

Rebuild PA

PROJECT MANAGEMENT PEER REVIEW

**October 5, 2009
DOT Panel Presentation**

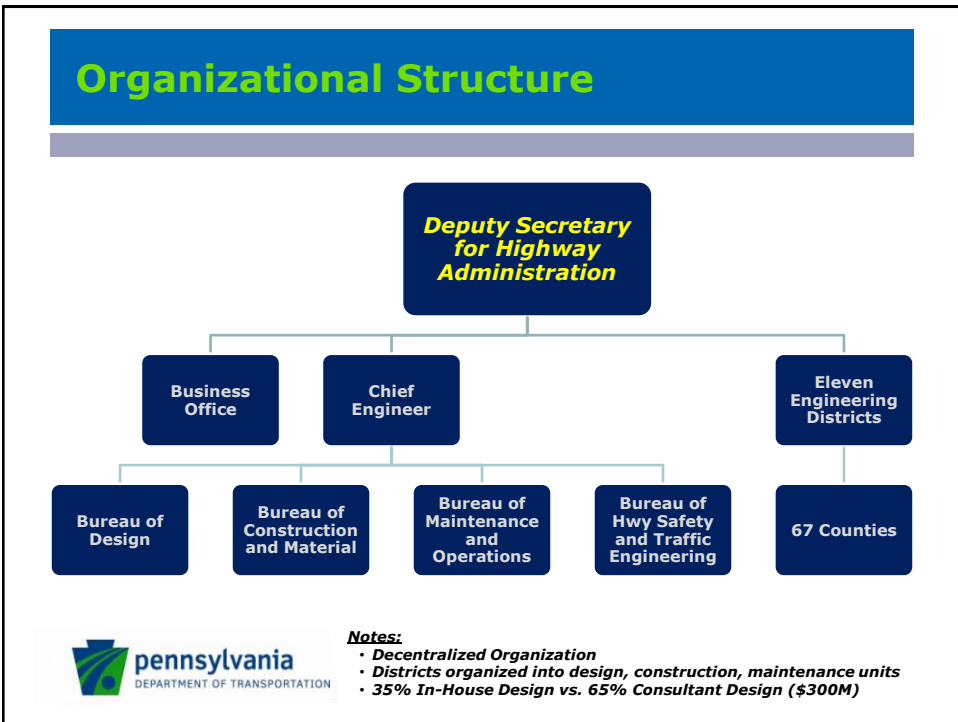
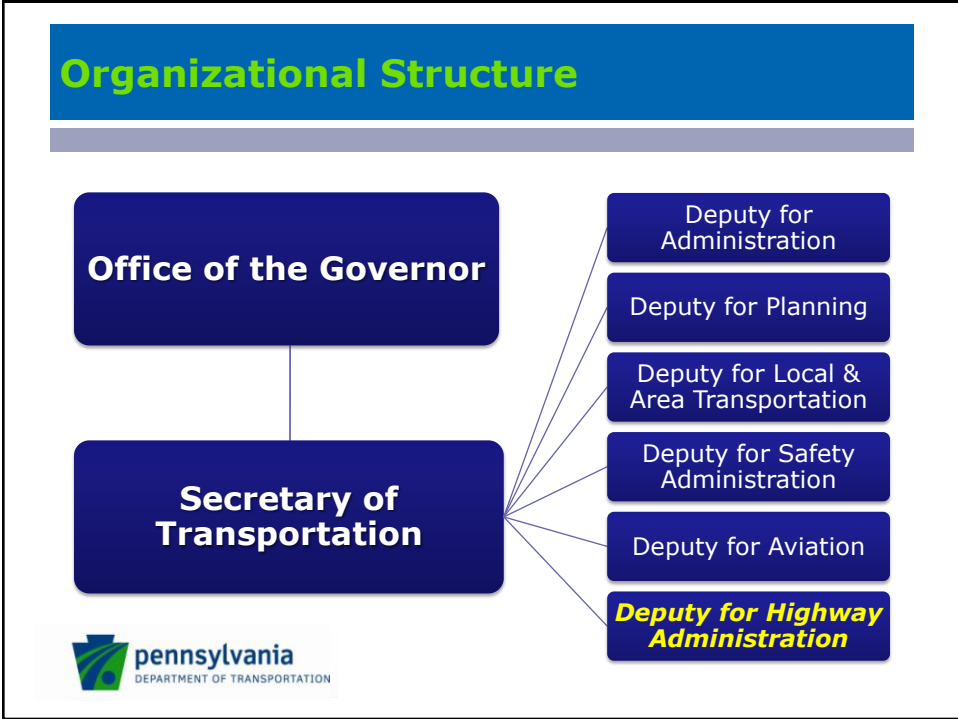
**Tucker Ferguson, P.E., Director
Bureau of Construction and Materials**



Agenda

- Organizational Structure
- Project Management Assignments
- PM Roles and Responsibilities
- Project Manager Selection
- Performance Measures
- Defined Project
- Project Tracking
- Training
- Incentive, Awards, Recognition





Program

- 40,000 miles of state-owned highway
- 25,000 bridges
- Program
 - Base = 800 projects/year at \$1.8 billion
 - Includes Accelerated Bridge Program (ABP)
 - 411 FY 08/09 (completed)
 - 1145 CY 08, 09, 10 (ongoing)
 - 403 FY 09/10 (ongoing)
 - ARRA = 300 projects at \$1 billion
 - Design-Build - Increased Use
 - 25% of ABP bridges
 - 50% of ARRA bridges



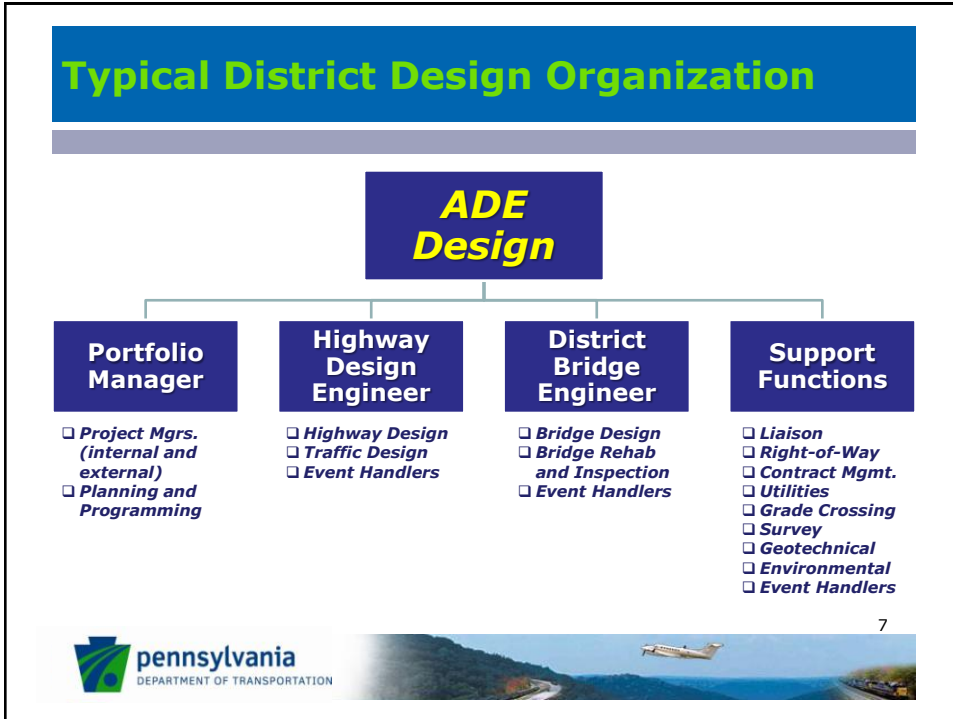
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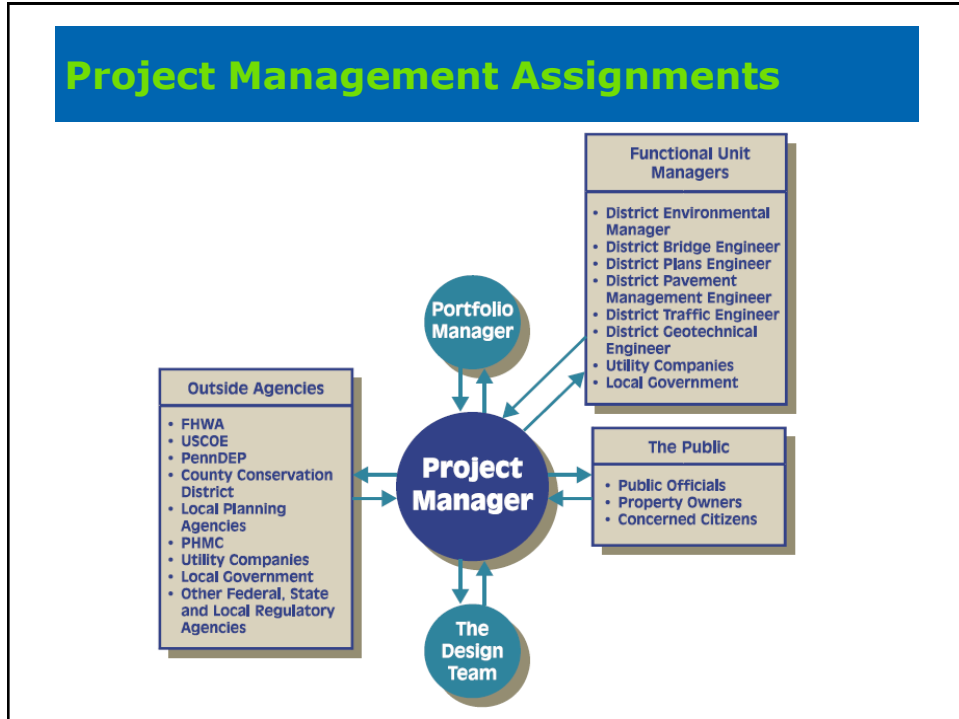
Project Management Assignments

- Portfolio Manager(s)
- Project Managers (PMs)
 - Hand-off
 - Planning
 - Design
 - Construction
 - Maintenance
- PRO Teams Support
 - Central Office Experts (i.e., Bridge, Design-Build)



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PM Roles and Responsibilities

- **Roles**
 - Assemble and Direct Design Team
 - Serve as Single Point of Contact
 - Represent PennDOT at Public Meetings
 - Coordinate Project Issues with Outside Agencies
 - Monitor Design Team Performance (man-hours per task) and Project Development
 - Control Project Costs
 - Coordinate Flow of Project Information



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PM Roles and Responsibilities

- Responsibilities
 - Scope
 - Communications
 - Schedule/Time Constraints
 - Performance/Quality
 - Budget/Costs Constraints
 - Functional Units
 - Design Team Utilization

Project Manager Selection

- Project Managers, Three Levels
 - Level 1 Project Manager
 - Projects require relatively narrow range of technical expertise
 - Requires limited coordination with other functional units
 - Directs executing series of standard, well-defined tasks
 - Requires minimal, detailed planning with resource commitment primarily by skill, rather than person
 - Has limited, cross functional authority
 - Spends <50% of time on project management

Project Manager Selection

- Level 2 Project Manager
 - Manages more complicated projects
 - Requires moderate coordination with other functional units
 - Requires moderate range of technical expertise
 - Directs execution of combination of standard and non-standard design tasks
 - Requires higher level of planning with resource commitment by person or skill
 - Has moderate, cross functional authority
 - Spends >75% of time on project management



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Project Manager Selection

- Level 3 Project Manager
 - Projects require widest range of technical expertise
 - Extensive coordination with other functional units
 - Major projects involve execution of large number of interrelated activities, including both standard and non-standard design tasks
 - Requires very high level of planning with resource commitment primarily by person
 - Has very high functional authority
 - Spends most of time on project management



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Performance Measures

- District Executive (DE) Level
 - Monthly
 - Quarterly
 - Annual

- Deputate Level
 - Monthly
 - Quarterly
 - Annual



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DE Performance Measures – Monthly

- | | | |
|---|---|--|
| <ul style="list-style-type: none"> ▪ Admin (vacancies, sick leave, OT, etc.) ▪ Accrued unbilled costs ▪ \$ spent on roads/bridges ▪ ASHMA bridge \$ ▪ Winter cash status ▪ Bridge maintenance (0's and 1's) ▪ County budget ▪ Open Plan portfolio on schedule | <ul style="list-style-type: none"> ▪ Committed letting goals (dollars) ▪ Committed letting goals (projects) ▪ Committed bridge projects let ▪ Bridge analysis backlog ▪ Asphalt test TAT ▪ DBE participation (design) ▪ DBE participation (construction) | <ul style="list-style-type: none"> ▪ Final project \$ vs. original bid ▪ Construction oversight \$ ▪ Surface improvement miles ▪ Crack sealing cycles ▪ Days to repair pothole and drainage complaints ▪ CE experience ▪ Engineer's est. vs. low bid |
|---|---|--|



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DE Performance Measures – Quarterly

- Percent of SD bridges (deck area)
- Percent \$ spent on SD bridges
- Bridge letting \$ for preservation
- ACMM field time
- **\$120 million in statewide savings**
- Construction oversight \$
- Final project \$ vs. bid
- **Annual letting goal progress**
- **TE, HTS, and SRS lettings**
- **Engineer's estimate vs. low bid**
- **DBE participation (design)**
- DBE participation (construction)
- Bridge inspection timeliness



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DE Performance Measures – Annual

- Pavement smoothness (IRI) by network
- Non-NHS miles with inadequate pavement width
- Annual surface improvement miles
- Improvement of CMMT scores
- Fatality rate



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Deputate Performance Measures

- Awards and NTP
- Project finalization
- Designer and contractor performance
- Project performance–time/budget
- Claims
- Material quality
- Testing laboratory performance
- Safety fund expenditures
- Mobility/congestion/511
- Highway occupancy permits
- Bridge priorities (0's and 1's)
- Bridge inspection – zero tolerance
- Winter expenditures
- Salt usage

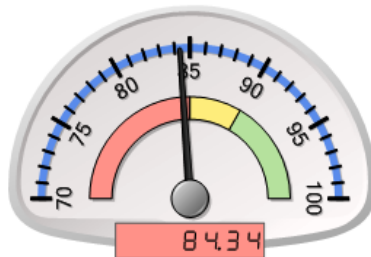


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Performance Measures

Committed Letting Goals (Dollars) [®]

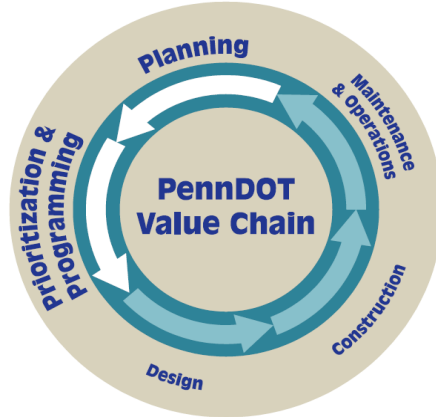
Statewide letting goals are committed by dollar amount for each calendar year. This metric evaluates the attainment of that goal by each District. This is a key metric for project delivery. It ensures that use of available funds is maximized. POSSIBLE = Actual committed let amount (if opened) and estimate (if not opened) Goal. ACTUAL = Sum of actual letting committed amounts. TARGET = be at or over 100%.



Actual: 129,407,267.00 | Possible: 153,436,025.00

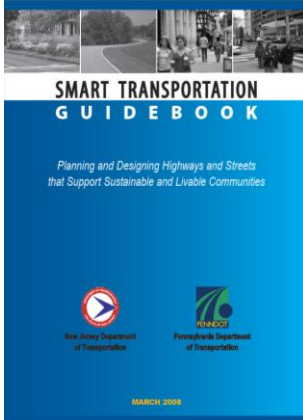
[History](#) [Details](#) [Breakdown](#) [Trend](#)

Defined Project



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Smart Transportation Themes



1. Money counts
2. Leverage and preserve existing investments
3. Choose projects with high value/price ratio
4. Safety always and maybe safety only
5. Look beyond level-of-service
6. Accommodate all modes of travel
7. Enhance local network
8. Build towns not sprawl
9. Understand the context; plan and design within the context
10. Develop local governments as strong land use partners



Smart Transportation

Fundamentally,
Smart Transportation is about
linking land use and transportation
decisions/investments.

For more information visit:
www.smart-transportation.com



Defined Project

- All Projects Classified by One of Five Transportation Modes:
 - **Highways and Bridges**
 - Aviation
 - Intermodal
 - Transit
 - Rail



Highway and Bridge – 6 Categories

- Interstate, Expressway, and Highway Restoration Programs
 - For all classes of highways, including Interstates and limited access expressway
- Bridge Program
 - Rehabilitation or replacement of bridges on state and local network
 - Bridge Management System (BMS) and other criteria



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Highway and Bridge – 6 Categories

- Safety and Mobility Program
 - High crash locations
 - Rail-highway crossing improvements
 - Congestion reduction (bottlenecks)
 - Air quality initiatives
- Transportation Service and Support Projects
 - Welcome centers, rest areas
 - Weigh stations
 - Transportation enhancements
 - Other miscellaneous



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Highway and Bridge – 6 Categories

- Major Projects
 - Major widening and reconstruction
 - New construction on new alignment
- Intermodal Projects
 - Park and ride lots
 - Transit improvements



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Project Tracking

- Multi-modal Project Management System (MPMS)
 - Planning
 - TIP Approval
- Open Plan (Scheduling Tool – All Projects)
 - NEPA Clearance
 - Thru Project Completion



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Project Tracking

- Engineering and Construction Management System (ECMS)
 - Bid Proposal
 - Thru Construction Completion
- Construction Documentation System (CDS)
 - Field Reporting
- Construction & Materials Management System (CAMMS)



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Training

- AASHTO
- NHI
- In-house Training Section
- Research
 - TRB
 - NCHRP
- Certifications
 - NICET
 - NECEPT
 - PennDOT Aggregate
 - PennDOT Concrete



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Incentives, Awards, Recognition

- Professionals
 - Engineers (E.I.T., P.E.)
 - Land Surveyors (P.L.S.)
 - Geologists (P.G.)
- Secretary Award for Excellence
- Quarterly Awards
- Longevity
- Sick Leave



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Rebuild PA

QUESTIONS



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