



# STRATEGIC RESEARCH QUESTIONS: PROGRESS REPORT

RDSC Meeting  
June 22, 2010

# Introduction

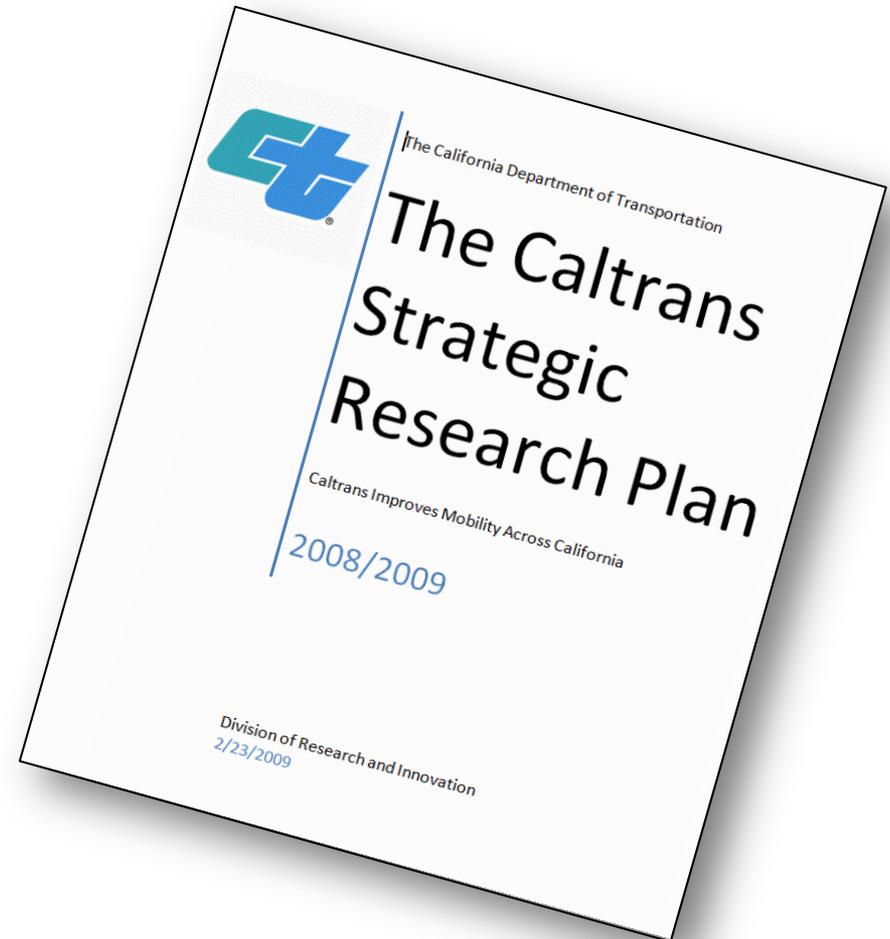
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- Priority SRQ's focus attention on specific research topic areas
- In each area we're trying to refine high-level research questions to guide future research
- Each area is at a different stage of development
- This presentation provides a high-level overview
- Every RDAC and RDSC meeting in the future will include a presentation on one SRQ area

# The Strategic Research Plan

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- Approved in 2008/2009
- Driven by research needs and the Caltrans Strategic Plan
- 38 Strategic Research Questions (SRQs)
- 9 Priority SRQs



# The Priority SRQs

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- Organized the SRQs into five groups

- Safety

- SF1 Design and Construction
    - SF4 Proactive Safety

- Mobility

- M1 Data
    - M2 ICM
    - M5 TDM Real Time
    - M6 TDM System Elements

- Goods Movement

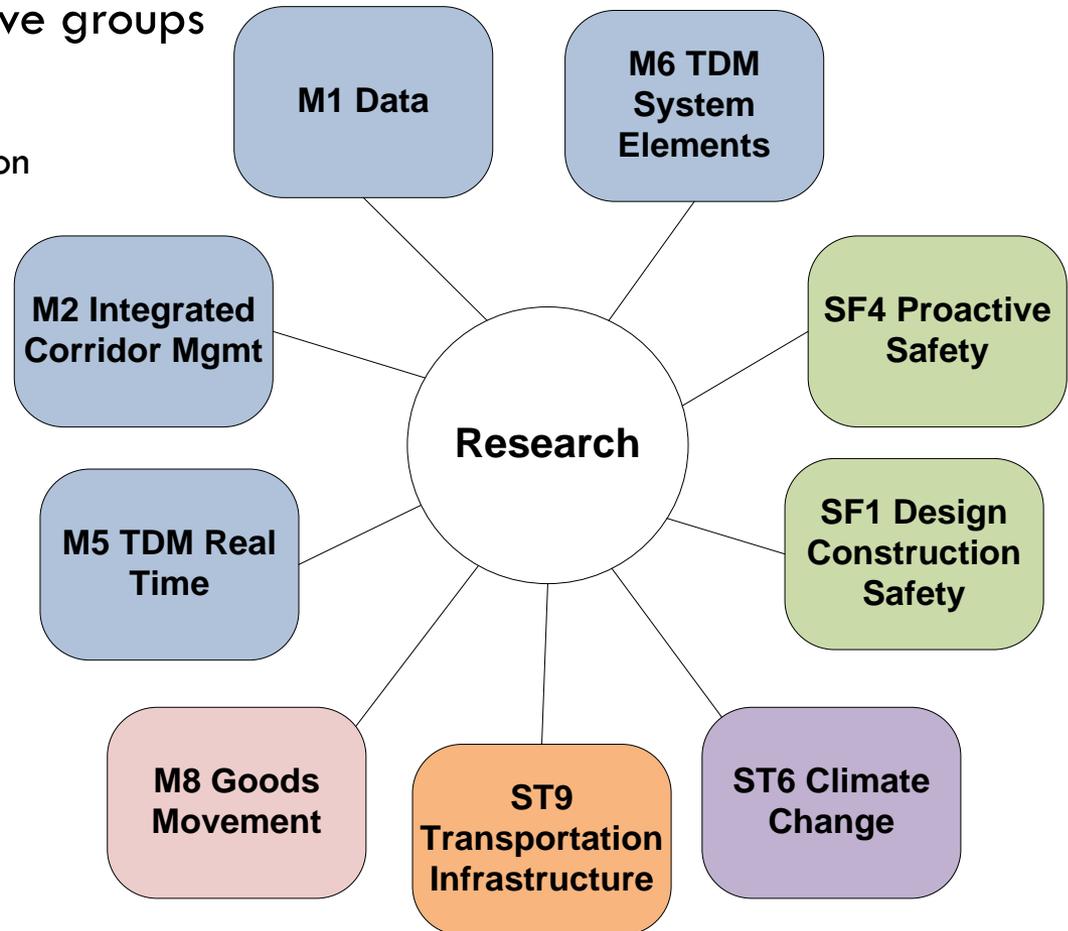
- M8 Goods Movement

- Climate Change

- ST6 Climate Change

- Infrastructure

- ST9 Transportation Infrastructure



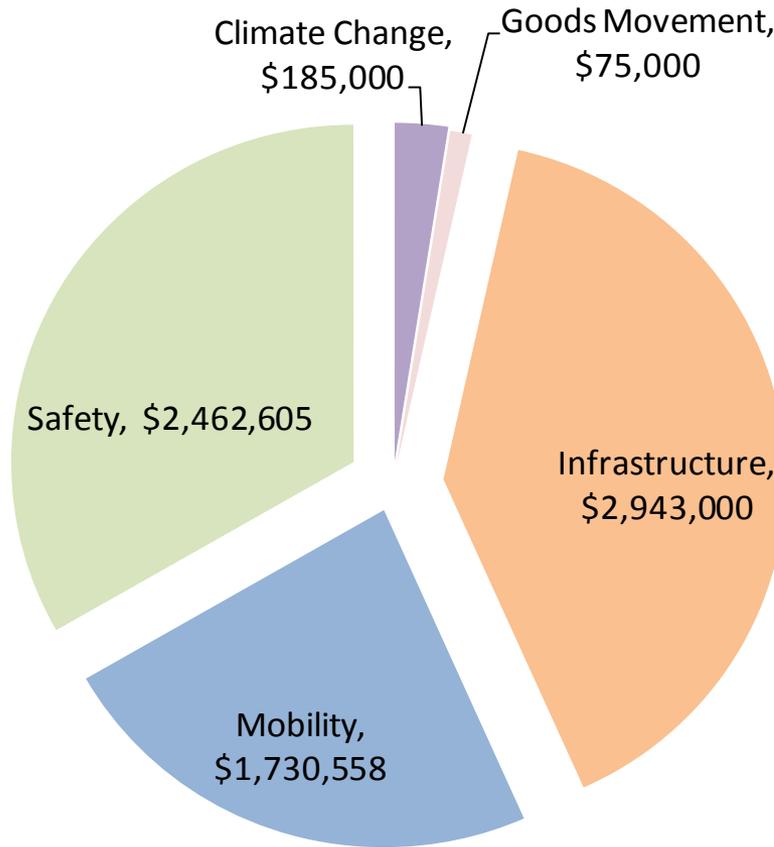
# Priority SRQ Research

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SRQ	# of Projects	10/11 Requested	10/11 Allocated
SF1 Design and Construction	9	\$1,097,324	\$335,000
SF4 Proactive Safety	6	\$426,151	\$604,130
M1 Data	8	\$30,000	\$516,000
M2 Integrated Corridor Mgmt	5	\$189,558	\$450,000
M5 TDM Real Time	1	\$150,000	\$0
M6 TDM System Elements	3	\$200,000	\$195,000
M8 Goods Movement	1	\$75,000	\$0
ST6 Climate Change	2	\$60,000	\$125,000
ST9 Transportation Infrastructure	18	\$2,179,000	\$764,000

# Priority SRC Research Cont.

**Priority SRQ Research - Total 10/11 Requested and Allocated**

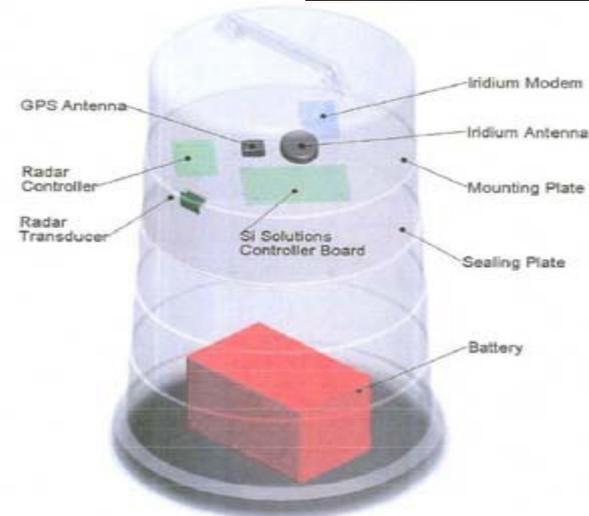


- Well-established research area for Caltrans.
- SRQ's are well-defined, important, high-level questions.
- Current challenges
  - Understand how the pieces of research fit together and support each other across programs
  - Real-time multi-modal system management

# Real-Time Transit and Traffic Info

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- Innovative Deployment Opportunities
- Builds on existing research
- Opportunity to engage Department in active deployment of research findings



- Well-established research area for Caltrans.
- Guidance provided by Strategic Highway Safety Plan (SHSP)
- Linking research to SHSP Challenge Areas
  - Initial preliminary investigations have been completed under Challenge Areas 5 and 8
  - Analysis for Challenge Areas that show promise for additional preliminary investigations
  - More complete analysis this year of existing research in key Challenge Areas

# Challenge Area/SRQ Analysis

SHSP Challenge Area	High Priority SRQ	
	SF1 Design Construction	SF4 Proactive Safety
<b>Challenge 1:</b> Reduce fatalities related to impaired driving.	0	0
<b>Challenge 2:</b> Reduce the occurrence and consequence of leaving the roadway and head-on collisions.	4	4
<b>Challenge 3:</b> Ensure drivers are licensed and competent.	0	0
<b>Challenge 4:</b> Increase use of safety belts and child safety seats.	0	0
<b>Challenge 5:</b> Improve driver decisions about rights-of-way and turning.	3	3
<b>Challenge 6:</b> Reduce young-driver fatalities.	1	1
<b>Challenge 7:</b> Improve intersection and interchange safety for roadway users.	9	9
<b>Challenge 8:</b> Make walking and street crossing safer.	5	5
<b>Challenge 9:</b> Improve safety for older drivers and pedestrians.	1	2
<b>Challenge 10:</b> Reduce speeding and aggressive driving.	2	2
<b>Challenge 11:</b> Improve commercial vehicle safety.	2	2
<b>Challenge 12:</b> Improve motorcycle safety.	2	2
<b>Challenge 13:</b> Improve bicycling safety.	4	4
<b>Challenge 14:</b> Enhance work zone safety.	3	4
<b>Challenge 15:</b> Improve post-crash survivability.	0	0
<b>Challenge 16:</b> Improve safety data collection, access and analysis.	3	3



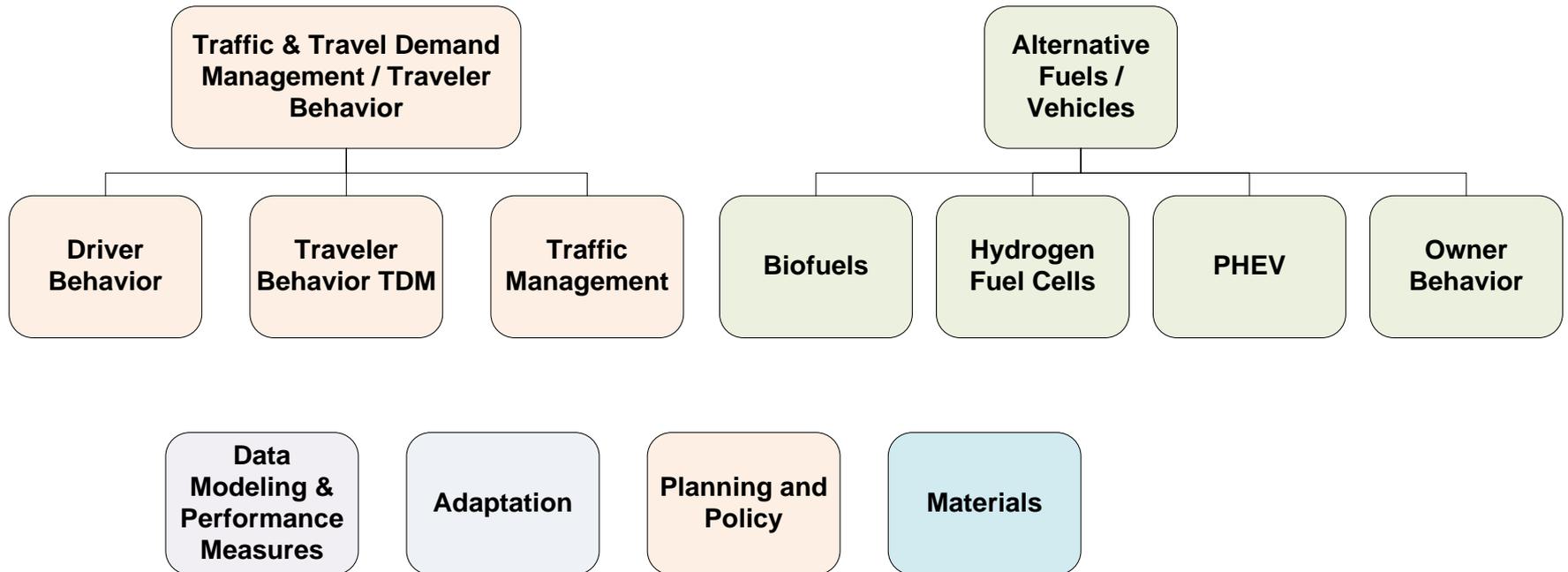
Correlation: The number indicated in each box represents the total SHSP Challenge Strategies (for a given Challenge number) that correlate to a given SRQ

# Climate Change

- Relatively new area for Caltrans research
- “Snapshot” (handout) captures current research funded by DRI, DOTP, DEA and UTCs
- Using to identify clusters of projects for synthesis studies and webinars
- Next steps
  - Identify key research questions for Caltrans
  - Identify highest priority questions for Caltrans
  - Use priority questions to identify new research – also research currently being done by others

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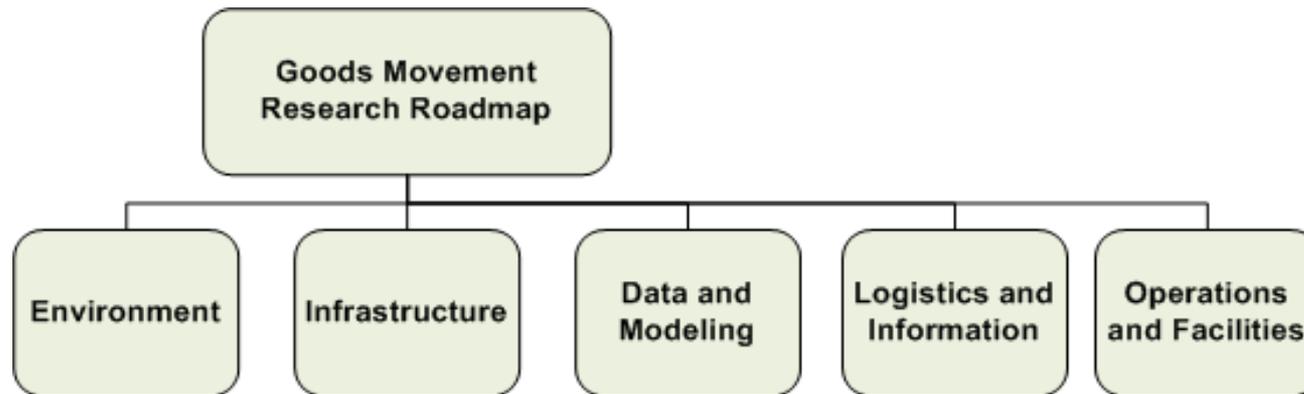
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# Goods Movement

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# Infrastructure Performance

ST9  
Transportation  
Infrastructure

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- Well-established research area for Caltrans.
- Key themes
  - Improve engineering models and codes to more accurately predict infrastructure performance
  - Improve design details to increase infrastructure safety/durability/performance, lower life-cycle cost and speed construction
  - Improve risk management
  - Improve operational efficiency (Design and Maintenance)
- Next steps
  - ???

# In Summary

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- Focus attention on key questions and priorities
- Increase communication and collaboration – across programs and with UTCs
- Classify and understand research being done by Caltrans and others
- Seeing some projects apply to more than one strategic area – e.g., links between mobility, climate and goods movement

# Related Items for Future Discussion?

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- AASHTO - \$5 million (plus) study of Strategic Long-Range Issues
- Strategic Highway Research Program 2 (SHRP 2)
- Texas (TxDOT) – initiating strategic policy research
- Scenario planning - how can Caltrans use?
- Advanced research – current projects, new opportunities