

Department
of
Engineering
Resource
Summary

Appropriation Summary

	FY 2003-04 Actual	FY 2004-05 Amended	FY 2005-06 Proposed	FY 2005-06 Adopted	% Change
Expenditures	3,613,471	3,625,030	3,900,875	3,900,875	7.61
FTE	34	33	33	33	0.00

Department Mission

The Department of Engineering will provide competent, comprehensive technical support, project management, and review services to customers, citizens, and co-workers in a timely and courteous manner.

Traffic Engineering will provide and proactively enhance safe and efficient movement of vehicles and pedestrians along the highway system throughout the City of Portsmouth. This mission is accomplished by the maintenance of traffic control devices, review of construction and development plans to ensure compliance with appropriate traffic engineering standards, design and implementation of traffic control devices, and collection and analysis of data to ensure safety. This is coupled with a commitment to respond to the public in an effective, efficient and equitable matter consistent with high professional and ethical standards.

Department Budget in Brief

Engineering:

The FY06 budget reflects no significant change from last year's budget. FY06 will be another demanding year with numerous activities as highlighted in the Department Trends section of this Program Summary.

Traffic Engineering:

The FY06 budget reflects an increase over FY05 budget to cover the cost of the City's streetlights. The remainder of the traffic engineering budget has been submitted with no overall change from last year's funding levels.

Department Operational Summary

The Department of Engineering contains three different departments reporting to the City Engineer, who is the Department Head. The Assistant City Engineer also supports department operation. The organization and function of those three groups are listed below.

Engineering:

The engineering department manages the City stormwater, roadway, and building construction projects; review private development and subdivision site plans; investigate citizen concerns; and provide various other technical services to both internal and external customers.

The City Surveyor handles Title and Deed research for property acquisition; preparation of plats and easements for City projects; and coordination support for the City's mapping, aerial photography, survey control, and GIS system. The City Surveyor oversees two survey

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parties who gather field data needed for this work. The survey crews also assist with construction projects through stake out and grade verification services.

The Principal Engineering Inspector and staff who provide inspection of City projects, Right-of-Way, and private development construction. The inspectors are often the staff called to investigate citizen complaints regarding right-of-way and stormwater issues. In addition, these inspectors are tasked with performing Erosion and Sediment Control (E&SC) inspections as required by State law. A major goal for the next fiscal year is to better address the E&SC program so that other city inspection needs are not impacted

In addition to typical fiscal and administrative duties, the administrative support personnel for the department are responsible for issuing right-of-way and land disturbance permits; coordinating the site plan review process; facilitating contract administration for City projects; and processing bond, grant, and VDOT paperwork.

Traffic Engineering:

Traffic operations throughout the city: Major functions include municipal project reviews, subdivision/site plan reviews, traffic control plan reviews, street lighting project layout and design, transportation related project management and design, and the city's representation in regional transportation affairs.

The Signal Shop is tasked with the operation and maintenance of 120 signalized intersections. The Manager of Signal Operations oversees a staff of 5 Traffic Signal Technicians. In addition to the repair of signals, this group handles the timing and optimization of signals through a central computer system. They also upgrade intersections, as the budget permits, with newer equipment and electronics. These upgrades have resulted in lower energy consumption, improved signal head visibility, and better intersection operation.

The Sign Shop is responsible for an inventory of approximately 28,000 signs and over 870 miles of lane markings. The Traffic Maintenance Superintendent supervises a staff of 5 including 1 sign fabricator, 1 crew leader, and 3 Traffic Maintenance Mechanics. The Sign Shop also utilizes labor from the Prison Work Release program to supplement their staff. This unit fabricates, installs, and maintains all signs in the City right-of-way; installs and maintains pavement markings; manages temporary traffic controls for work in the right-of-way; and collects traffic counts as needed.

Goals and Objectives

The primary goal of the Traffic Engineering Department is to provide long range and short-range transportation planning, together with daily transportation operations and maintenance functions that will support strong public safety programs.

~ Short Term Goals

- Provide the best possible short-range solutions to transportation issues in Portsmouth
- Maintain 110+ traffic signals which will expand in responsibility when our new computerized traffic signal system is installed during the next year

~ Long Term Goals

- Continue long-range transportation planning with an emphasis on Intelligent Highway Systems

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- Upgrade all out-dated traffic signal controllers with state of the art equipment
- Upgrade all street name signs to meet current federal requirements

~ Initiatives

- Establish and maintain an effective sign and traffic signal system inventory through new computerized technology
- Continue to search for new technology to provide an intelligent highway system in the City of Portsmouth

Major Services

- Traffic Maintenance Operations – fabricate, install, replace and repair traffic control devices
- Traffic Control – implement appropriate temporary traffic patterns for emergency, special events, and Portsmouth Parking Authority
- Technical Services – provide design review for all new construction projects and subdivisions
- Traffic Studies – conduct and analyze various studies to include traffic counts, speed studies, parking studies and traffic signal studies
- Street Lighting – provide illumination of roadways, subdivisions and parking lots to meet IES standards
- Training – provide training to ensure all employees are up to date with required certifications
- Interdepartmental support – support is given to the Planning Commission and Zoning Board, City Departments, Police Department, Sheriff Department and Courts

Departmental Trends

Engineering:

The service trends of the Engineering Department depend on two major factors:

1. The quantity and complexity of private sector commercial and residential work being done in the city and,
2. The amount of capital and operating budget funds available for City construction projects

On the private side, we anticipate another busy year of site plan reviews as Midtown and Victory Crossing build out. Although total number of site plans dropped slightly this past year, we anticipate an average of at least four new site plans per month to review and oversee in FY06. Some of the major FY06 private developments that will require design and construction coordination with the City will be:

- Maersk/APM Terminal

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- Newport Subdivision
- Westbury Subdivision
- TCC Campus
- Victory Crossing Business Park
- Midtown Retail Developments

ROW fees were up significantly last year reflecting a few rather large ROW projects done in conjunction with private development.

The number of land disturbance permits issued appears to have leveled off this past year. But the chart below clearly depicts the increased inspection and enforcement activities that are being handled by the engineering inspectors.

Engineering Services (Private Sector Related)	FY 2001-02	FY 2002-03	FY 2003-04	FY 2004-05 (projected)
Site plans reviewed	31	27	51	40
Site plan fees	\$ 1,550	\$ 6,425	\$ 12,225	\$ 7,500
ROW permits	836	563	636	580
ROW fees	\$ 18,083	\$ 75,872	\$ 76,982	\$ 140,000
Land Disturbance permits		37	152	160
LDP fees		\$ 4,400	\$ 13,295	\$ 12,500
E&SC Inspections		218	1017	3000
E&SC Enforcements		7	63	225

The department is actively managing approximately 30 major CIP projects, of which 16 will be under construction during FY06. Some of the CIP work that will be underway in FY06 includes:

- Court Facility Renovation
- Simonsdale Neighborhood Street and Drainage Upgrade (Phase 4 Construction)
- GW Culvert Upgrade
- Ebony Heights Neighborhood Street and Drainage Upgrade (Phase I Design)
- Cavalier Blvd Drainage
- Maersk Related Improvements
- Victory Blvd Roadway Construction

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In addition, the department provides engineering and contract management for over \$1,500,000 worth of Public Works improvements, such as the annual paving, concrete, and stormwater cave-in programs.

The major increase in construction costs seen over the last 1.5 years has negatively impacted capital project budgets and driven up some repair costs that have been relatively flat for a long period of time. Annual contract arrangements for much of the repair work have helped to buffer some of these cost increases.

Traffic Engineering:

The number of signs/markings installed and the amount of signal work completed largely depend on how much money is allocated on an annual basis.

The emphasis in the signal shop has been to upgrade intersections as the budget allows. LED signal heads lower energy consumption and improve visibility. Closed Loop and Coordinated Intersections can operate more effectively and move traffic better. Video Detection is more reliable than pavement loop detection. It is also easier to maintain and does not get damaged by paving and cave-in work. The latest upgrade is to provide battery back-up systems at key intersections. The department successfully tested this system at four intersections and plans to add it to another 20 intersections by next year.

The Sign Shop has been upgrading street signs to MUTCD standards ahead of an impending Federal deadline. At current staffing levels, all signs needed for City operation can be fabricated in-house except for a few specialty signs. In the area of pavement markings, the department has found it challenging to install thermoplastic striping due to insufficient staffing. Although thermoplastic striping has a lower life cycle cost since it lasts at least three times longer than paint, it requires a larger crew during installation. This issue will be further investigated during the FY06 budget year.

Hauling Permits have continued to increase significantly with rising Port Terminal Traffic and as local enforcement activities have improved awareness in the trucking community. The department is working locally with enforcement personnel and regionally with industry and other municipalities in an effort to improve the permitting process in Portsmouth. Based on totals through Feb '05, we are projecting issuing 1700 permits and collecting over \$125,000 in fees in FY05.

Prior Year Accomplishments

- Signs installed/replaced (1,495); repaired (429); fabricated (1,844); removed (387)
- Thermoplastic 4" pavement markings installed (202,381' yellow)
- Thermoplastic 4" pavement markings installed (80,949' white)
- Thermoplastic Stop bars applied (3,246')
- Arrow legends/symbols installed (43)
- Railroad legends repainted (27)
- Upgraded all School signs
- Upgraded Railroad signs and repainted crossings

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Engineering

Expenditures	FY 2003-04 Actual	FY 2004-05 Amended	FY 2005-06 Proposed	FY 2005-06 Adopted
<i>Salaries</i>	811,034	882,614	938,343	938,343
<i>Benefits</i>	208,271	281,273	315,027	315,027
<i>Contractual Services</i>	46,682	48,388	58,449	58,449
<i>Materials and Supplies</i>	8,893	3,500	3,535	3,535
<i>Other Operating Expenses</i>	2,883	5,720	5,777	5,777
<i>Internal Service Charges & Expenses</i>	244,013	174,228	180,621	180,621
Total Expenditures	1,321,776	1,395,723	1,501,753	1,501,753

Traffic Engineering

Expenditures	FY 2003-04 Actual	FY 2004-05 Amended	FY 2005-06 Proposed	FY 2005-06 Adopted
<i>Salaries</i>	477,606	507,910	538,841	538,841
<i>Benefits</i>	141,614	173,494	192,876	192,876
<i>Contractual Services</i>	9,244	31,150	6,212	6,212
<i>Materials and Supplies</i>	115,361	139,459	118,432	118,432
<i>Other Operating Expenses</i>	1,394,948	1,163,730	1,321,539	1,321,539
<i>Internal Service Charges & Expenses</i>	152,922	213,564	221,222	221,222
Total Expenditures	2,291,695	2,229,307	2,399,122	2,399,122