A

Typically, state engineers make changes in high-accident locations — adding signs, road stripes or a traffic signal, for example — after the area has experienced a set level of serious accidents.

### TRAFFIC SAFETY SURVEY

Log on to [wolfweb.unr.edu/homepage/zongt](http://wolfweb.unr.edu/homepage/zongt) to take the survey on the Web. The link to the traffic safety survey can be found at the top of the page.



NEVADA  
DOT

[nevadadot.com](http://nevadadot.com)



# Department Request

Please approve:

Up to \$1,000,000 in State highway funds to match federal funds for NDOT research projects to be performed by the UTC known as SOLARIS.

