

# **Connecticut Department of Transportation**

## **Bureau of Engineering and Highway Operations**

**Chief Engineer/Bureau Chief (Acting)  
Michael Lonergan P.E.**



# Bureau of Engineering and Highway Operations

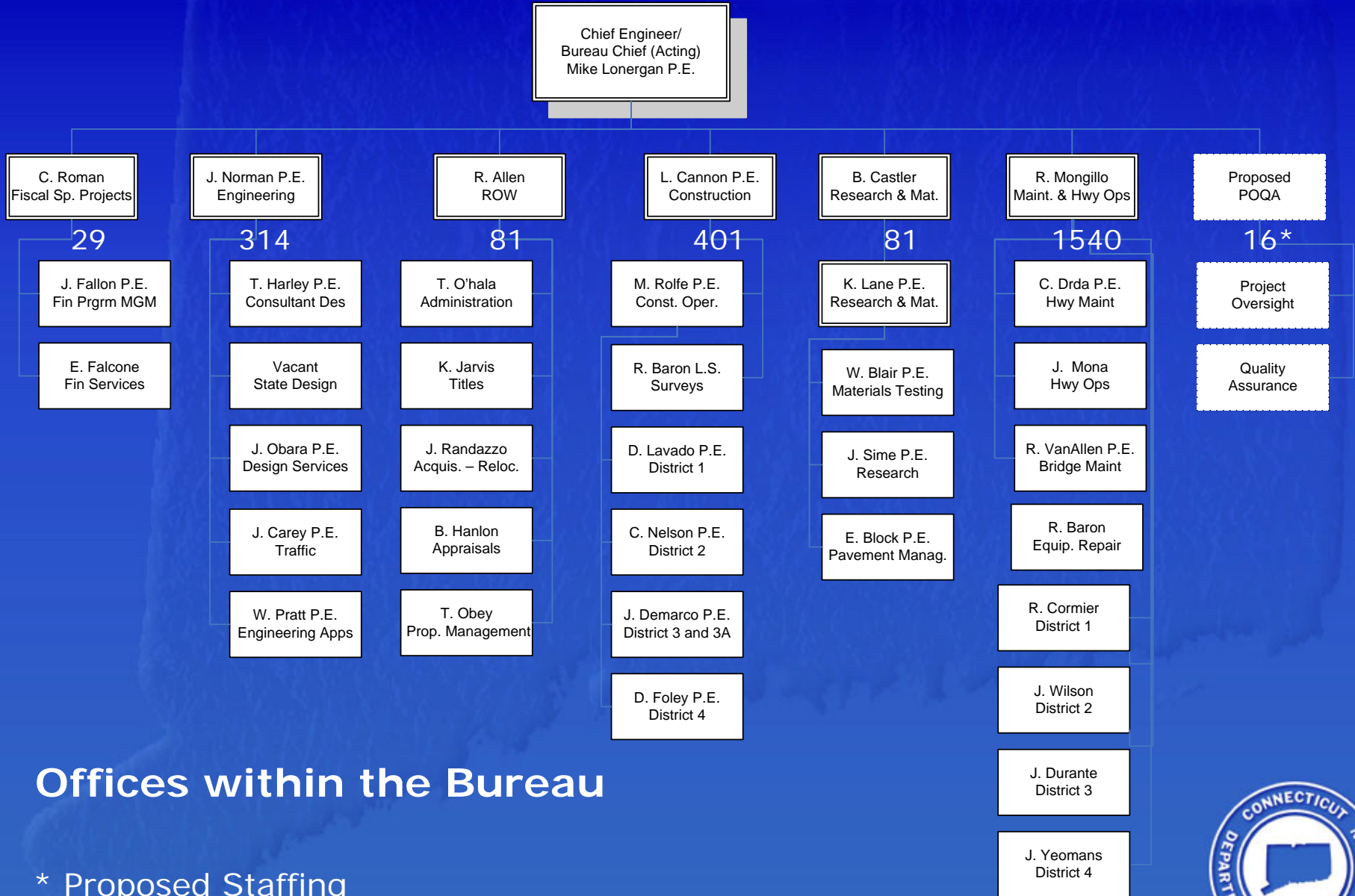
## Mission Statement

The Bureau of Engineering and Highway Operations is responsible for the engineering, design, construction and inspection of transportation improvement projects for all modes.

The Bureau also operates and maintains the State Highway and Bridge system including snow and ice control, equipment repair and maintenance; traffic engineering; land acquisition and management; research and materials testing, pavement management and the project oversight & quality assurance.



# Bureau of Engineering and Highway Operations

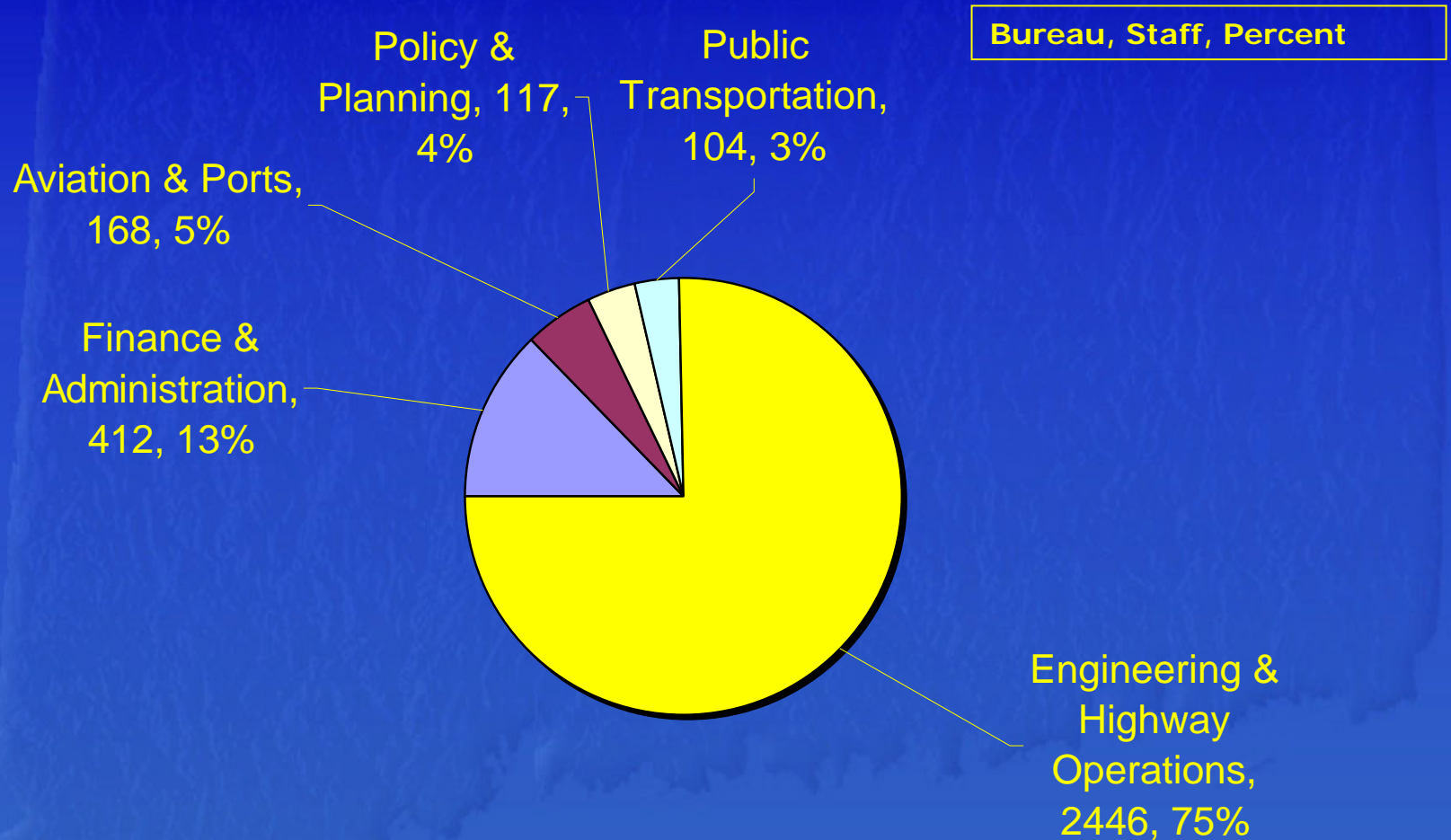


## Offices within the Bureau

\* Proposed Staffing



# Bureau of Engineering and Highway Operations



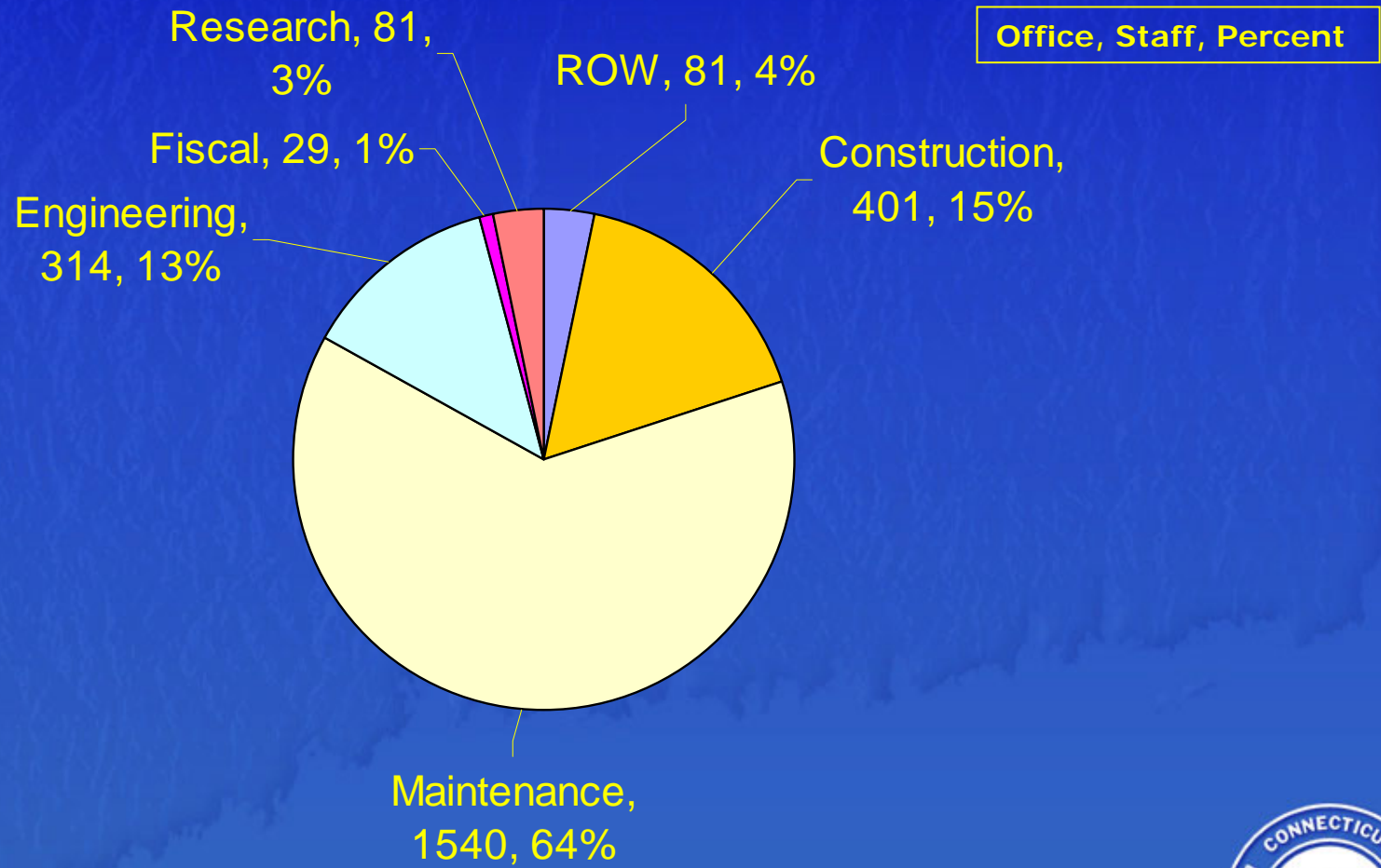
Bureau of Eng. &  
Hwy Ops. Offices





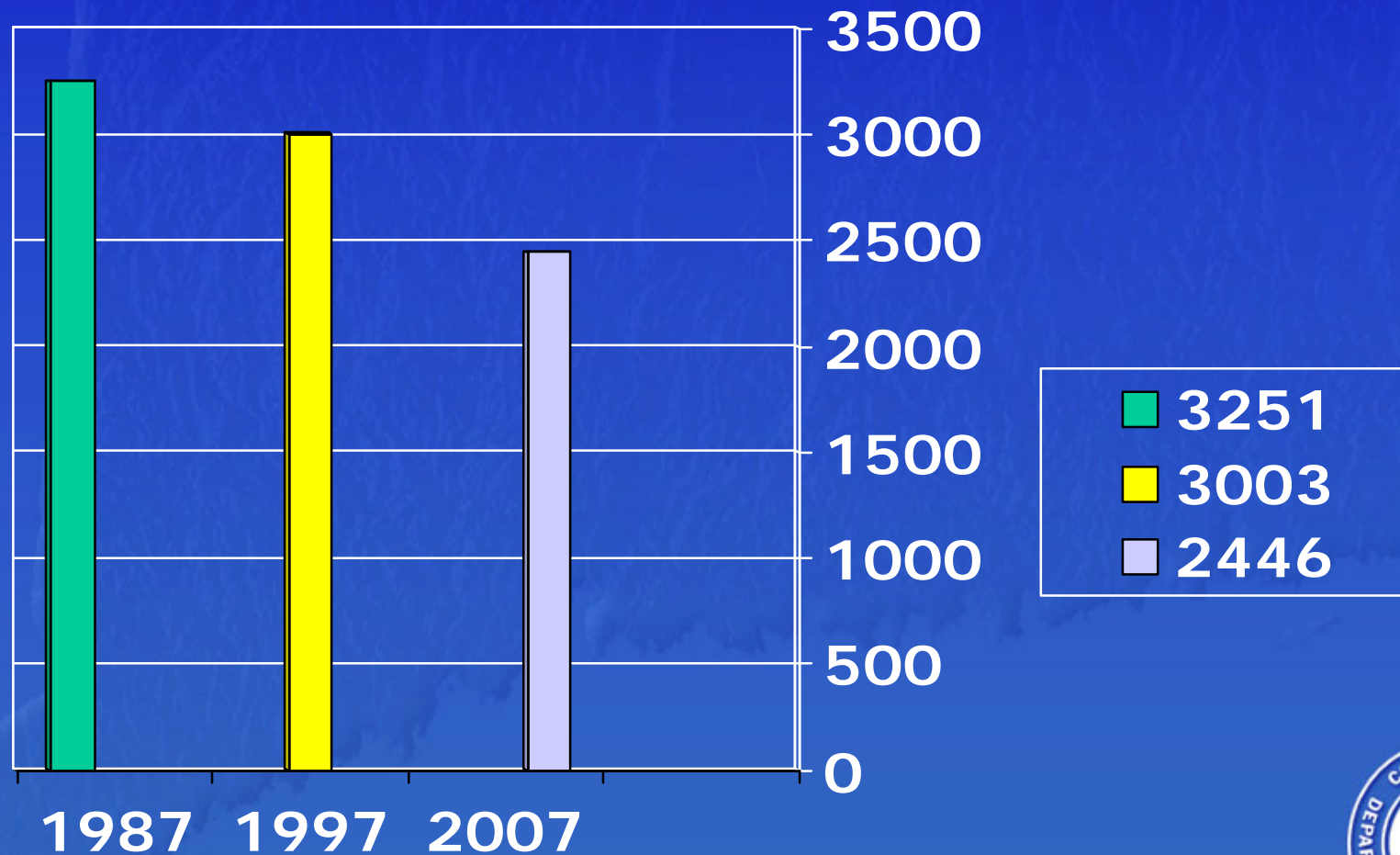
# Bureau of Engineering and Highway Operations

## Office Breakdown of Bureau



# Bureau of Engineering and Highway Operations

## Bureau 20 Year Staffing Levels



# Bureau of Engineering and Highway Operations

## Office of Fiscal/Special Projects

Director  
Charles Roman



# Bureau of Engineering and Highway Operations

## Office of Fiscal/Special Projects

**Director  
Charles Roman**

### Duties:

- Provides the Bureau Chief/Chief Engineer and Bureau Administrators with budgetary preparation, strategic financial analysis, and financial management for appropriated, bonded, and federal-aid highway programs.
- Plan, administer, and support the Bureau's annual capital program which provides a wide range of administrative, fiscal and operational support to the Bureau. This Office acts as the CORE liaison for the Bureau.

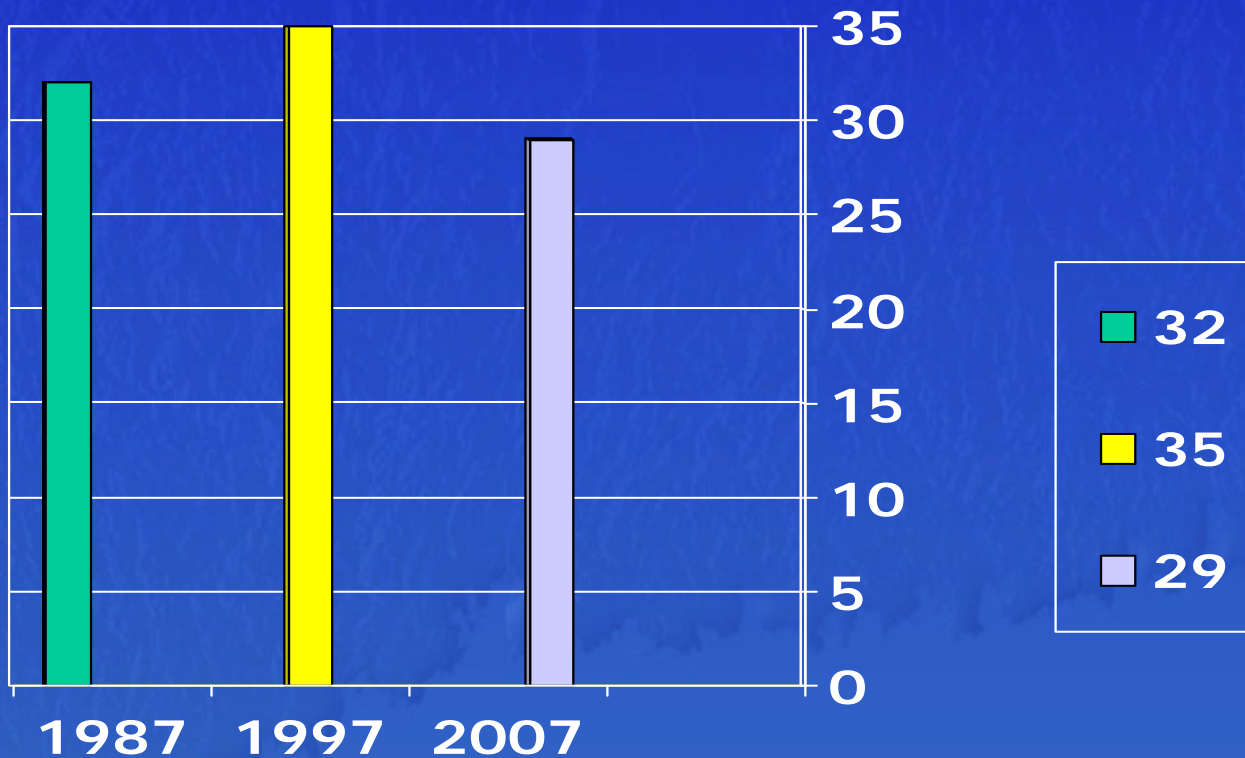




# Bureau of Engineering and Highway Operations

## Office of Fiscal/Special Projects

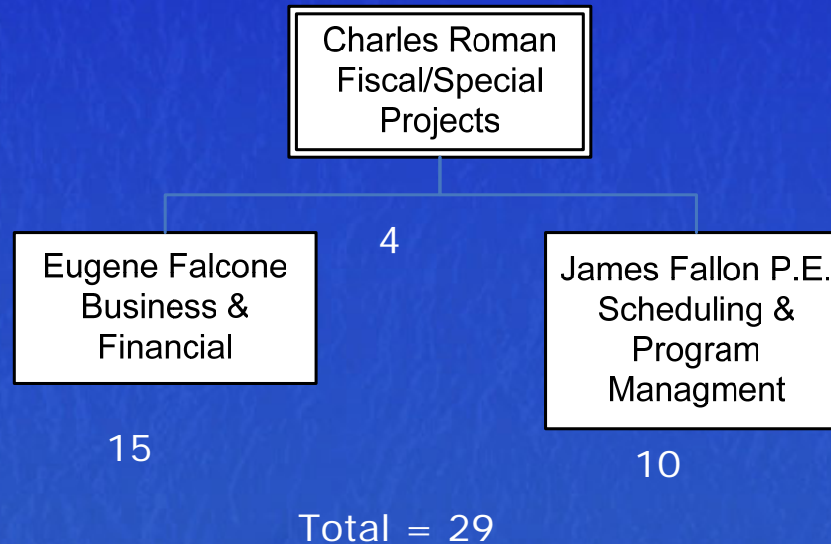
### Staffing Levels



# Bureau of Engineering and Highway Operations

## Office of Fiscal/Special Projects

### Divisions



# **Bureau of Engineering and Highway Operations**

## **Office of Fiscal/Special Projects**

### **Manager of Business & Financial Services**

#### **Eugene Falcone**

Division has 3 Sections:

- Budget Services Section:
  - Oversees Financial Elements of:
    - Environmental compliance
    - Bridge and highway construction projects
- Consultant Agreement Section:
  - Provides accounting services for the engineering phase of bridge and highway projects.
- Utility Agreement Section:
  - Provides accounting services for utility and railroad relocation.



# **Bureau of Engineering and Highway Operations**

## **Office of Fiscal/Special Projects**

### **Manager of Scheduling & Financial Program Management**

#### **James Fallon P.E.**

#### Division Duties:

- Manages the development and implementation of the Capital Highway, Revenue and Federal-Aid Financial Programs (\$700 Million Annually).
- Monitors and prepares the following:
  - Master Transportation Plan
  - Bureau's Capital and Appropriated Project Budget
- Bureau's liaison with fifteen CT regional planning agencies
- Lead in implementing Statewide Transportation Improvement Program (STIP)





# Bureau of Engineering and Highway Operations

## Office of Fiscal/Special Projects

### Accomplishments:

- Fully utilized available Federal Fiscal Year 2007 transportation funds.
- Oversaw the Bureau's transition to new Statewide Financial System, CORE-CT.
- Provided continuous strategic analysis in support of the Bureau Capital and Operating Programs.

### Challenges:

- Project delivery rates necessary to fully and efficiently utilize available transportation funding.



# Bureau of Engineering and Highway Operations

## Office of Engineering

Transportation Engineering Administrator  
James Norman P.E. (Acting)



# Bureau of Engineering and Highway Operations

## Office of Engineering

**Transportation Engineering Administrator  
James Norman P.E. (Acting)**

### Duties:

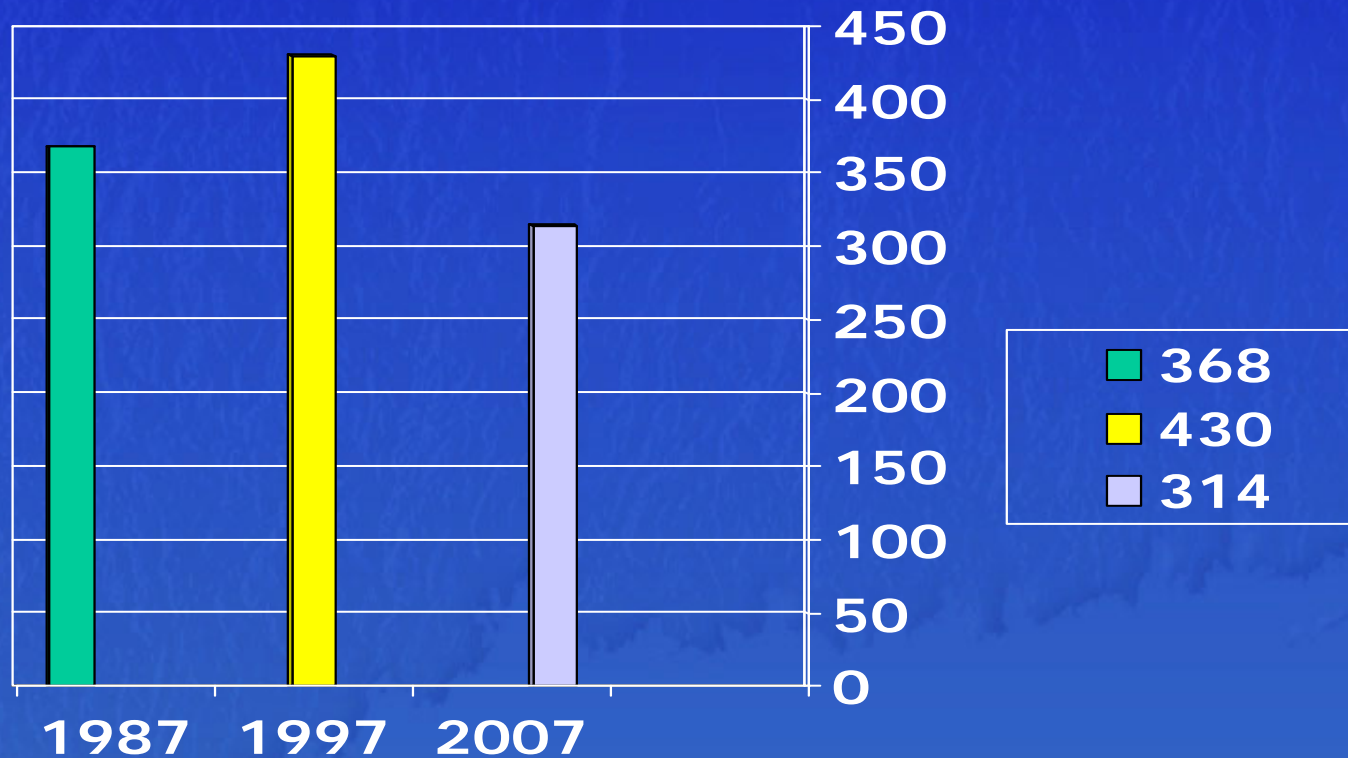
- Manages, directs and coordinates all engineering and support activities.
- Manages staff engineers and consultant engineers in the preparation of design projects.
- Serves as engineering approval level for all design projects throughout the Department.
- Advises the Bureau Chief/Chief Engineer on engineering issues.



# Bureau of Engineering and Highway Operations

## Office of Engineering

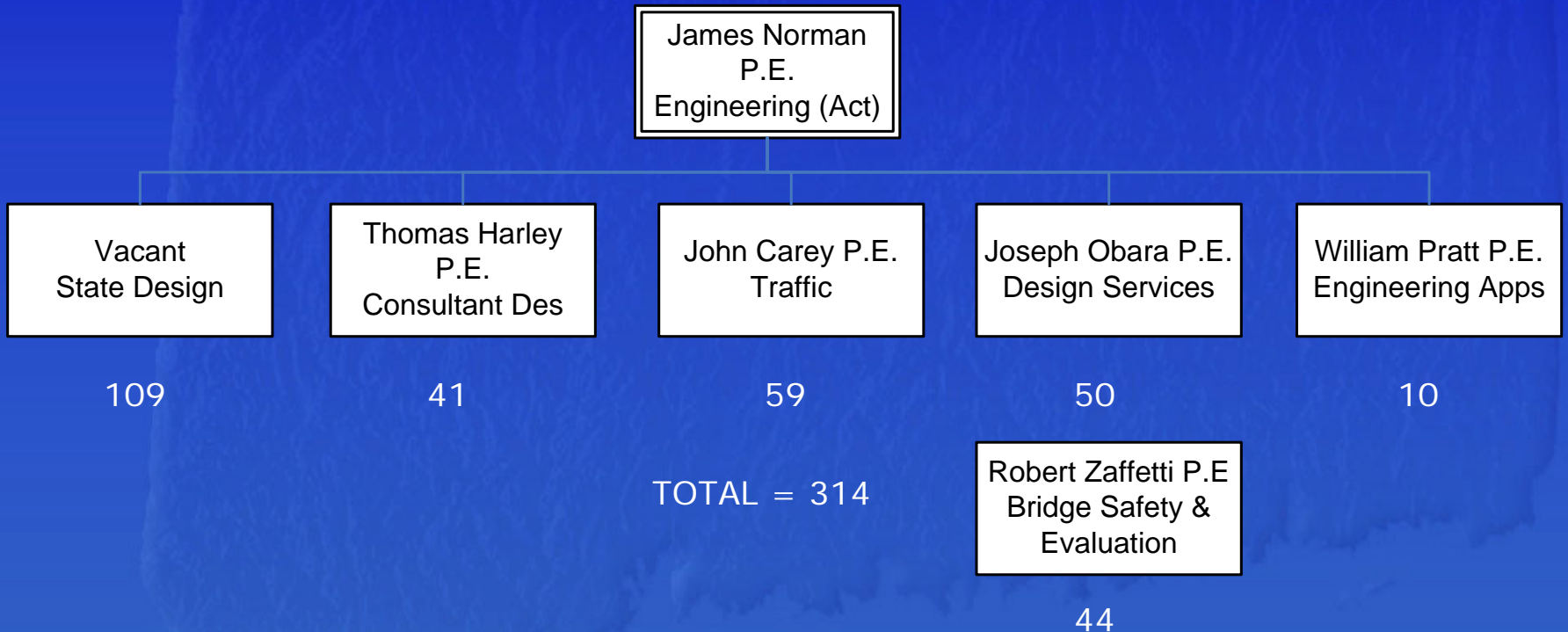
### Staffing Levels





# Bureau of Engineering and Highway Operations

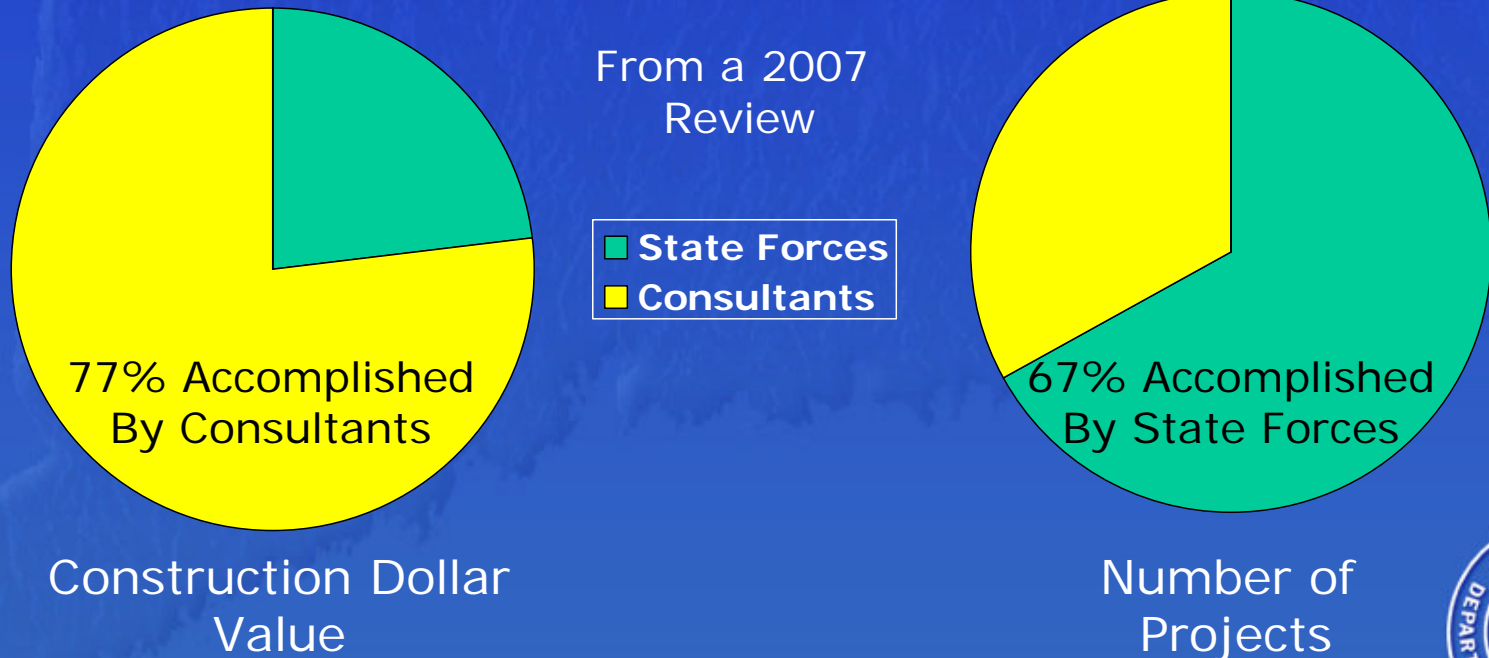
## Office of Engineering



# Bureau of Engineering and Highway Operations

in 1993, the Department initiated an in-house study of the cost of using Consultant Engineers as compared with State forces for designing construction projects. The study concluded that it was more cost effective to use State forces for projects under \$5 million and Consultants for projects over \$5 million. Based on these findings, the Department went to the Legislature and was successful in getting more positions and in converting existing durational positions to permanent positions.

## Using Consultant Engineers as compared with State forces for Designing Construction Projects



# Bureau of Engineering and Highway Operations

## Office of Engineering

### Manager of State Design Position Vacant

#### Division Duties:

- Manages, directs and coordinates designs for:
  - Highways
  - Bridges
  - Transportation Facilities
- Units Within:
  - Highway Design
  - Facilities Design
  - Structures and Bridges
  - Project Development



# Bureau of Engineering and Highway Operations

## Office of Engineering

### Manager of Consultant Design

**Thomas Harley P.E.**

#### Division Duties:

- Manages, directs and coordinates all consultant designs.
- Administration of contracts with consultant engineers and towns for highway and bridge improvements.
- Units within:
  - State Highways
  - Local Roads
  - Structures





# Bureau of Engineering and Highway Operations

## Office of Engineering

### Manager of Traffic Engineering

**John Carey P.E.**

#### Division Duties:

- Manages, directs and coordinates:
  - State Traffic Commission – Investigations and major traffic generator reviews.
  - Traffic designs
  - Traffic studies
  - Traffic investigations
- Units within:
  - Studies
  - Project Traffic Design
  - Electrical Engineering for Traffic Signals



# Bureau of Engineering and Highway Operations

## Office of Engineering

### Manager of Design Services

**Joseph Obara P.E.**

#### Division Duties:

- Manages, directs and coordinates the following units. These units support all DOT projects.
  - Bridge Safety and Evaluation
  - Hydraulics and Drainage
  - Environmental Compliance
  - Soils and Foundations
  - Utilities
  - Contract Development & Estimating



# Bureau of Engineering and Highway Operations

## Office of Engineering

### Manager of Bridge Safety and Evaluation

**Robert Zaffetti P.E.**

- Existing Staff:

Manager	1
Engineers	20
Bridge Inspectors	19
Clerical & Support	4
Total	44

- Proposed additional staff:

Engineers & Inspectors	12
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These 12 positions were recently authorized by the Governor and efforts have commenced to fill them. Therefore, the proposed staffing level for BSE will increase from 44 positions to 56 positions.

- Consultant Services:

Four (4) consultant contracts for bridge, sign support and mast arm inspections

One (1) consultant contract for underwater bridge inspection

Overall, consultants provide about 60% of BSE's needs.

Connecticut Department of Transportation





# Bureau of Engineering and Highway Operations

## Office of Engineering

### Manager of Bridge Safety and Evaluation

**Robert Zaffetti P.E.**

BSE is primarily responsible for ensuring the safety of the traveling public and protecting the State's capital investment in highway bridges, overhead sign supports, and traffic signal mast arm supports. The Section inspects, evaluates, and inventories the structural condition, strength, and functional capacity of over 5,000 bridges, 1,800 sign supports, 900 mast arm supports, and about 40 high mast illumination towers.

All structures are inspected utilizing in-house or consultant services. The primary goal of the inspection program is to identify deficiencies and recommend repairs, rehabilitation, or replacement in a timely manner.

Bridges are inspected every two (2) years. However, structures that are in poor condition are inspected as frequently as every month. BSE recently discontinued the nearly decade long practice of inspecting structures every four (4) years.

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# Bureau of Engineering and Highway Operations

## Office of Engineering

### Supervisor of Engineering Applications William Pratt P.E.

#### Duties:

- Responsible for developing and establishing:
  - Electronic design standards and computer aided engineering applications.
  - ProjectWise – Document/project data management system to improve project data organization/sharing, production, quality and delivery.
  - AASHTO Trns.port - An integrated system which enables the development of project lifecycle cost estimates and streamlines the letting and contract award process (on-line bidding); Also provides bid analysis, contractor payments and construction support.
- Project visualizations for public involvement.



# Bureau of Engineering and Highway Operations

## Office of Engineering

### Accomplishments/Challenges

#### Accomplishments:

- Capital Program
  - Support the highway program currently in excess of \$700 million dollars including the following major projects:
    - Brookfield Route 7 Expressway Bypass
    - Bristol Route 72 Extension
    - Wilton Route 7 Widening
  - Support facilities program currently in excess of \$200 million dollars including the following major projects:
    - New Haven Rail Yard M-8 Car Acceptance Facility
    - Greater New Haven CT Transit Bus Maintenance Facility



# Bureau of Engineering and Highway Operations

## Office of Engineering

### Accomplishments/Challenges

#### Accomplishments (Cont.):

- Safety
  - Administer the Highway Safety Improvement Plan contributing to Connecticut's significantly lower than National Average Fatal Accident Rate (0.97 per 100 million vehicle miles vs 1.42 National Average).
  - Conducted 2600 structural inspections.
- Efficiency
  - Automation and delivery of enterprise-wide Computer Aided Design (CAD) standards.
  - Engineering systems have been developed to allow full compliance with Gov. Rell's Executive Order #3 (Electronic contract advertising/centralization on DAS's Portal).





# Bureau of Engineering and Highway Operations

## Office of Engineering

### Accomplishments/Challenges

#### Accomplishments (Cont.):

- Economic Development
  - Reviewed and made recommendations to the State Traffic Commission on 198 major traffic generator development proposals





# Bureau of Engineering and Highway Operations

## Office of Engineering

### Challenges: **Accomplishments/Challenges**

- Staffing
  - Additional positions needed to support the Capital Program
  - Current demand/shortage of Civil Engineers
  - Work with HR, DAS, and OPM to facilitate HR needs
- Consultant Procurement
  - Selecting, negotiations and contract processing takes 12 months
- Regulatory Permitting
  - Business partnering with DEP
- Application of Technologies
  - Funding needs
  - Information Technology (IT)
  - Agency-wide strategy plan
  - Business partnering with DOIT

Connecticut Department of Transportation



# Bureau of Engineering and Highway Operations

## Office of Engineering

### Accomplishments/Challenges

#### Challenges (Cont):

- Other
  - Department needs additional project delivery methods (such as Design-Build) to get infrastructure projects designed and built faster.



# Bureau of Engineering and Highway Operations

## Office of Rights of Way

Rights of Way Administrator  
Richard C. Allen



# Bureau of Engineering and Highway Operations

## Office of Rights of Way

### Rights of Way Administrator

**Richard C. Allen**

#### Duties:

- Manages, directs, and coordinates the acquisition of real property rights necessary for the Construction and Maintenance of the States Transportation Infrastructure
- Manages, directs, and coordinates the management, sale and lease of the Department's Real Property Assets
- Manages the regulation of outdoor advertising (billboard) permits
- Serves as a resource to other Agencies relative to Real Estate Matters and to Department Offices for various Real Estate issues such as Public Private Partnership (PPP) Agreements and Building Management Tasks

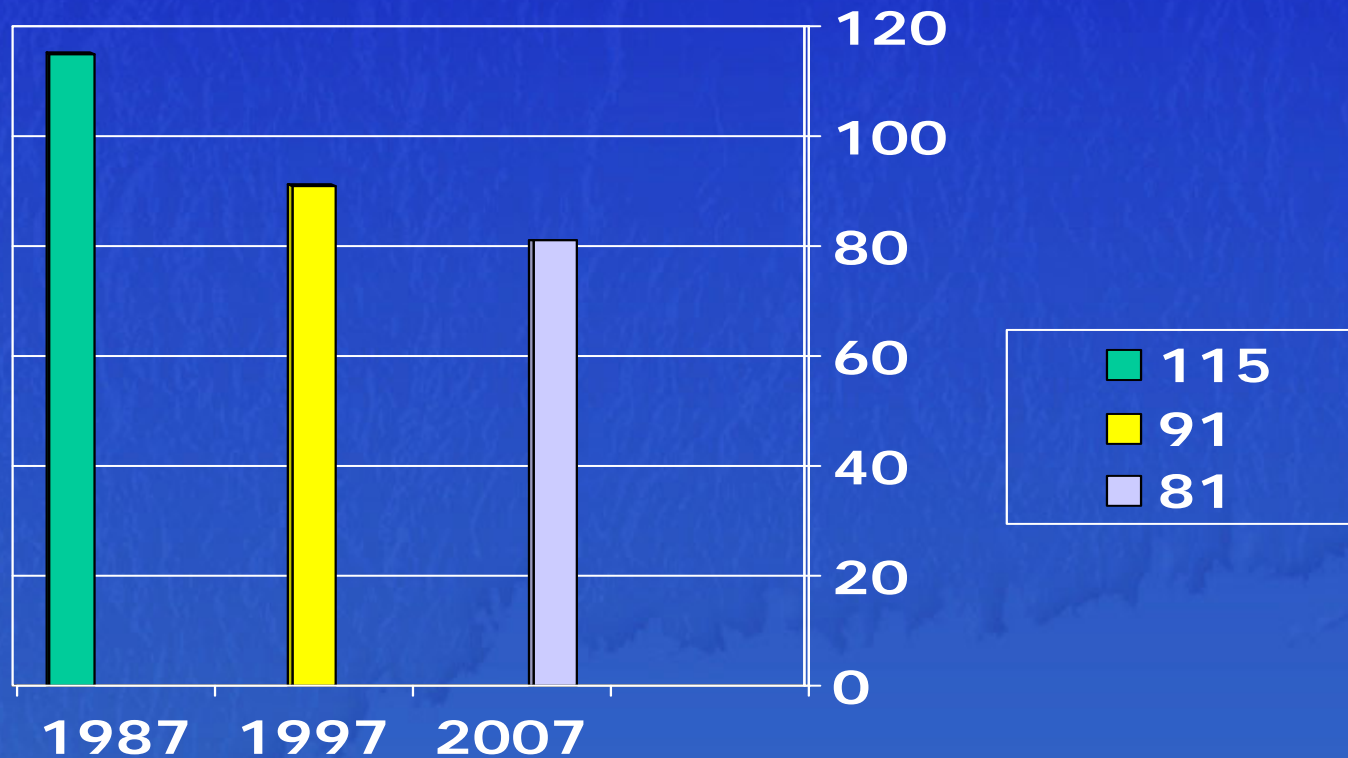




# Bureau of Engineering and Highway Operations

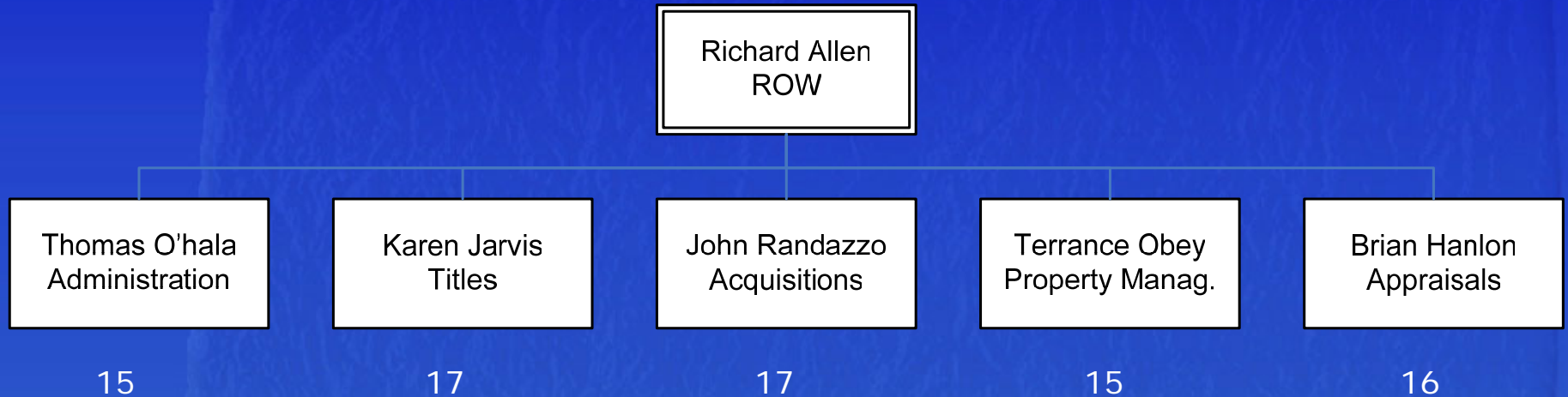
## Office of Rights of Way

Rights of Way Administrator  
Richard C. Allen



# Bureau of Engineering and Highway Operations

## Office of Rights of Way



Total = 81



# Bureau of Engineering and Highway Operations

## Office of Rights of Way

### Duties:

#### **Division Chief of Administration**

- Fiscal Section: **Thomas J. O'Hala**
  - Oversees all financial elements including budgeting, project costing, purchasing, contract agreements, payment and federal vouchering
- Project Coordinator Section:
  - Operational liaison for all transportation related projects
- Excess Property Inventory Unit:
  - Identifies catalogs and creates a comprehensive listing of real property assets, deemed to be in excess of transportation needs for sale or lease
- Bureau Records Center:
  - Initiates and maintains records for approximately 100,000 parcel files through a paper and an electronic Records Management System

Connecticut Department of Transportation



# Bureau of Engineering and Highway Operations

## Office of Rights of Way

**Division Chief of Titles  
Karen L. Jarvis**

### Duties:

- Monitor and facilitate the preparation of title information, condemnation and conveyance documents, and property acquisition closings.
- Conducts property title examination of land records
- Prepares Warrant deeds, Quit Claim deeds, Easements, Subordination Agreements and Releases
- Prepares all documents for Eminent Domain proceedings
- Conducts real estate closings for all land and /or interests in land acquired by the Department.





# Bureau of Engineering and Highway Operations

## Office of Rights of Way

### Division Chief of Acquisitions/Relocations

**John P. Randazzo**

Duties:

- Field Operations Section:
  - Negotiates all rights of way acquisitions, provides relocation and advisory services, develops conceptual relocation plans, and computes relocation eligibility for persons, businesses, non-profit organizations and farms.
- Administrative/Litigation/Outdoor Advertising Section:
  - Secures the statutory approvals for real property acquisitions, processes relocation payments, administers the State of Connecticut's outdoor advertising permit regulations, and liaisons with the Attorney General's Office.



# Bureau of Engineering and Highway Operations

## Office of Rights of Way

### Division Chief of Property Management

**Terrance Obey**

Duties:

- Asset Management Section:
  - Manages Real Property acquired for transportation purposes. Repairs and maintains buildings, performs property inspections and oversees the demolition process.
- Excess Property/Leasing Section:
  - Negotiates the sale or lease of excess State property. Processes for statutory approvals, and oversees real property transfers to State Agencies, municipalities, abutting land owners and sales by public bid.



# Bureau of Engineering and Highway Operations

## Office of Rights of Way

**Division Chief of Appraisals  
Brian J. Hanlon**

### Duties:

- Plans, organizes and directs the real estate valuation function
- Monitors the preparation and review of real estate appraisals for acquisition projects and excess property files
  - Appraisal reports prepared by fee appraisers and/or staff appraisers
  - Conduct real estate cost estimates.





# Bureau of Engineering and Highway Operations

## Office of Rights of Way

### Rights of Way Administrator

**Richard C. Allen**

#### Accomplishments:

- Implemented a transparent contracting process for appraisal services.
- Established an appraisal waiver process in accordance with federal regulations that dramatically reduces processing time for low value acquisitions.
- Developed a relocation incentive payment program for the West Haven railroad station. This is an experimental pilot program to determine the benefits of this incentive.
- Established an excess property inventory program designed to identify and map to a GIS database all excess property owned by the Department.
- Successful implementation of the Core-CT financial system in the daily operations of the ROW financial process.
- Established a “team” approach to the interaction of ROW disciplines with themselves and other Dept. offices to bring all expertise to the table early in the process in an attempt to streamline the process of property acquisition while providing the affected property owners with a professional open and fair experience.

#### Challenges:

Connecticut Department of Transportation





# Bureau of Engineering and Highway Operations

## Office of Rights of Way

**Rights of Way Administrator  
Richard C. Allen**

### Challenges:

- Maintaining staffing of licensed appraisers and access to contract appraisal services.
- Continuing to operate the office of ROW at a high level of professionalism while the aging work force leaves at an accelerated pace and new replacements are trained to perform the duties of the vacated positions.



# Bureau of Engineering and Highway Operations

## Office of Construction

Transportation Construction Administrator  
Lewis S. Cannon P.E.



# Bureau of Engineering and Highway Operations

## Office of Construction

**Transportation Construction Administrator  
Lewis S. Cannon, P.E.**

### Duties:

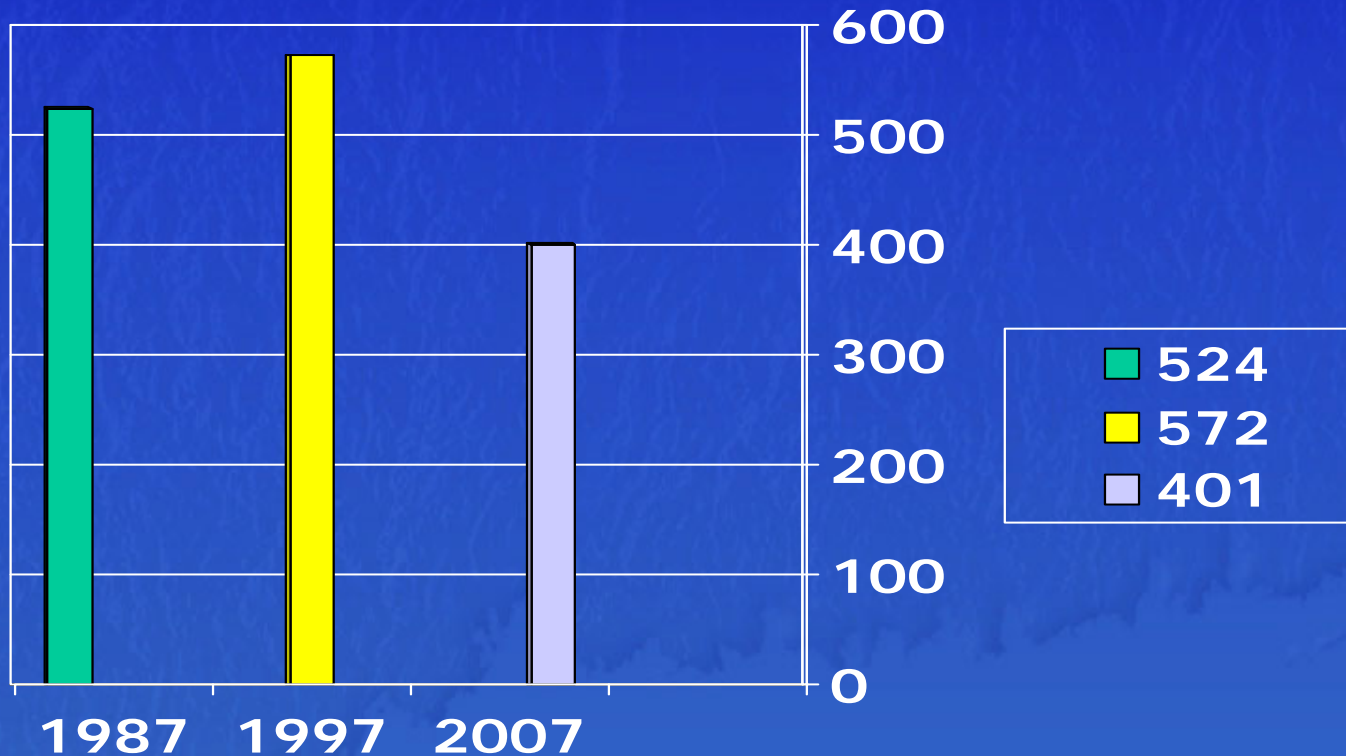
- Plans, organizes and directs all construction contract administration and support activities.
- Directs the staff and operations of the Office of Construction and Surveys.
- Coordinates and administers all district engineering and field operations.
- Advises Bureau Chief / Chief Engineer on delivery of the Construction Program.
- Conducts field reviews of major construction projects, and assures safety for the public within the construction work zones.



# Bureau of Engineering and Highway Operations

## Office of Construction

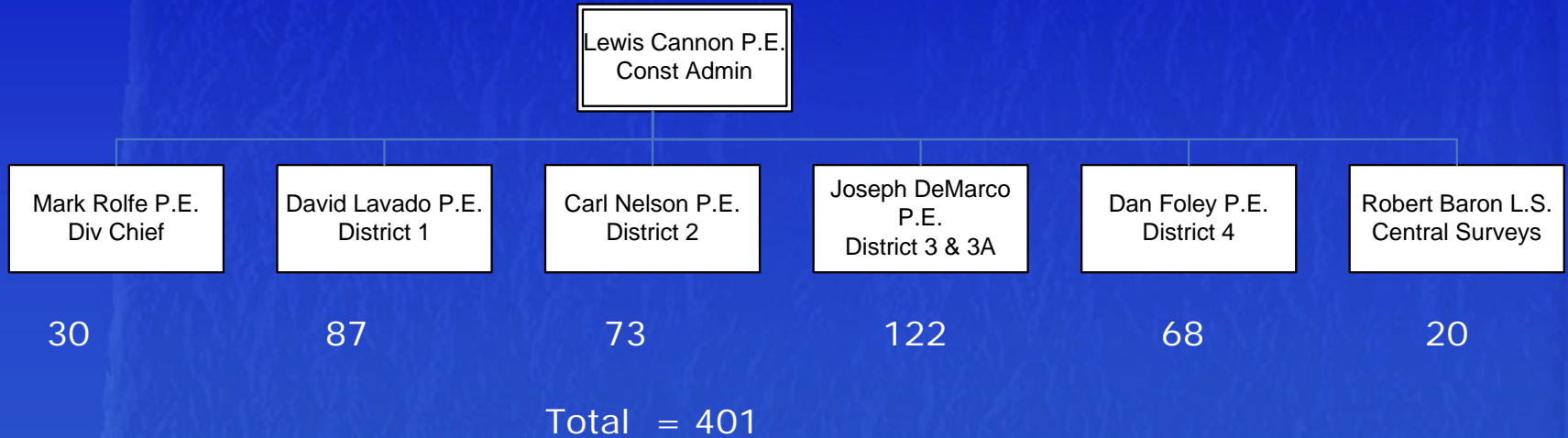
### Staffing Levels



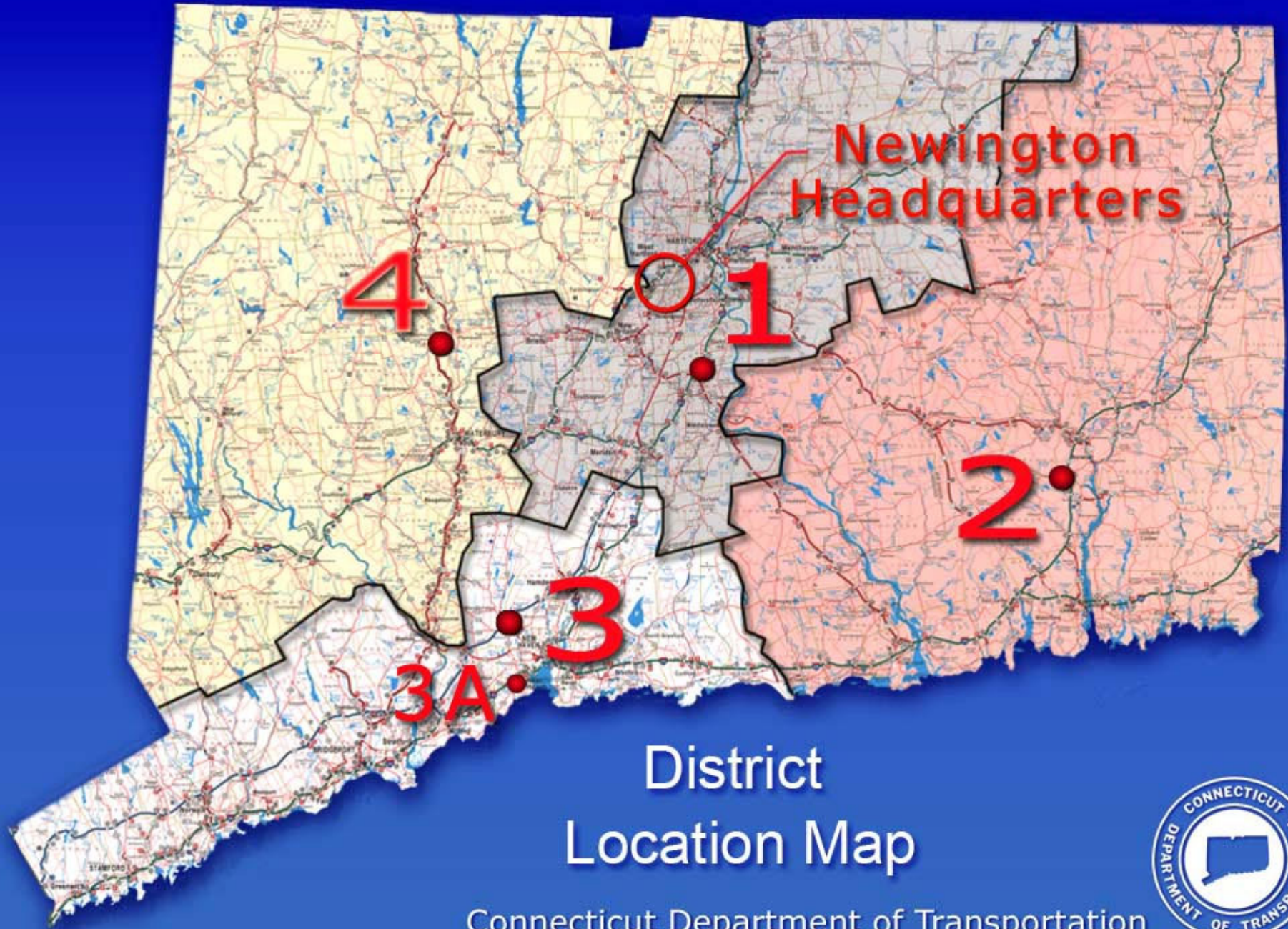


# Bureau of Engineering and Highway Operations

## Office of Construction



# Bureau of Engineering and Highway Operations





# Bureau of Engineering and Highway Operations

## Office of Construction

**Transportation Construction Administrator  
Lewis S. Cannon, P.E.**

### Sections:

#### Central Office:

- Construction Operations
- Program Management and Constructibility
- Claims and Litigation
- Central Surveys

#### District Offices:

- Construction and Surveys in Rocky Hill, Norwich, New Haven and Thomaston



# **Bureau of Engineering and Highway Operations**

## **Office of Construction**

### **Manager of Construction Operations**

#### **Mark D. Rolfe, P.E.**

#### **Construction Operations**

- Liaison function between Central and District Offices.
- Subcontractor approval for multiple divisions within the agency.
- Municipal Systems Action Team – Coordinates oversight of municipal administered projects.
- Environmental – Supports and coordinates between projects, districts and agencies.
- EEO / Civil Rights – Supports and coordinates between projects, districts and agencies.
- Records Examination – Ensures that project records are maintained in conformance with current record-keeping policies and procedures.
- Town Aid – Monitors and coordinates funding appropriated by the legislature.





# Bureau of Engineering and Highway Operations

## Office of Construction

### Program Management and Constructibility

- Program management for major capital projects including the Pearl Harbor Memorial Bridge (Q – New Haven Corridor), New Haven Rail Yard, and the New Britain / Hartford Busway.
- Reviews design plans and documents on all significant projects (greater than \$10 million) including quality assurance reviews of estimates, plans and specifications.
- Conducts annual quality control and assurance reviews on a sampling of smaller projects as determined by the Office of Engineering, the Office of Construction and the Chief Engineer.
- Provides staff assistance to the Department during value engineering reviews.
- Maintains a database of project cost overruns.



# Bureau of Engineering and Highway Operations

## Office of Construction

### Claims and Litigation

- Evaluates and analyzes contractor claims filed against the Department as allowed by State Statute, under Section 4-61.
- Represents the Department in matters of arbitration or mediation.
- Represents the Department in Superior Court in matters relative to contractor claims.
- Supports Construction Districts, other Bureaus and Units in the analysis and resolution of contract disputes.



# Bureau of Engineering and Highway Operations

## Office of Construction Survey Operations

**Robert Baron, L.S.**

### Central Surveys

- Manages, directs and coordinates all state right of way boundary maps.
- Prepares departmental property acquisition and release maps.
- Oversees all location surveys.
- Manages consultant survey work.
- Oversees all geodetic control surveys.
- Reviews and compiles photogrammetric surveys.
- Creates and maintains geographical information system (GIS) data.





# Bureau of Engineering and Highway Operations

## Office of Construction

District Offices - Districts 1, 2, 3, 3A (Q-Corridor), and 4

- Inspects construction projects in all transportation modes; including road, bridge, aviation, ports, rail, and facilities.
- Performs surveys including field layouts and construction staking.
- Performs contract administrative functions including payment to contractors.
- Liaison with local, state and federal officials and the public.
- Reviews and interpret plans and specifications.
- Reviews and approve construction change orders.
- Performs material testing functions.
- Settles disputes with contractors and affected property owners.
- Reviews and comments on proposed project plans.
- Ensures that prevailing wages are paid, and verify contract DBE / SBE goals are addressed by contractors.

Connecticut Department of Transportation





# Bureau of Engineering and Highway Operations

## Office of Construction

### Accomplishments / Challenges

#### Accomplishments:

- Initiated a Constructability Review Program.
- Major recent accomplishments include:
  - Completion of the I-95 Bridgeport Corridor (\$500M)
  - Sikorsky Bridge over the Housatonic River (\$87M)
  - Shoreline East RR Stations in Branford, Guilford and Clinton (\$11M)
  - New Haven Rail Yard Running Repair Shop (\$20M)
  - Reconstruction of Rte 6 in Andover (\$11M)
  - Reconstruction of Columbus Blvd and Whitehead Hwy in Hartford (\$25M)
  - Completion of Stamford Bus Garage (\$13M)
  - Reconstruction of Rte 7 in New Milford (\$15M)



# Bureau of Engineering and Highway Operations

## Office of Construction

### Accomplishments / Challenges

#### Challenges:

- Provide necessary management and oversight to support the Capital Improvement Program. At any point in time the Department has approx. 125 active projects with a value of \$900 million to \$1 billion.
- Staff projects in a cost effective manner. Ideally, projects less than \$5,000,000 are staffed with state forces, if available.
- Construct projects in an environmentally sensitive manner.
- Minimize delays and impacts to the traveling public caused by construction projects.



# Bureau of Engineering and Highway Operations

## Office of Project Oversight & Quality Assurance

**Division Chief  
Vacant**





# Bureau of Engineering and Highway Operations

## Office of Project Oversight & Quality Assurance

### Division Chief Vacant

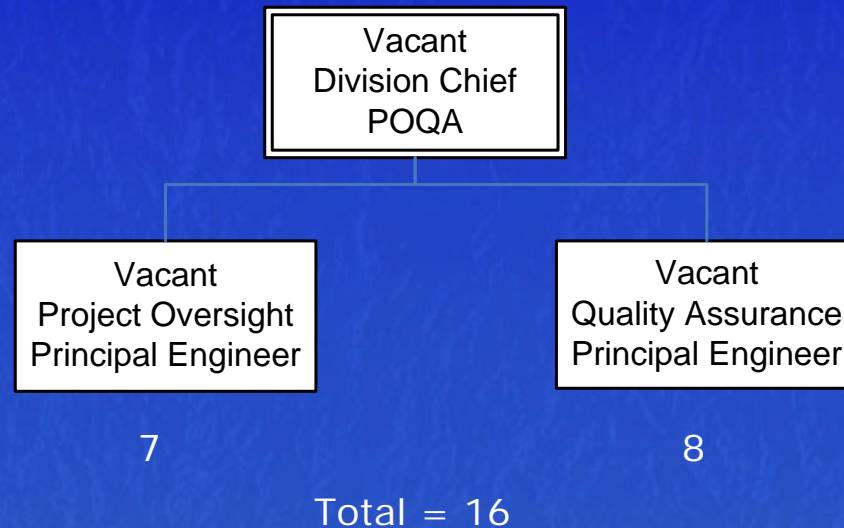
#### Anticipated Duties:

- Provide process reviews, technical audits, quality assurance and constructability reviews for its Capital Program.
- Performance reviews of the Department's maintenance programs and the development of a self assessment mechanism for technical and training issues.



# Bureau of Engineering and Highway Operations

## Office of Project Oversight & Quality Assurance



# Bureau of Engineering and Highway Operations

## Office of Project Oversight & Quality Assurance

### Division Chief Vacant

#### Anticipated Accomplishments:

- The development of a QA/QC plan.

#### Anticipated Challenges:

- Development of a QA/QC plan would require the evaluation of resources needed for the program.
- Specifications, appropriate staffing levels, procedural manual would have to be established.





# Bureau of Engineering and Highway Operations

## Office of Research and Materials

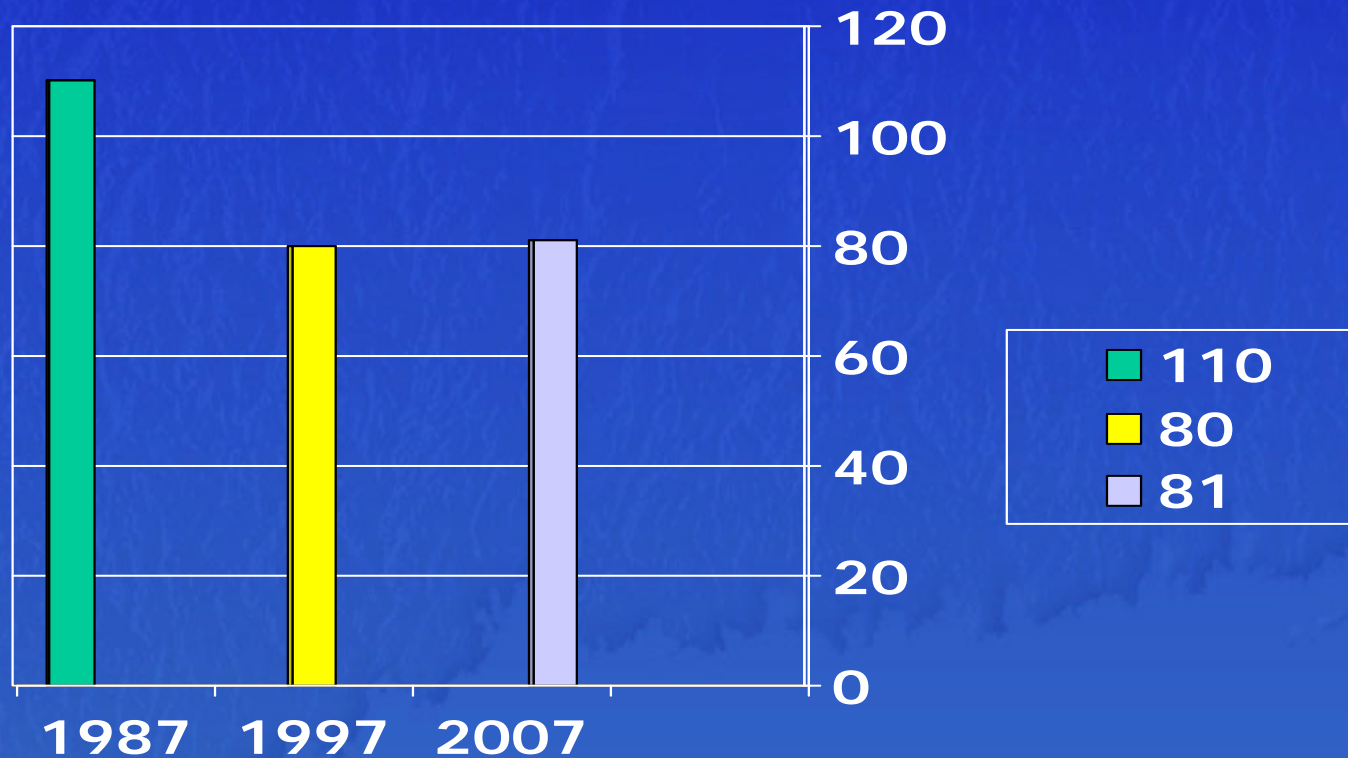
Transportation Chief Administrative Officer  
L. Brian Castler



# Bureau of Engineering and Highway Operations

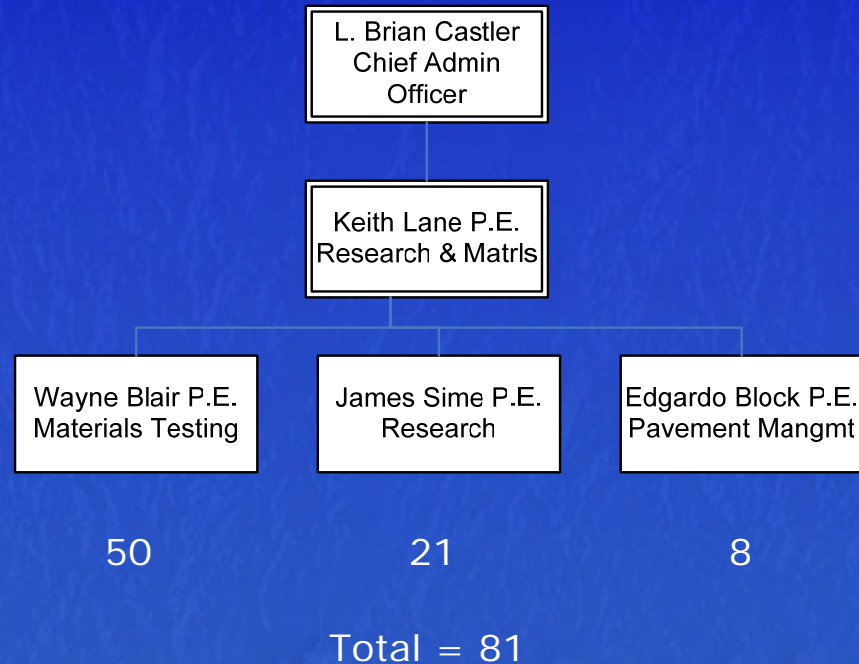
## Office of Research and Materials

### Staffing Levels



# Bureau of Engineering and Highway Operations

## Office of Research and Materials





# Bureau of Engineering and Highway Operations

## Office of Research and Materials

### Assistant Director of Materials Testing

**Wayne Blair P.E.**

#### Division Duties:

- Manages, directs and coordinates all materials testing including the following:
  - Maintain certified personnel in testing procedures/methods.
  - Annually test and qualify sources of all aggregate, Portland Cement Concrete, and asphalt (100 locations in and out of state).
  - Inspect off-site fabrication of all steel and concrete structural members (46 locations in and out of state).
  - Sample and test materials used on all Department projects (approx 150,000 tests/year).
  - Assure testing is in accordance with federal and state regulations.



# Bureau of Engineering and Highway Operations

## Office of Research and Materials

**Manager of Research  
James Sime P.E.**

Division Duties:

Manages, directs and coordinates all research:

- 100+ research projects
- High definition photologging of state-maintained highways
- Regional and National research contributor and participant
- Pavement friction testing on all State roads.
- New product evaluation



# Bureau of Engineering and Highway Operations

## Office of Research and Materials

**Supervising Engineer  
Edgardo Block P.E.**

### Division Duties:

- Manages, directs and coordinates pavement designs for all projects:
  - Provides on-demand analysis on Department paving projects.
  - Analyze pavement condition for all highways on an annual basis and recommends appropriate action.





# Bureau of Engineering and Highway Operations

## Office of Research and Materials

### Accomplishments/Challenges

#### Accomplishments:

- Materials Testing
  - Maintains a nationally accredited laboratory in accordance with federal regulation requirements.
  - Materials Compliance Program for winter maintenance for state highways.
  - Provide final materials certification for all State and FHWA projects.



# Bureau of Engineering and Highway Operations

## Office of Research and Materials

### Accomplishments/Challenges

#### Accomplishments (Cont.):

- Research
  - Fuel Cell Feasibility - New Haven Line
  - Structural Monitoring - Six Bridges
  - Electric Buses Studied
- Pavement Management
  - PM strategic roadmap
  - 450 pavement reviews & recommendations annually
  - Implementation of concrete rubblization (Route 2)



# Bureau of Engineering and Highway Operations

## Office of Research and Materials

### Accomplishments/Challenges

#### Challenges:

- Materials and Testing
  - Provide material test coverage.
  - Staffing to cover testing requirements.
  - To improve the independent assurance program for compliance with State and FHWA requirements.



# Bureau of Engineering and Highway Operations

## Office of Research and Materials

### Accomplishments/Challenges

#### Challenges (Cont.):

- Research
  - Addressing multimodal research needs with limited resources.
- Pavement Management
  - Implementing Pavement Management Systems (under way)
  - Adopting PM principles in agency paving programs (resurfacing, preservation)





# **Bureau of Engineering and Highway Operations**

## **Office of Maintenance and Highway Operations**

**Transportation Maintenance Administrator  
Robert Mongillo**



# Bureau of Engineering and Highway Operations

## Office of Maintenance and Highway Operations

### Transportation Maintenance Administrator

**Robert Mongillo**

Duties:

Administers, Directs and Coordinates all Highway-Related Maintenance Programs and Activities Including:

- Snow and Ice Removal
- Storm Damage
- Bridge and Roadside Maintenance
- Vegetation Management and Tree Removal
- Accident Response

Assets Maintained by this Office:

- 4100 Centerline Miles of Highway
- 3900 Bridges
- 1800 Sign Support Structures
- 3700 Traffic Signals

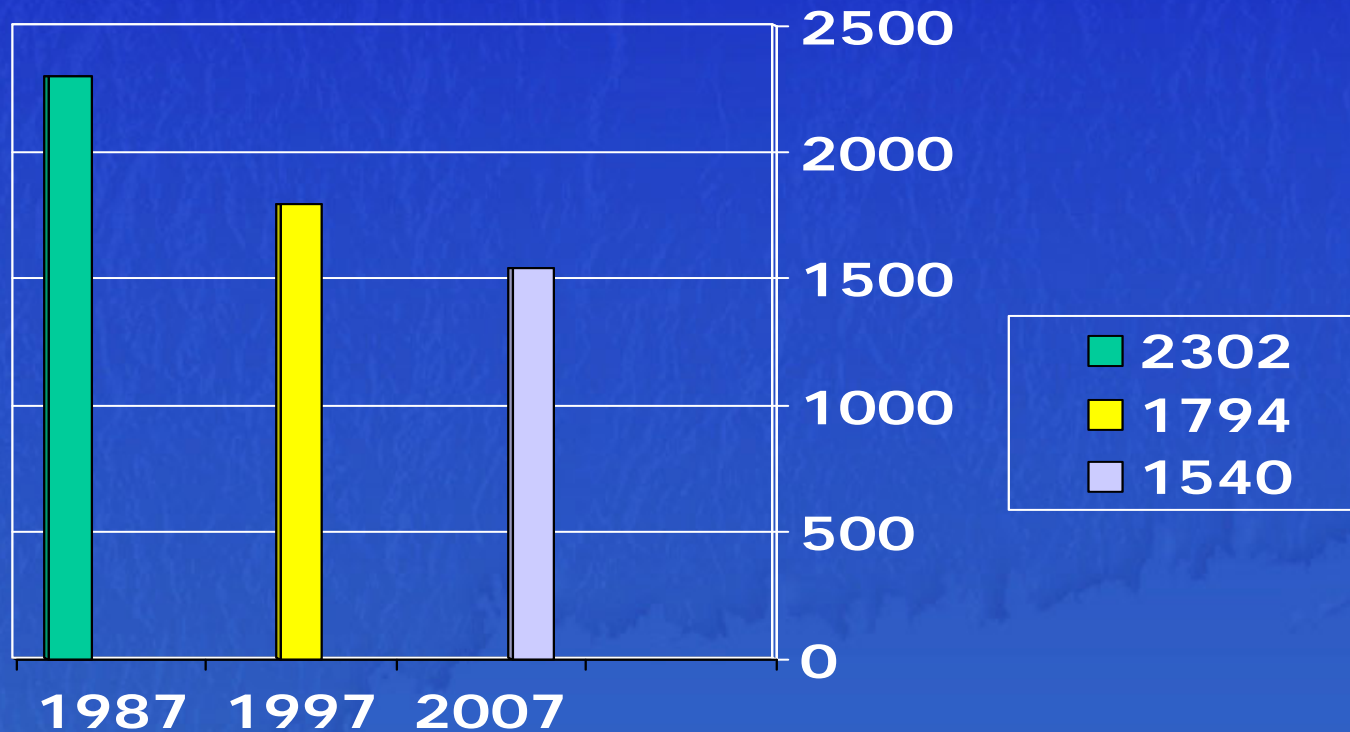
Connecticut Department of Transportation



# Bureau of Engineering and Highway Operations

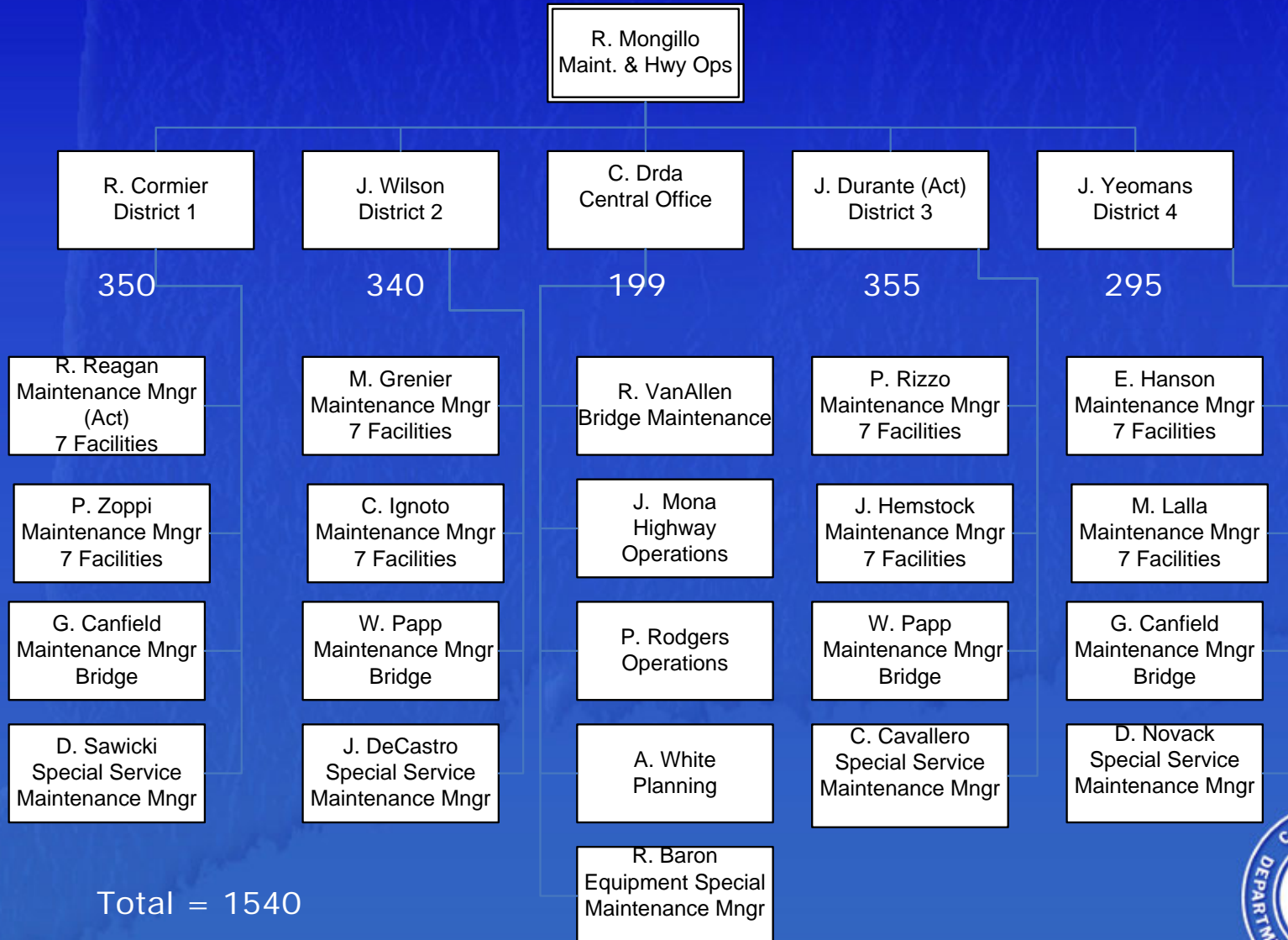
## Office of Maintenance and Highway Operations

### Staffing Levels



# Bureau of Engineering and Highway Operations

## Office of Maintenance and Highway Operations

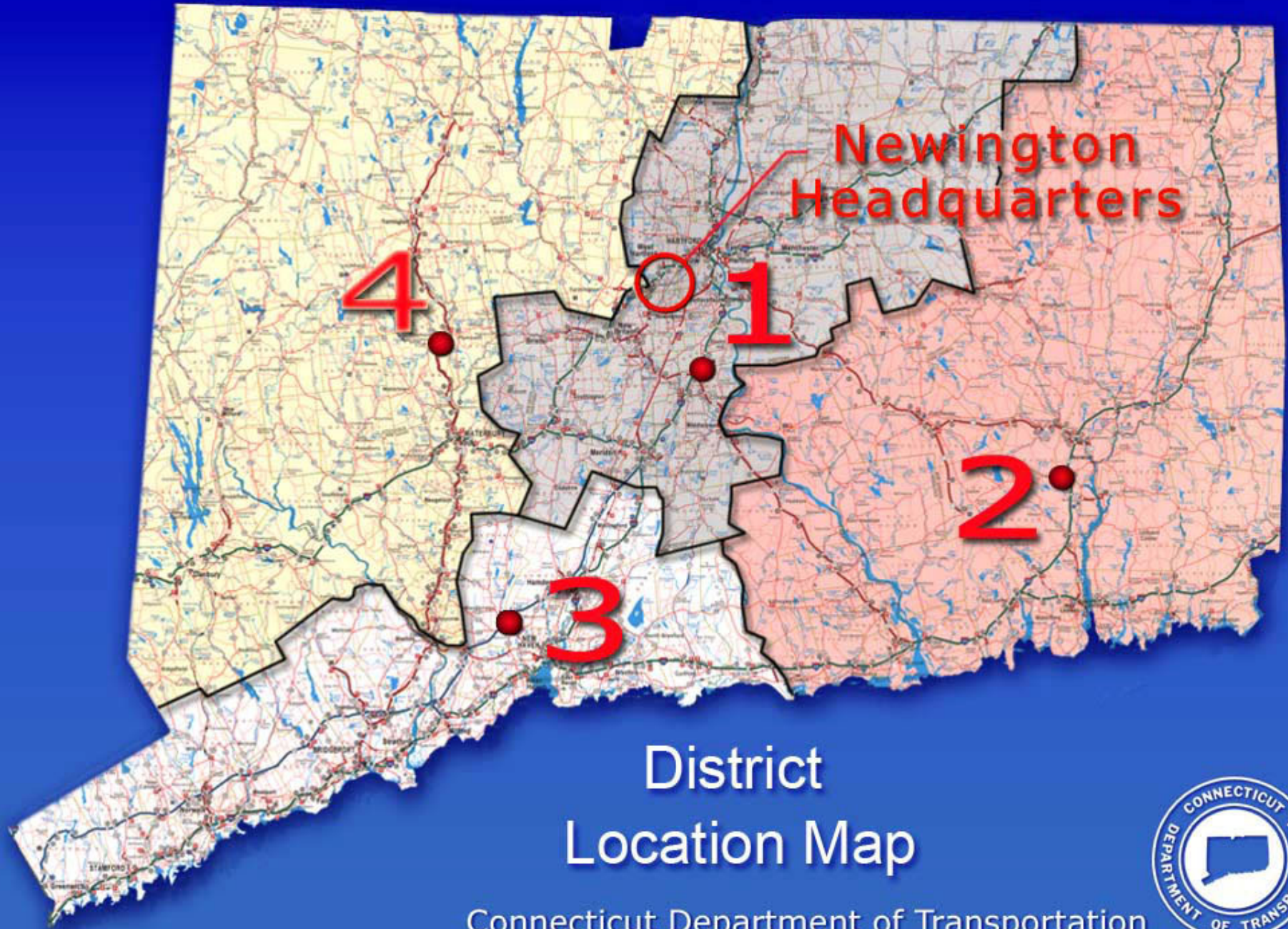


Total = 1540





# Bureau of Engineering and Highway Operations



## District Location Map

Connecticut Department of Transportation



# **Bureau of Engineering and Highway Operations**

## **Office of Maintenance and Highway Operations**

### **Office of Maintenance – Facilities**

Office Includes:

- 1 Central Office (Newington)
- 4 District Offices ( Rocky Hill, Norwich, New Haven and Thomaston)
- 48 Highway Maintenance Facilities (located strategically throughout the state)
- 4 Electrical Facilities
- 4 Signs and Markings Facilities
- 6 Bridge Facilities
- 13 Repair Garages
- 1 Sign Shop (Rocky Hill)
- 1 Machine Shop (Portland)
- 1 Mobile Radio Lab
- 1 Signal Lab





# Bureau of Engineering and Highway Operations

## Office of Maintenance and Highway Operations

### District Offices – Field Operations (Typical)

Office :

- \$24 Million - Snow and Ice removal
- \$48 Million - Vendor in Place Paving program
- Routine Roadway Maintenance
- Tree maintenance and removal
- Drainage
- Safety Appurtenances
- Mowing
- Litter Removal
- Highway signage and pavement markings
- Highway illumination and signal maintenance



# **Bureau of Engineering and Highway Operations**

## **Office of Maintenance and Highway Operations**

### **District Offices – Administrative (Typical)**

Duties:

- Encroachment permits
- Highway use permits
- Drainage, traffic and claim investigations
- Staff Training
- Hazardous Tree identification
- Planning





# Bureau of Engineering and Highway Operations

## Office of Maintenance and Highway Operations

### Central Office

#### Duties:

- Repair Unit (141)
  - Maintains fleet of approximately 5000 pieces of equipment
  - Fleet replacement value \$140 million
  - Annual parts and services budget \$1.7 million
  - Oversees alternate fuel compliance – Bio diesel, E-85
- Maintenance Operations (12)
  - Administrative liaison with District Offices
  - Coordinates highway use and encroachment permitting
  - Administers statewide herbicide program
  - Coordinates installation and regulation of highway signing
  - Operates Department's Emergency Operation and Storm Control Center
  - Coordinates with State's Emergency Operation Center



# Bureau of Engineering and Highway Operations

## Office of Maintenance and Highway Operations

### Central Office - Continued

#### Duties:

- Highway Operations (30)
  - Provides 100 miles of highway monitoring 24/7/365  
Newington Operation Center
  - Provides 94 miles of highway monitoring 27/7/365, Bridgeport  
Operation Center
  - Coordinates operation of 15 CHAMP vehicles (Connecticut  
Highway Assistance Motorist Patrol)
  - Administers Oversize/Overweight Permitting Unit
  - Operates variable message signs
  - Operates highway advisory radio
  - Coordinates Homeland Security Activities



# Bureau of Engineering and Highway Operations

## Office of Maintenance and Highway Operations

### Central Office - Continued

#### Duties:

- Bridge Operations (3)
  - Liaison with bridge maintenance units
  - Provides engineering support for bridge repairs
  - Coordinates bridge replacement program with engineering units
  - Responds to bridge emergencies (Strikes, Flooding, Fires)
  - Develops bridge maintenance contracts
  - Coordinates movable bridge activities with Coast Guard
  - Performs reviews of bridge replacement plans





# Bureau of Engineering and Highway Operations

## Office of Maintenance and Highway Operations

### Central Office - Continued

#### Duties:

- Planning (6)
  - Administers Vendor in Place paving program
  - Develops maintenance and service contracts
  - Administers Maintenance Management System – performance standards
  - Liaison with FHWA for maintenance activities
  - Coordinates work with other state agencies
  - Coordinates statewide Pavement Serviceability Ratings



# Bureau of Engineering and Highway Operations

## Office of Maintenance and Highway Operations

### Accomplishments/Challenges

#### Accomplishments:

- DISTRICT OFFICES STATE WIDE ACCOMPLISHMENTS 2006
  - Implemented a new snow and ice program to reduce sand dependency.
  - Resurfaced 185 Miles (two lanes) of Roadway
  - Installed 17,000 Feet of Drainage Pipe
  - Erected 2,500 New Highway Signs
  - Replaced 6,000 Highway Signs
  - Applied 4,700 Miles of Pavement Markings
  - Maintained 3,700 Traffic Control Signals



# Bureau of Engineering and Highway Operations

## Office of Maintenance and Highway Operations

### Accomplishments (Cont.):

- DISTRICT OFFICES STATE WIDE ACCOMPLISHMENTS 2006 (Cont.)
  - Installed 17 New Traffic Control Signals
  - Maintained 1,100 Miles of Highway illumination
  - Issued 3,900 Encroachment Permits
  - Conducted 10,000 Permit Investigations
  - Conducted 14,000 Complaint Investigations
  - Conducted 11,000 Other Investigations
  - Completed 467 Bridge Maintenance Memos (BMM)





# Bureau of Engineering and Highway Operations

## Office of Maintenance and Highway Operations

### Accomplishments (Cont.):

- Staff Maintenance Accomplishments 2006
  - Issued 110,000 oversize/overweight permits.
  - Expanded CHAMP to 7 to 15 vehicles.
  - Assisted 17,400 vehicles through the CHAMP Program.
  - Responded to 2,200 emergency call outs on Limited Access Highways.
  - Incorporated 20 alternative fuel vehicles into the fleet.



# Bureau of Engineering and Highway Operations

## Office of Maintenance and Highway Operations

### Accomplishments/Challenges

#### Challenges:

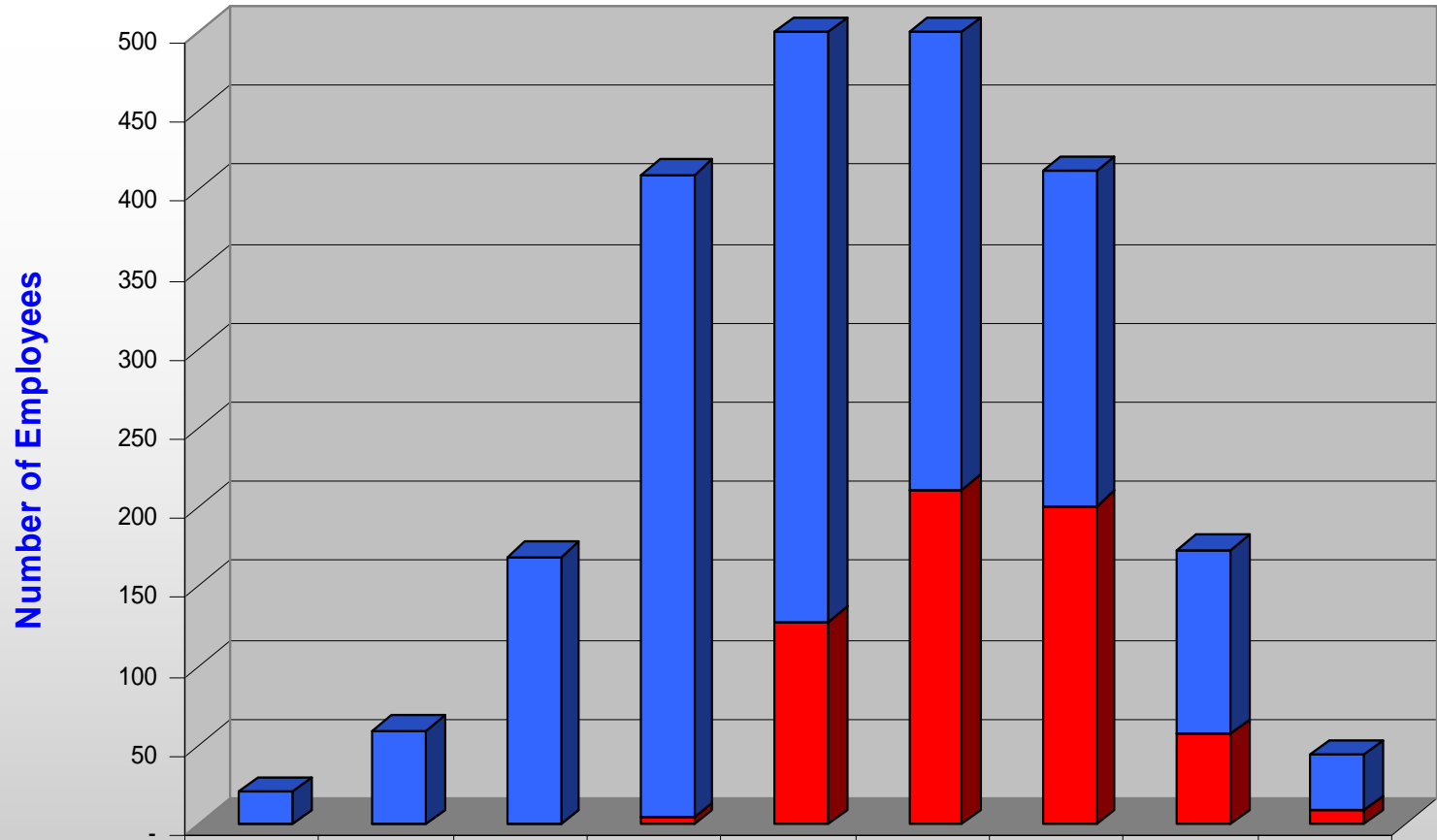
- Maintain a high level of service with reduced workforce.
- Developed measurable performance standards.
- Reduced the number of outstanding BMM's.
- Maintaining the Pavement Resurfacing Program in light of fuel and asphalt price escalation (250 miles down to 180 miles).
- Maintains a vehicle fleet that sets the standard for the municipal and public sectors.







# Age Distribution of the Bureau of Engineering and Highway Operations

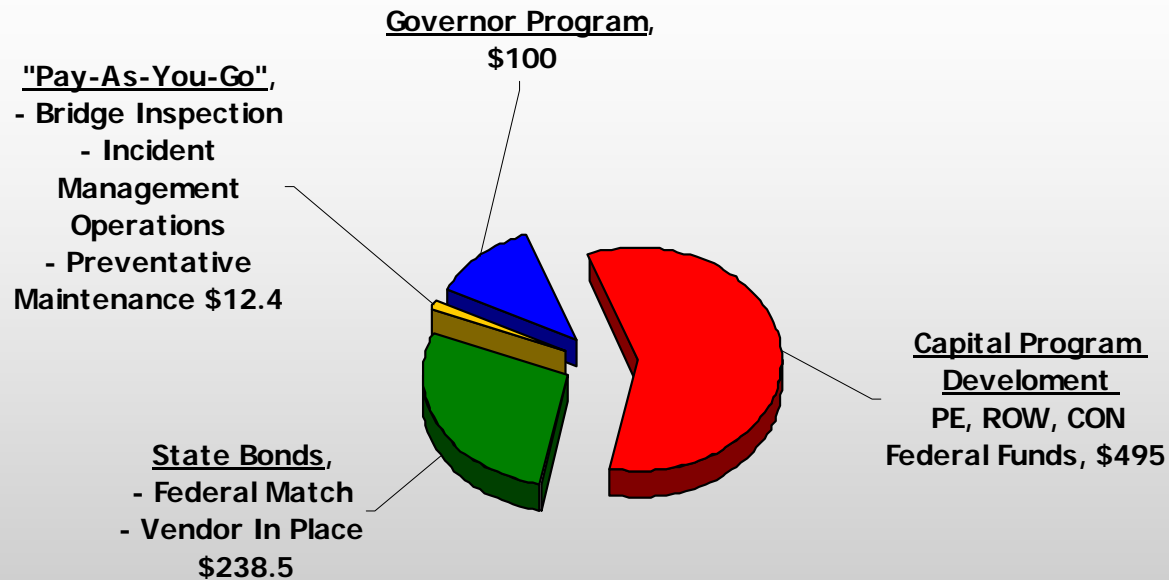


	20-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61+
<b>Total</b>	20	59	169	410	588	536	412	173	44
<b>Tier 2</b>	20	59	169	406	460	325	211	116	35
<b>Tier 1</b>	-	-	-	4	128	211	201	57	9

**Age Groups (2005)**  
**Total of 2411 Employees**

**Retirement**

## Projected Highway Funds 2008 (Millions)



# Organizations Involved/Affected by BEHO

Federal Highway Administration (FHWA)  
American Association of State and Highway Transportation Officials (AASHTO)  
State of Connecticut General Assembly (CGA)  
Mayors and 1st Selectman - Statewide  
Federal Transit Authority (FTA)  
Federal Aviation Administration (FAA)  
Various State Agencies  
Various Utility Companies  
Connecticut Association of State Highway Officials (CASHO)  
Society of Automotive Engineers (SAE)  
Occupational Safety and Health Administration (OSHA)  
Federal Motor Carrier Safety Administration (FMCSA)  
National Truck Equipment Association (NTEA)  
Motor Transport Association of Connecticut (MTAC)  
Intelligent Transportation Society of Connecticut (ITS CT)  
Intelligent Transportation Society of America (ITSA)  
TRANSCOM  
I-95 Corridor Coalition  
Merritt Parkway Advisory Commission (MPAC)  
Amtrak  
Metro-North Commuter Railroad  
Institute of Transportation Engineers (ITE), local CT Chapter and National Organization  
Connecticut Broadcaster's Association (CBA)

Connecticut Department of Transportation



# Organizations Involved/Affected by BEHO (Cont.)

Connecticut Asphalt & Aggregate Producers Association (CAAPA)  
American Road & Transportation Builders Association (ARTBA)  
American Welding Society (AWS)  
Society for Protective Coatings (SSPC)  
National Fire Protection Associations (NFPA)  
National Association of Corrosion Engineers (NACE)  
American Traffic Safety Services Association (ATSSA)  
National Safety Council (NSC)  
Various Connecticut Metropolitan Planning Organizations (MPO's) and Regional  
Planning Agencies (RPA's)  
Connecticut Construction Industry Association (CCIA)  
Connecticut Bituminous Producers Association (CBPA)  
Army Corps of Engineers (ACOE)  
United States Geological Survey (USGS)  
Federal Emergency Management Agency (FEMA)  
American Concrete Pipe Association  
Plastics Pipe Institute, Inc.  
National Corrugated Pipe Association (NCSPA)  
Uni-Bell PVC Pipe Association  
National Oceanographic Atmospheric Administration (NOAA)  
National Weather Service (NWS)





# Organizations Involved/Affected by BEHO (Cont.)

National Resources Conservation Service (NRCS)  
New England Transportation Consortium  
Transportation Research Board (TRB)  
Environmental Protection Agency (EPA)  
US Engineering Solutions Corp. (Scour Watch)  
Federal Bureau of Investigation (FBI)  
Office of Inspector General (OIG)  
American Concrete Institute (ACI)  
Airport Cooperative Research Program (ACRP)  
American Society of Testing Materials (ASTM)  
Hazardous Materials Cooperative Research Program (HMCRP)  
National Cooperative Research Program (NCHRP)  
National Highway Institute (NHI)  
National Institute of Science and Technology (NIST)  
Portland Cement Association (PCA)  
Precast Concrete Institute (PCI)  
Transportation Research Board (TRB)  
Transit Cooperative Research Program (TCRP)  
American National Standards Institute (ANSI)  
National Asphalt Paving Association  
New England Transportation Consortium (NECT)



# Organizations Involved/Affected by BEHO (Cont.)

Northeast Center of Excellence for Pavement Technology (NECEPT)

Northeast Protective Coatings Association (NEPCOAT)

Northeast States Materials Engineer (NESMEA)

American National Standards Institute (ANSI)

Various Universities

Approximately 70 organizations the Department works with.

