

CONNECTED VEHICLES- INFRASTRUCTURE UTC:

Eighteen
Month
Update
and
Review



RESEARCH FUNDING

- **There was no additional research calls for the Summer of 2013**
- **This is because of major NOVA connected vehicle demonstrations done this summer to show off the whole program**
- **There will be a Fall 2013 research call after the announcement of the FY2013 grant decision**
- **Currently, past funded research projects are underway with two major highlights on the Smart Road with VTTI and UVA**

EQUIPMENT PURCHASED

- **What was purchased?**
 - **No major purchases in equipment at this time**
 - **July 2013 marks the end of the fiscal year for one of our major partners, VDOT**
 - **After the NOVA demonstrations, the majority of the equipment needed has already been supplied, so this expenditure will decrease greatly**

EQUIPMENT INSTALLATION AND TESTING

■ Smart Road:

- 7 RSE units are currently active on the Smart Road.
- 2 have the ability to be mobile units, and are able to be adjusted per research project.
- Current Challenge: Complete research on the Smart Road and collect useful data.
- Estimated Completion: **COMPLETE!**



EQUIPMENT INSTALLATION AND TESTING

■ Northern Virginia:

- **Phase 1:** 8 RSEs will be installed on I-66 (October 2012).
- **Phase 2:** Routes 29 and 50 (est. 18 RSEs; Fall 2012).
- **Phase 3:** Gallows Road and I-495 (est. 18 RSEs).
- **Current Challenges:**
 - Begin research on the I-66 testbed; we've already proven that it works, but we need to get connected vehicle fleet cars up to test in NOVA
 - Maybe work to do more demonstrations on the I-6 testbed, since it appears that there is a lot of interest in this from outside sources
- **Estimated Completion: COMPLETE!**

EDUCATION

- **Morgan State's STI and TTI Programming:**
 - **Teens who are participating in Morgan State's STI program (http://www.morgan.edu/research_centers/national_transportation_center/education_initiatives/summer_transportation_institute.html) visited VTTI, The Smart Road and the VT Campus and department of Mechanical Engineering on July 17 & 18, 2013.**
 - **This is a major collaborative milestone between consortium universities and educational programming, but has been a major challenge in logistics and funding.**
 - **Similar programs, however, will be sought in the future of the grant program, and collaboration with UVA is sought for Fall educational and conference programs in Charlottesville and NOVA.**

EDUCATION

- **CVI-UTC October Educational Event (October 19, 2013)**
 - Major collaboration between VTTI and ICAT (<http://www.icat.vt.edu/>) with participation by VDOT, Carillion Medical Clinics, Roanoke County State Police, and VT SGA.
 - **Features:**
 - **Connected Vehicles (demonstration by CVI-UTC team)**
 - **Automated Vehicles**
 - **Research and Design Elements from ICAT**
 - **Green Highway Initiative**
 - **Teen Safe Driving**
 - **Distracted Driving**
 - **Safe Highway Driving**
 - **Best Practices for driving and vehicle ownership/insurance/etc.**

UPCOMING PLANNED OUTREACH 2013

- **We will send one individual to ITS Tokyo (October 2013) – this individual is still to be determined.**
- **TRB Annual Meeting (January 2014)**
 - **We will be providing a booth, speakers, presenters, and a reception (funded by foundation, not the grant)**
- **We will also again seek to apply for to be the CUTC Summer Meeting host school in 2015.**
- **Those consortium university educational events that have been previously mentioned in this presentation.**

UPCOMING CHALLENGE: RESEARCH

- **Third Research Call (September/October 2013):**
 - **Who to call?**
 - We will do an inner consortium call first; But we will also be doing a concurrent outside consortium research call for relevant research from other universities and institutions
 - **Should we hold another (a 4th) call?**
 - Depending on FY2013 funding, we may also consider a winter research call as well to coincide with TRB Annual Meeting

UPCOMING CHALLENGE: EQUIPMENT

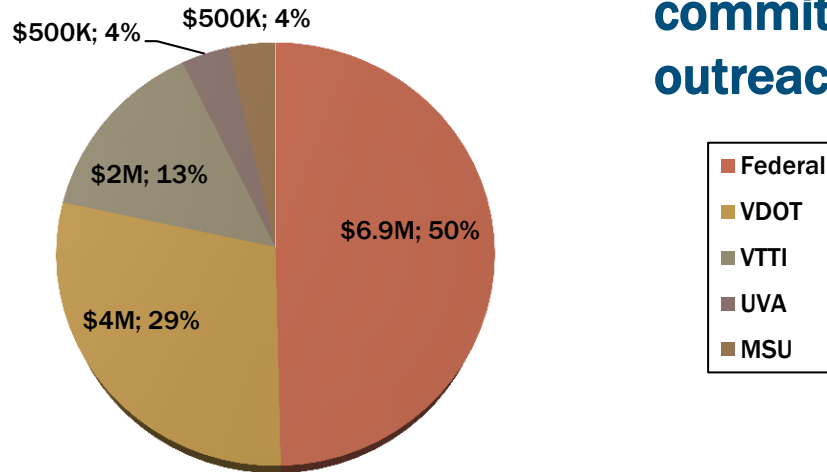
- **Installations for the available vehicles to be highly instrumented for research**
 - 2 motorcycles, 6 light vehicles and the motorcoach and the semi-truck for an initial fleet of 10.
- **Installation and customization of OBEs and DAS**
- **Resource Sharing during research Spring 2013**
 - Using vehicles for research in NOVA
 - Allowing all researchers access to equipment in a timely manner
 - We can work directly with Ray Resendes on this; initial discussion of housing the fleet vehicles at VT Arlington parking garage because of high security levels and close proximity to I-66

UPCOMING CHALLENGE: FUNDING & REPORTS

- **Awaiting decision on FY2013 application:**
- **We have applied for 2014-16 UTC grant.**
 - **Funding will decrease from \$3.5M to 1.5M for two years (with possibility of an additional \$1.5M to be offered if available on the successive year).**
 - **CVI-UTC will remain a Tier 1 UTC.**

OLDER FUNDING GRAPHS & CHARTS

CVI-UTC Funding Sources

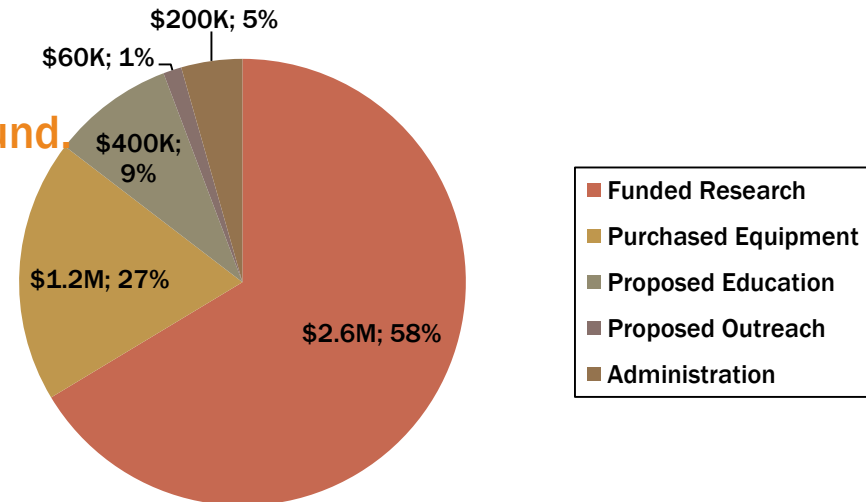


About \$4.46M of funding is currently committed to various UTC projects of research, outreach and education.

This commits about 32% of the initial \$13.9M fund.

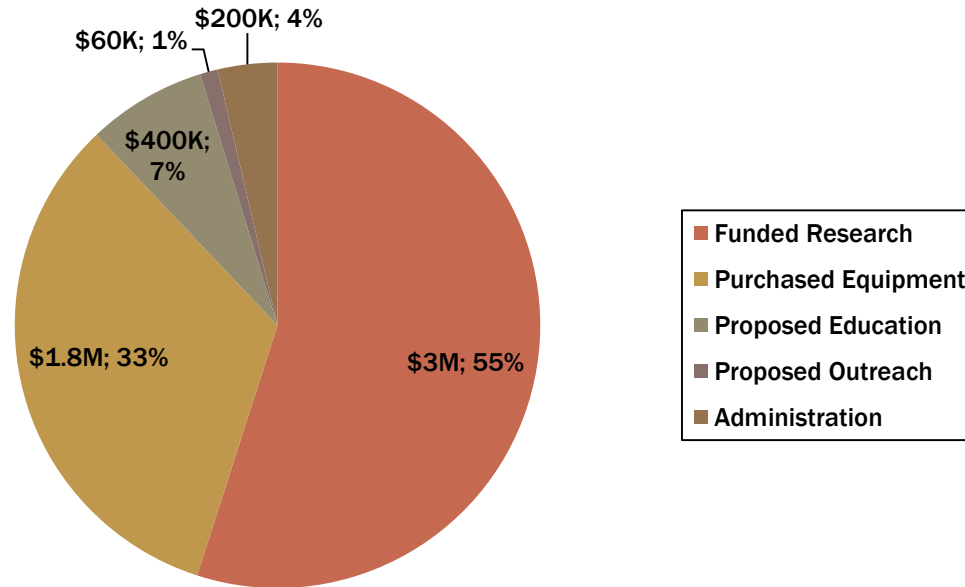
(However, this “spent percent” could be higher, maybe closer to 45% funds committed, since cost-matching funds are not all spendable dollars.)

Used Funds as of Winter 2013



FY2013 PLANNED FUNDING GRAPH

FY2013 Planned Funding

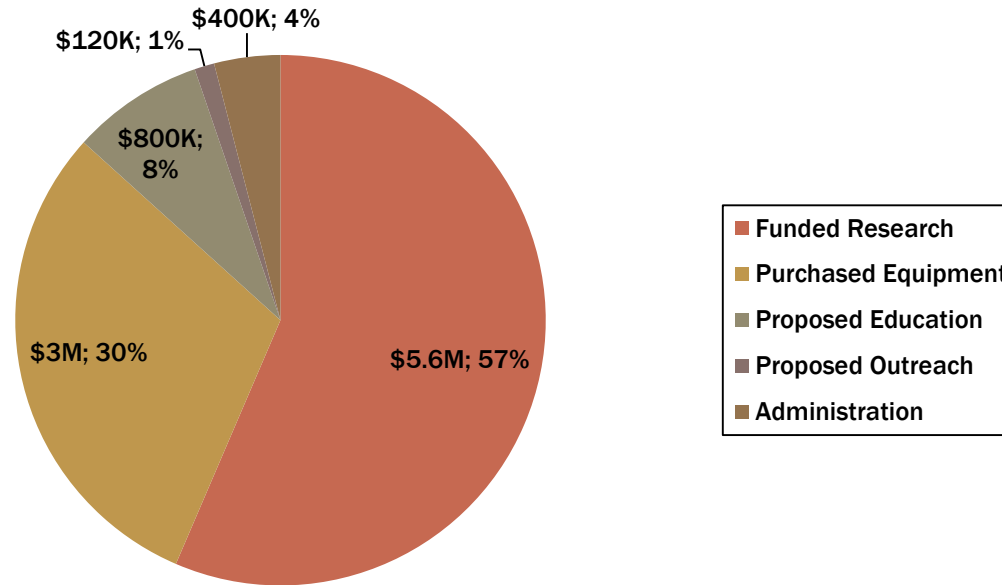


Similar to FY2012 spending, with additional funding going towards testbed expansion (equipment) and to fund research expenditures (\$300K for outside consortium projects).

Outreach stays the same with TRB and ITS America attendance; Education changes tactics from 10-20 short courses, to 1-2, larger, collaborative educational events; but with same funding amount– no increase or decrease.

TOTAL FUNDS SPENT IN FY2012-13

Total Spent by 2014



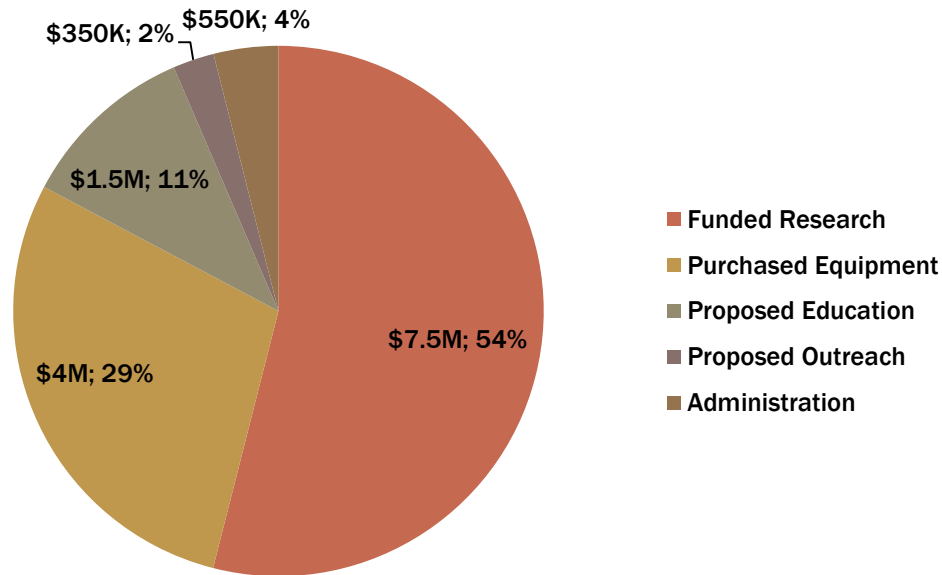
This commits about 72% of the initial \$13.9M fund.

(However, this “spent percent” could be higher, maybe closer to 85% funds committed, since cost-matching funds are not all spendable dollars.)

Remaining grant funds come from university consortium members individual cost-share investments in the CVI-UTC; this funding will be used to manage the center administratively until 2016 without major investments in new research, educational, outreach projects as in FY 2012 & FY2013.

PROJECTED FINAL EXPENDITURES 2014

Final Expenditures (Goal Seek)



Major reasoning for suggested final expenditure outcome:

- \$4M in Equipment matches VDOT's total match contribution (testbed/deployment)
- \$7.5M in Research exceeds initial RITA grant in a significant way; verifying primary commitment to the value of research by UTC consortium
- Both education and outreach increase a bit more from past fiscal years, as completed UTC research would be distributed through those two types of events
- Administration remains constant over 3 years of about \$200K/yr. spent 2012-14

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