

TRANSPORTATION ENGINEERING AND OPERATIONS

PROGRAM MISSION

To plan, design, and operate traffic engineering aspects of roads along with their networks and relationships with other transportation modes, to achieve a safe, efficient, and convenient movement of people and goods through the collection and analysis of traffic and accident data.

The Transportation Engineering & Operations Bureau (TE&O) programs include Data Collection and Analysis, Arlington County Parking Garages & Residential Zoned Parking, Transportation System Management & Design, and Transportation Infrastructure.

- **Data Collection and Analysis Program** includes the evaluation of requests for traffic control devices including signs, pavement markings, and parking meters. The program requires close coordination with Transportation Planning and others in evaluating and implementing neighborhood traffic calming measures. Assistance in neighborhood traffic calming is also provided by deployment of a mobile speed indicator and video surveillance. Other program responsibilities include evaluation of the need for traffic and parking regulations, issuance of permits for use of the public rights-of-way, preparation of traffic and parking ordinances, and recommendation of work zone safety controls. Data Collection and Analysis staff work directly with residents to solve parking problems, manage parking ordinance development, administer the Reserved Handicapped Parking Meter Program and serve as the liaison with organizations such as Metro, universities and civic associations.

- **Arlington County Parking Garages and Residential Zoned Parking** efforts focus on increasing off-street parking and managing curbside parking. TE&O is responsible for the administration and implementation of the Residential Parking Program by defining zone boundaries, determining eligibility for the program, signing the appropriate blocks, and working with residents and civic associations. FY 2006 TE&O is implementing changes adopted by the Board in July 2005 including the institution of fees, the limitation of three permits per household, and the inclusion of multi-family dwelling in the program.

In addition to managing the Ballston Parking Garage, TE&O is responsible for operations and maintenance of the Barcroft Parking Garage and the new parking garage planned at the North Tract Sports Complex. The overall policy for operating and managing new County garages will be developed in cooperation with affected departments.

- **Transportation System Management and Design Program** designs traffic signal systems, pavement markings, pedestrian enhancements, and intersection improvements. Projects include designing mid-block pedestrian crosswalks, improving signage, evaluating and implementing left turn phases, relocating traffic signal poles, establishing pavement marking improvements, and designing new locations for school flasher warning devices.

The Street Lighting design section supports street light additions through Neighborhood Conservation, developer improvements, and DES capital projects. This program serves as the liaison between residents and Dominion Virginia Power to provide adequate lighting in Arlington residential neighborhoods and coordinates the design and maintenance of street and trail lights owned and maintained by Virginia Power.

This program also works with other County agencies to ensure County funded and constructed projects incorporate appropriate transportation engineering design principles. Staff also reviews site plans and Transportation Impact Analyses submitted by developers to the County.

- **Transportation Infrastructure Program** combines the operations of several smaller programs.
 - **The Street Light Program** is responsible for street light operations and maintenance. Although the vast majority of streetlights in the County are owned by Dominion Virginia Power, the program is responsible for ensuring the installation,

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maintenance and repairs of approximately 1,700 County maintained streetlights. These streetlights are located in commercial areas, tunnels, on pedestrian bridges, and at signalized intersections.

- **The Parking Meter Program** installs, operates, maintains and collects funds from parking meters and "Park Smart" cards throughout the County.
- **The Signs Program** is responsible for fabrication, installation, maintenance, and removal of all signs necessary to provide safe and orderly use of streets, walkways, biking/hiking trails, and parking areas. This section provides signing expertise and fabrication and installation of signs for a number of County programs and many special requests including temporary signs for various special private and public activities. Signs Program staff also assists the Parking Meter section with the installation and removal of meters by installing necessary signs.

The Signs Program continues to upgrade outdated signs throughout Arlington County. Sign condition, location, and material type are reviewed on an ongoing basis to maximize the reflectivity of the signs. The Wayfinder Program is developing a signage program whereby pedestrians, bicyclists, automobile users and visitors to Arlington County can find their way around by use of signs, kiosks and wayfinders.

- **The Signals Program** improves pedestrian and vehicular mobility through the installation, operation, and maintenance of all electrical and electronic traffic control equipment. This program is also responsible for the operation and management of ACTRA, the computerized traffic signal control system that provides centralized control for 251 signalized intersections in the County. Nineteen of these signalized intersections also operate under SCOOT (Split, Cycle and Offset Optimization Technique), a demand responsive system.
- **The Pavement Markings Program** is responsible for the layout, installation, and maintenance of pavement markings to provide delineation and alignment for safer pedestrian and vehicular movements. Paint is used on older pavement and must be redone annually. Newer pavements are repainted every three to five years with bright thermoplastic coatings that give higher bridge deck visibility at night.

PROGRAM FINANCIAL SUMMARY

	FY 2005 Actual	FY 2006 Adopted	FY 2007 Proposed	% Change '06 to '07
Personnel	\$3,375,934	\$3,365,265	\$3,625,392	8%
Non-Personnel	3,678,662	3,630,169	3,626,990	-
Intra-County Charges	-	(58,650)	(58,650)	-
Total Expenditures	7,054,596	6,936,784	7,193,732	4%
Total Revenues	4,729,421	5,041,680	5,235,948	4%
Net Tax Support	\$2,325,175	\$1,895,104	\$1,957,784	3%
Authorized FTEs	51.1	49.1	49.1	
Funded FTEs	51.1	49.1	49.1	

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SIGNIFICANT BUDGET HIGHLIGHTS

- ↑ Personnel expenses reflect a two percent market pay line adjustment, a 10% increase in employer health insurance costs, and an increase in employer retirement contributions to maintain full funding of the retirement fund, and as well as the proposed adjustment in the living wage rate from \$11.20 to \$11.80.
- ↑ Revenue increases include parking meter fees (\$55,000), right-of-way fees (\$70,000) and a higher reimbursement from the state for the maintenance of traffic signals on state roads (\$69,268).

PERFORMANCE MEASURES

Data Collection Program

	FY 2002 Actual	FY 2003 Actual	FY 2004 Actual	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2007 Goal
Reports Completed by the Collection Team	456	377	647	661	650	650	650
Locations speed radar deployed	48	7	19	6	15	15	15
Accident reports received	3,557	2,719	2,344	2,876	3,000	3,000	3,000
Right-of-way permits issued	1,045	1,106	1,081	1,268	1,200	1,200	1,200
Traffic counts	860	723	849	615	900	900	900
Parking ordinances prepared	1,367	1,334	1,403	1,454	1,500	1,500	1,500

Traffic System Management and Design Program

	FY 2002 Actual	FY 2003 Actual	FY 2004 Actual	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2007 Goal
Signal plans designed	5	12	10	15	14	10	10
New signals installed	5	4	5	4	8	9	9
Existing signal modifications	19	25	7	9	15	10	10
New school flashers	8	6	14	29	3	3	3
Signalized intersections: Level of Service evaluations better than "D"	N/A	N/A	N/A	85%	85%	85%	85%
Signals optimized	N/A	N/A	31	159	75	0	0
Left-turn phases added	N/A	N/A	8	2	2	2	2
Transit priority locations added	N/A	N/A	N/A	10	0	4	4

- Signalized intersections are routinely evaluated for safety, signals lacking adequate pedestrian support and level of service (LOS) they provide. Intersections with a LOS of worse than "D" are studied for capacity efficiency. Problem intersections are evaluated for possible solutions including marking, signal timing, or the geometry of the intersection.
- Signals optimized: The three-year project to optimize County signal lights will be completed in FY 2006.

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Street Lights Program

	FY 2002 Actual	FY 2003 Actual	FY 2004 Actual	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2007 Goal
New decorative lights installed in residential areas	172	190	65	165	140	140	160
New decorative lights installed in arterial streets	80	66	60	126	110	90	90
New "Dark Sky" compliance Cobra lights installed	N/A	37	65	64	50	50	60
Street light repairs (Arlington County)	455	303	664	731	500	525	525
Dominion Virginia Power maintained street and trail lights	14,057	13,500	12,875	12,775	12,600	12,400	12,400
Trouble calls received: All street and trail lights	1,894	967	1,175	1,630	1,200	1,150	1,150

- Dominion Virginia Power has conducted an inventory of all street lights in Arlington County. Validation of findings is forthcoming.

Parking Meter Program

	FY 2002 Actual	FY 2003 Actual	FY 2004 Actual	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2007 Goal
Preventative maintenance tasks performed	10,612	10,600	11,200	11,200	11,500	11,500	11,500
Malfunctions reported per month	709	1,350	1,586	750	800	800	800
Newly installed meters	N/A	N/A	538	279	375	500	500
Meters removed	N/A	N/A	214	135	300	300	300
Percent of meters put back in service within 24 hours	90%	90%	90%	95%	95%	95%	95%
Parking meters in service	3,696	3,700	3,676	3,629	4,000	4,000	4,000
Meter revenue	3,271,402	3,393,474	3,473,448	3,708,161	4,016,830	4,071,830	4,071,830
Revenue per meter	885	885	945	1,022	1,004	1,018	1,018

- Meter revenue includes coin collection from the meters and "Park Smart" Cards.
- Malfunctions include battery replacements.

Signs Program

	FY 2002 Actual	FY 2003 Actual	FY 2004 Actual	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2007 Goal
Signs in inventory	79,650	80,800	80,850	81,050	81,050	81,490	81,490
Percent of regulatory signs repaired within 24 hours	100%	100%	100%	100%	100%	100%	100%
Signs repaired or replaced	3,527	3,416	4,801	6,181	8,105	8,105	8,105
Temporary signs installed	7,905	10,172	9,780	10,240	12,000	12,000	12,000
Signs fabricated	1,554	1,700	2,800	3,137	2,800	4,050	4,050
New installation of overhead street name blades	N/A	N/A	N/A	20	48	48	48
Signs maintained	5%	10%	6%	10%	10%	10%	10%

- The objective is to annually perform maintenance on 10 percent of all signs in the on-street inventory.

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Signals Program

	FY 2002 Actual	FY 2003 Actual	FY 2004 Actual	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2007 Goal
Countdown pedestrian heads installed (locations)	14	50	30	43	25	25	25
Cabinets changed out/new installations	N/A	N/A	N/A	20	20	20	20
Traffic signals in service	240	241	243	249	257	266	266
Trouble calls received	968	995	2,188	2,640	2,300	2,200	2,200
Number of overhead preventive maintenance	57	76	51	249	257	266	266
Number of cabinet preventive maintenance	233	243	243	249	257	266	266
Emergency pre-emption locations added	N/A	N/A	4	22	10	30	30
Work hours per overhead PM	3	4	4	3	3	3	3
Work hours per cabinet PM	1	1	1	3	3	3	3
LED signal installation (locations)	N/A	N/A	30	46	33	25	25
Overhead detection installations (locations)	N/A	N/A	N/A	6	8	10	10

- By end of FY 2007, a total of 170 signals will be equipped with countdowns.
- PM = Preventive Maintenance

Pavement Markings Program

	FY 2002 Actual	FY 2003 Actual	FY 2004 Actual	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2007 Goal
Maintenance of lines (linear feet)	N/A	N/A	N/A	146,470	300,000	300,000	300,000
New lines (linear feet)	N/A	N/A	N/A	59,000	59,000	59,000	59,000

- FY 2005 Actuals are from January – June 2005.

FUTURE BUDGET CONSIDERATIONS

- Demand by neighborhoods to assist in advising motorists of their speed will likely result in increased requests for the mobile speed indicator trailer, which may require additional units.
- Requests for transportation analysis continue to grow, particularly to enhance and encourage pedestrian movements. Staff reallocations were made to respond to demand, but ongoing growth may require further staffing or contract expense.
- Electronic data needs continue to grow as information becomes more valuable across divisions and departments. The data is essential in developing a sound asset management plan. Funds may be needed for a contractor to create a geo-based information system, and additional staff may be needed to maintain it.
- Additional on-street bike trails, pedestrian upgraded crosswalks, and traffic calming devices will continue to add to the inventory of markings that require maintenance.
- Master Plan modifications will require more field resources for the Signs and Pavement Marking Programs.
- Additional staff will be required to manage off-street parking as well as manage and operate future parking facilities.