

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 and Operations Bureau (TE&O) programs include Data Collection and Analysis, Arlington County Parking Garages and Residential Zoned Parking, Transportation System Management and 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 works 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. TE&O also is currently managing the issuance of permits, landlord permits, FlexPasses, FlexPass Renewal Stickers, and Short-Term Visitor Passes. The Bureau also ensures that the residents pay the appropriate fees and submit the necessary documentation for receiving their permits and passes and oversees the web-interface that enables the public to view, request and pay for permits on-line. In addition to managing the Ballston Parking Garage, TE&O is responsible for operations and maintenance of the Barcroft Parking Garage.
- **Transportation System Management and Design Program** evaluates and recommends improvements to the County's roadways. This includes evaluation of intersections for traffic signals, corridor studies for pedestrian, transit, and vehicular improvements, spot studies for operational and pedestrian improvements, school flasher location and design, and street light coordination and design. This program works with developers and other County agencies to ensure all projects within the county incorporate appropriate transportation engineering design principles as well as the multi-modal principles that make Arlington a nationwide leader in smart growth.
- **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, maintenance and repairs of approximately 3,000 County maintained streetlights. These streetlights are located in commercial areas, tunnels, on pedestrian bridges, and at signalized intersections.
 - **The Parking Meter Program** is responsible for maintaining Arlington County's curbside management program to meet the needs of County residents and visitors in the County's commercial districts. Installing and maintaining parking meters in these

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high traffic areas ensures a regular turnover of parking spaces and adds to the overall economic vitality of the area.

- **The Signs Program** is responsible for fabrication, installation, maintenance, and removal of all signs necessary to provide safe and orderly use of streets. The sign program works with emergency detours, traffic counts, message boards, speed trailers, temporary signs, special projects upon request, special fabrication for other departments and pavement markings.
- **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 2007 Actual	FY 2008 Revised	FY 2009 Proposed	% Change '08 to '09
Personnel	\$3,629,308	\$3,977,150	\$4,282,027	8%
Non-Personnel	3,240,153	3,967,104	4,096,694	3%
Intra-County Charges	-	(152,247)	(152,247)	-
Total Expenditures	6,869,461	7,792,007	8,226,474	6%
Fees	4,924,958	5,824,098	6,615,563	14%
Grants	1,234,235	868,296	998,932	15%
Total Revenues	6,159,193	6,692,394	7,614,495	14%
Net Tax Support	\$710,268	\$1,099,613	\$611,979	-44%
Permanent FTEs	49.0	50.00	52.00	
Temporary FTEs	0.1	0.10	0.10	
Total Authorized FTEs	49.1	50.10	52.10	

SIGNIFICANT BUDGET HIGHLIGHTS

- ↑ The personnel budget includes the addition of two Engineers (2.0 FTEs, \$183,968) authorized by the County Board as an FY 2008 supplemental appropriation to expedite plan review; the positions were funded by an increase in fee revenue. Personnel also includes normal salary increases and corresponding increases in overtime pay, an increase in employer retirement contributions to maintain full funding of the retirement fund, and a ten percent increase in employer health insurance rates.
- ↑ Non-personnel expenditures primarily include utility (\$78,099) and fuel (\$1,434) cost increases based on anticipated rate adjustments, non-discretionary contractual increases (\$23,991) and an increase in the cost of County vehicle rental (\$18,239).

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- ↑ The revenue increase reflects fee increases based on volume for right-of-way fees (\$370,472), and revenue from parking meters (\$370,993). Right-of-way fees also reflect a change in the penalty assessed to those working in the right-of-way without a permit from \$50 to \$250, resulting in an estimated increase in revenue of \$50,000.
- ↑ Grant revenue increases reflect reimbursement from the state for the maintenance of traffic signals on state roads (\$130,636).

PERFORMANCE MEASURES

Data Collection Program

Critical Measure	FY 2004 Actual	FY 2005 Actual	FY 2006 Actual	FY 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2009 Target
Accident reports processed/analyzed	2,344	2,876	2,786	2,780	2,800	2,800	2,800

Supporting Measures	FY 2004 Actual	FY 2005 Actual	FY 2006 Actual	FY 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2009 Target
Reports completed by the collection team	647	661	1,123	988	1,000	1,000	1,000
Locations at which speed radar is deployed	19	6	20	16	15	15	15
Right-of-way permits issued	1,081	1,268	1,481	2,776	2,200	2,200	2,200
Traffic counts	849	615	473	366	400	400	400
Parking ordinances prepared	1,403	1,454	1,422	1,573	1,500	1,500	1,500

- Parking ordinances are prepared for any change in the public right-of-way that affects parking such as development and lane closures.

Residential Permit Parking Program

Critical Measure	FY 2004 Actual	FY 2005 Actual	FY 2006 Actual	FY 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2009 Target
Number of households involved	N/A	N/A	N/A	7,896	7,850	7,850	7,850

Traffic System Management and Design Program

Critical Measure	FY 2004 Actual	FY 2005 Actual	FY 2006 Actual	FY 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2009 Target
Number of plans and studies reviewed	N/A	N/A	N/A	N/A	100	200	200

Supporting Measures	FY 2004 Actual	FY 2005 Actual	FY 2006 Actual	FY 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2009 Target
Existing signal modifications	7	9	7	13	3	5	10
Level of Service evaluations better than level "D"	N/A	85%	90%	85%	85%	85%	85%
Signals optimized	31	159	0	0	54	30	40
Left-turn phases added	8	2	2	2	3	3	3
Transit priority locations added	N/A	10	0	0	0	15	35
Number of studies conducted	N/A	N/A	N/A	27	30	30	30

- Signalized intersections are routinely evaluated for safety, signals lacking adequate pedestrian support and level of service (LOS) they provide. Intersections with a LOS of

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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.

- Transit priority locations are areas with a large variety of bus transportation options (ART, Metro Bus) where traffic signals are calibrated to better facilitate the flow of traffic.

Street Lights Program

Critical Measures	FY 2004 Actual	FY 2005 Actual	FY 2006 Actual	FY 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2009 Target
New decorative lights installed in residential areas and arterial streets	135	291	156	160	210	200	120
Dominion Virginia Power maintained street and trail lights	12,875	12,755	12,318	11,857	11,820	11,725	11,780

Supporting Measures	FY 2004 Actual	FY 2005 Actual	FY 2006 Actual	FY 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2009 Target
New "Dark Sky" compliance Cobra lights installed	65	64	55	56	60	55	60
Street light repairs (Arlington County)	664	731	574	545	550	550	550
Trouble calls received: All street and trail lights	1,175	1,630	1,516	1,513	1,450	1,450	1,200

- Dominion Virginia Power conducted an inventory of all street lights in Arlington County, and as a result of that audit, the number of street and trail lights maintained by Dominion has decreased starting in FY 2007.

Parking Meter Program

Critical Measure	FY 2004 Actual	FY 2005 Actual	FY 2006 Actual	FY 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2009 Target
Parking meters in service	3,676	3,629	3,682	4,200	4,500	4,500	4,500

Supporting Measures	FY 2004 Actual	FY 2005 Actual	FY 2006 Actual	FY 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2009 Target
Preventative maintenance tasks performed	11,200	11,200	7,653	11,500	12,000	12,000	12,000
Malfunctions reported per month	1,586	750	820	915	1,000	1,000	1,000
Percent of meters put back in service within 24 hours	90%	95%	90%	95%	96%	99%	99%
Meter revenue	3,471,469	3,707,799	3,947,562	4,204,628	4,971,830	5,740,563	5,740,563
Revenue per meter	\$944	\$1,022	\$1,072	\$1,001	\$1,105	\$1,276	\$1,276

- Meter revenue includes coin collection from all meters, credit card revenue from multi-space meters and “Park Smart” Cards.
- Malfunctions include battery replacements.

Signs Program

Critical Measure	FY 2004 Actual	FY 2005 Actual	FY 2006 Actual	FY 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2009 Target
Signs repaired or replaced	4,801	6,181	9,231	6,994	7,500	7,500	7,500

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Supporting Measures	FY 2004 Actual	FY 2005 Actual	FY 2006 Actual	FY 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2009 Target
Signs in inventory	80,850	81,050	95,131	96,556	96,000	98,000	98,000
Percent of regulatory signs repaired within 24 hours	100%	100%	100%	100%	100%	100%	100%
Temporary signs installed	9,780	10,240	8,194	9,820	10,000	12,000	12,000
Signs fabricated	2,800	3,137	3,266	2,000	2,000	2,000	2,000
New installation of overhead street name blades	N/A	20	N/A	N/A	40	40	40
Signs maintained	6%	10%	10%	9%	10%	10%	10%

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

Signals Program

Critical Measure	FY 2004 Actual	FY 2005 Actual	FY 2006 Actual	FY 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2009 Target
Light Emitting Diode (LED) signals and countdown pedestrian heads installed (locations)	60	89	70	22	20	35	40

Supporting Measures	FY 2004 Actual	FY 2005 Actual	FY 2006 Actual	FY 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2009 Target
Signal plans designed	10	15	10	12	7	7	9
Cabinets changed out/new installations	N/A	20	26	9	5	15	20
Traffic signals in service	243	249	255	261	261	271	275
Trouble calls received/addressed	2,188	2,640	2,122	1,671	2,100	2,000	1,800
Number of overhead and cabinet preventive maintenance	294	498	491	492	510	520	540
Emergency pre-emption locations added	4	22	2	1	0	20	30
Work hours per overhead (Preventive Maintenance)	4	3	3	2	3	1.5	1
Work hours per cabinet (Preventive Maintenance)	1	3	2	2	1.5	1.5	1
Overhead detection installations (locations)	N/A	6	11	11	7	10	12

- Light Emitting Diode (LED) signals are installed using capital and developer funds, which can lead to fluctuation in the number installed based on availability of funds.
- By end of FY 2008 a total of 180 signals will be equipped with countdowns.
- Emergency pre-emption locations are traffic systems that enable emergency vehicles to gain priority on traffic signals so that they can achieve better EMS response times.

Pavement Markings Program

Critical Measure	FY 2004 Actual	FY 2005 Actual	FY 2006 Actual	FY 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2009 Target
New lines (linear feet)	N/A	59,000	108,388	92,944	100,000	100,000	100,000

Supporting Measure	FY 2004 Actual	FY 2005 Actual	FY 2006 Actual	FY 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2009 Target
Maintenance of lines (linear feet)	N/A	146,470	106,141	67,965	100,000	100,000	100,000

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- Linear feet maintained in FY 2007 was low due to a late start in maintenance due to a change in the contractor for this service.

FUTURE BUDGET CONSIDERATIONS

- 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.