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DOT Summary of Prior Year Research and Development Activities

FAST Act Sec. 6502 (c) – Performance Plans and Reports (FY-2015)

Background

This submission has been provided to meet the Fixing America's Surface Transportation (FAST) Act (P.L. 114-94; 129 Stat. 1312) requirement to include a summary of Federal transportation research and development activities for the previous fiscal year in DOT's Performance Plan/Report to Congress (see Section 6019(b)). This report covers Fiscal Year 2015 (FY15), the previous fiscal year at the time of submission, and includes the Department's research, development and technology activities, consistent with the financial information collected and reported by the Department.

(1) Summary of the Federal transportation research and development activities for the previous fiscal year in each topic area

Safety

Improving transportation safety remains DOT's top priority. The focus of this effort is to reduce transportation-related fatalities and injuries. Safety-related Research, Development and Technology (RD&T) activities were conducted by all of DOT's Operating Administrations in FY15, representing the largest single topic area for RD&T investment (48.2%), as shown in Figure 1. DOT's RD&T efforts focused on providing a comprehensive understanding of the risks and mitigation options associated with surface and air transportation; and providing the data, tools, and technologies required to make vehicles, transportation infrastructure, transportation systems, and operators safer.

Economic Competitiveness

DOT aims to support the U.S. economy by fostering strategic investments that serve the traveling public and facilitate efficient freight movement. The performance, connectivity, and effective use of our Nation's highways, ports, waterways, railways, airports, public transportation, and intermodal facilities directly impact the productivity of the U.S. economy and the costs of goods and services. Activities in this area focused on developing the tools and resources required to evaluate modal and multimodal opportunities for cost effectively handling vastly increased movements of cargo and people. Initiatives funded in FY15, such as development of FAA's NextGen and the Intelligent Transportation Systems (ITS) Connected Vehicle Research program, focused on reducing gridlock, both in the sky and on the ground, to ensure internationally competitive transportation networks. Economic competitiveness funding accounted for 19.7% of the Department's total RD&T portfolio in FY15.

Environmental Sustainability

Building, operating and maintaining the U.S. transportation system has a significant impact on the nation's invaluable natural resources. FY15 RD&T activities in this area accounted for 13.8% of DOT's total RD&T portfolio. This funding was used to support the Department's role

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in setting and enforcing fuel economy standards and promoting the sustainable movement of people and goods. For example, DOT employed a range of RD&T programs to facilitate the development of Electric Vehicles and other alternative fuel sources. FY15 funding was also used to provide the necessary data and strategies for setting priorities for adaptation to climate change impacts and for mitigating the large proportion of the nation's greenhouse gas emissions that originate in the transportation sector.

State of Good Repair

Maintaining the condition of our existing transportation infrastructure lies at the foundation of our ability to meet the safety, economic, environmental, and community needs of the U.S. transportation system. This includes preserving existing transportation systems as well as improving infrastructure durability and extending infrastructure life. RD&T efforts in this area accounted for 12.2% of DOT's RD&T investment in FY15, focused on developing analytically sound mechanisms for setting targets and identifying which investments were most useful for maintaining our transportation assets. RD&T activities also focused on improving ways to repair and rehabilitate existing systems and developing modern inspection methods to determine the condition of assets in a cost-effective manner.

Quality of Life in Communities

Recognizing the central role played by transportation in the lives of the U.S. population, DOT implemented this major new policy goal to provide U.S. communities with high quality, affordable access to jobs, housing, education, healthcare, and other mobility needs. RD&T activities in this area accounted for 5.7% of the Department's RD&T investment in FY15. These activities focused on increasing access to convenient and affordable transportation choices, improving public transit and the rail transportation experience, increasing networks that accommodate pedestrians and bicycles, and increasing access to transportation for people with disabilities and for older adults.

Organizational Excellence

DOT seeks to develop an innovative, world-class organization capable of advancing the U.S. transportation system and serving the nation's long term transportation needs. RD&T activities in this area support workforce development and human capital building. RD&T is also essential to the advancement of secure information systems and technology platforms, protecting the Department against cyber threats and supporting accurate financial management. DOT's Office of the Secretary is responsible for coordinating the RD&T activities within the Department's Operating Administrations, and ensuring that the Administration's overarching RD&T priorities are executed. RD&T activities in this area accounted for 0.5% of the Department's total RD&T investment in FY15.

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(2) Amount spent in each topic area

Figure 1 presents the amount spent in FY15 (Enacted) on DOT's Research, Development, and Technology activities, by DOT Strategic Goal.

Figure 1 – Amount Spent in Each Strategic Area (FY15)

DOT Strategic Goal*	Research, Development & Technology (FY15) Enacted	
	Funding (\$M)	% of Total
Safety	\$478.57	48.2%
Economic Competiveness	\$195.45	19.7%
Environmental Sustainability	\$136.68	13.8%
State of Good Repair	\$121.14	12.2%
Quality of Life In Communities	\$56.62	5.7%
Organizational Excellence	\$4.47	0.5%
TOTAL	\$992.93	100.0%

* As defined in "Transportation for a New Generation – DOT Strategic Plan FY14-18"

(3) Description of extent to which the research and development is meeting the expectations described in 49 USC 6503 (c)(1)

The Transportation Research and Development 5-Year Strategic Plan required in 49 USC 6503 is currently under development.

(4) Any amendments to the strategic plan developed under section 6503

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