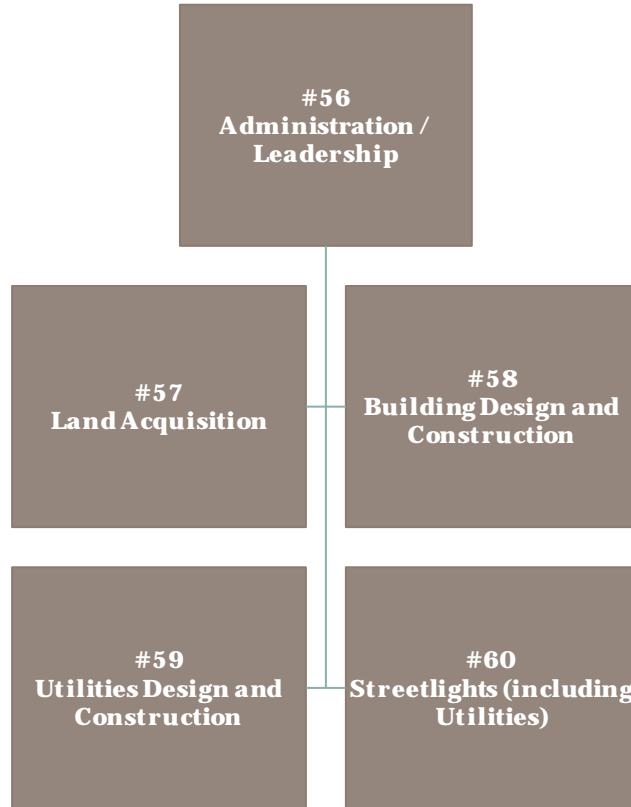


# Office of Capital Facilities

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## Department Overview

Capital Facilities is an agency within the Department of Public Works and Environmental Services (DPWES). The mission of Capital Facilities is to provide Fairfax County with quality, cost-effective buildings and infrastructure in a safe, timely and environmentally-sound manner. Capital Facilities' purpose is to complete the construction of publicly-funded projects. Specifically, Capital Facilities administers the planning, design, land acquisition and construction services for municipal facility projects such as libraries, courts, police and fire stations. The agency is also responsible for the implementation of infrastructure improvement projects, such as sanitary sewer extensions, sanitary pump stations, wastewater treatment plant expansions/upgrades, streetlight installations, and the land acquisition and construction management of transportation and stormwater management projects. Capital Facilities supports, forecasts, and plans for projects in the Fairfax County Capital Improvement Program (CIP). Total budget appropriations exceeding \$750 million are managed across various funds plus Economic Development Authority (EDA) bond funds totaling \$100 million. The combined total project estimates of active projects managed is over \$2.6 billion.

The Deputy Director of DPWES, Capital Facilities, also executes and provides oversight for all DPWES professional service contracts and related architectural, engineering and consultant services, as well as capital construction contracts. This position is also responsible for developing contracting procedures and protocols, providing departmental contract training, overseeing dispute resolutions and evaluating major amendments and construction change orders. The latter authority is specifically delegated by the Director of DPWES.

## Office of Capital Facilities

Capital Facilities' strategic plan anticipates and prepares for growth in capital projects from the Transportation Funding Plan, Stormwater Program, County buildings including public private partnerships (PPP) such as Wiehle Avenue and Innovation Center Garage, and other economic development opportunities and initiatives as directed by the Board of Supervisors to ensure the fulfillment of the County's vision for economic success. Strategic initiatives include being the provider of choice for capital project implementation by County agencies and the Board of Supervisors (BOS), enhancing customer service, being a leader in sustainable development, and supporting the substantial growth of economic development needs across Fairfax County. The agency also continues to focus on environmental stewardship, improving technology applications with implementation of the DPWES/Capital Facilities IT strategic plan, improving professional growth by training its workforce, and promoting a culture of safety through training and awareness.

### Department Resources

Category	FY 2014 Actual	FY 2015 Actual	FY 2016 Adopted
<b>FUNDING</b>			
<b>Expenditures:</b>			
Compensation	\$11,134,734	\$11,602,036	\$11,608,971
Operating Expenses	8,575,310	8,744,946	9,199,144
Work Performed for Others	(6,866,283)	(7,269,034)	(7,332,951)
Capital Equipment	0	72,103	0
<b>Total Expenditures</b>	<b>\$12,843,761</b>	<b>\$13,150,051</b>	<b>\$13,475,164</b>
General Fund Revenue	\$0	\$0	\$0
Net Cost/(Savings) to General Fund	\$12,843,761	\$13,150,051	\$13,475,164
<b>POSITIONS</b>			
Authorized Positions/Full-Time Equivalents (FTEs)			
<b>Positions:</b>			
Regular	140 / 140	148 / 148	148 / 148
<b>Total Positions</b>	<b>140 / 140</b>	<b>148 / 148</b>	<b>148 / 148</b>

### Lines of Business Summary

LOB #	LOB Title	FY 2016 Adopted	
		Disbursements	Positions
56	Administration / Leadership	\$1,176,685	13
57	Land Acquisition	568,164	19
58	Building Design and Construction	1,234,680	45
59	Utilities Design and Construction	1,825,022	67
60	Streetlights (including Utilities)	8,670,613	4
<b>Total</b>		<b>\$13,475,164</b>	<b>148</b>

## Lines of Business

LOB #56:

### **ADMINISTRATION / LEADERSHIP**

#### **Purpose**

Administration/Leadership provides oversight and coordination of all administrative support to Capital Facilities and guides the agency's strategic planning and implementation efforts.

#### **Description**

Administration/Leadership provides agencywide guidance including:

- Contractual execution for construction project contracts and related architectural, engineering and consultant service contracts, as delegated by the Director of DPWES and in compliance with the Fairfax County Purchasing Resolution.
- Prepares all contracting procedures and protocols; manages contract dispute resolutions; authorizes and evaluates contract amendments and change orders; and reviews all new DPWES contracts.
- Strategic planning, monitoring and performance measures.
- Continuity of Operations Plan development and agency safety guidance related to capital project construction and safety issues important for all staff and engineers.
- Directs leadership and management teams.

Administration/Leadership provides human resources support in employee relations, performance evaluations, disciplinary actions, time and payroll processing, training, organizational development, recruitment and benefits.

Administration/Leadership provides information technology (IT) support to 208/208.0 FTE positions including 148/148.0 FTE agency positions, support for other agencies of DPWES, and 60/60.0 FTE Department of Transportation positions using the internally-developed capital project system:

- 15,000 IT calls annually for troubleshooting; computer hardware support, managing the computer replacement program.
- Maintenance of user ID's to ensure security for multiple systems/vendor collaboration sites, File Transfer Protocol (FTP) sites.
- Performs hardware upgrades and maintenance, and installs new technology.
- Project Management software development .NET/SharePoint, SharePoint Designer, InfoPath, Web development, report development and ASP.NET Web Application, web updates and design, software license maintenance, system maintenance for 25 to 30 engineering products.
- Project Management System Support, Work Performed for Others (WPFO) System, Land System Support, Streetlight System, Contract System, Completed Project Reporting and Project Reporting Systems.
- Web-related/Web Procurement activities, Americans with Disabilities Act (ADA) compliance/communication/public education.

# Office of Capital Facilities

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Administration/Leadership further supports budget and accounting requirements for the DPWES agency and the Department of Transportation (DOT) funds including:

- Reviews, tracks and administers financial contracts for capital projects.
- Administers Fund 30050, Transportation Improvements, projects for DOT and oversees complex projects.
- Financial oversight of 500 design and construction projects with appropriations of \$752 million and over \$100 million in EDA Bond funds;
- Manages all financial aspects of the Streetlight Program, including the utilities budget and projections, the Developer Streetlight program, accounts with utility providers, and minor streetlight upgrades.
- Administers the Developer Default projects, BOS District Projects, and federal and state grants.
- Coordinates internal and external audits, financial policy development and compliance.
- Administration of complex funding sources/revenue; and complex PPP projects.
- CIP, forecasting, cash flow, analysis, management of bond sale needs.
- Debt financing and management, third party financing arrangements, revenue reimbursements.
- Federal Project management, EDA and General Obligation bond management.

Budget oversight of the following funds:

- Capital Facilities General Fund;
- Fund 50000, Federal State Grant Fund (DOT and DPWES);
- Fund 30010, General Construction and Contributions (DOT and DPWES);
- Fund 30030, Library Construction;
- Fund 30050, Transportation Improvements (DOT);
- Fund 30060, Pedestrian Walkway Improvements (DOT and DPWES);
- Fund 30070, Public Safety Construction; and,
- Fund 30080, Community Revitalization Program (Countywide).

This LOB is performed with 13/13.0 FTE positions including 1/1.0 DPWES Deputy Director who oversees all operations of Capital Facilities; 6/6.0 FTE positions in financial management; 3/3.0 FTE in IT; 2/2.0 FTE supporting human resources; and 1/1.0 FTE in training and safety development.

## Benefits

Administration/Leadership is key to fulfilling the mission of Capital Facilities to provide Fairfax County with quality, cost-effective buildings and infrastructure in a safe, timely and environmentally-sound manner.

- Services provided are essential for capital project implementation of County capital improvements, project planning and implementation of the CIP.
- Supports complex financial arrangements and public private partnerships (i.e., Wiehle Avenue, Merrifield, Public Safety Headquarters, and Laurel Hill Adaptive).
- Supports bond-funded projects such as libraries, public safety, commercial revitalization, transportation improvements, trails and walkways, and BOS district projects.
- Performs leadership and administration that promotes programs to improve the quality of life.

# Office of Capital Facilities

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- Supports and guides initiatives, manages resources that support financially cost-effective buildings and infrastructure in a safe, timely and environmentally-sound manner.
- Supports the management of both federal and state grants.
- Assures effective management of resources and efficiency and effectiveness.
- Assures accuracy and compliance with internal and external financial requirements.

## **Primary Correlation to County Vision Elements**

Exercising Corporate Stewardship: This LOB manages substantial resources (\$576,987,584 total value of financial contracts design, construction and purchase orders related to capital projects and \$752,108,668 managed across the various funds with EDA Bond funds adding more than \$100 million for public private partnership).

## **Mandates**

Although Administration/Leadership is not mandated, it is critical in ensuring compliance for:

- Federal Grants, Federal Pass Thru Grants, State Grants;
- Federal Debarment rules and the Davis Bacon Act;
- Proffers;
- Ensuring compliance with contractual agreements with vendors;
- External Financial Guidelines, GASB (Governmental Accounting Standards Board) requirements;
- Internal budget/financial/human resource/IT policies and procedures for Fairfax County;
- Planning and implementation of the County CIP;
- Bond and fiscal requirements;
- Contractual execution and oversight; and,
- Public private partnership agreements.

## **Trends and Challenges**

- Meet growing financial demands associated with growing demand for projects for public safety, libraries, recreational facilities, courts, etc.
- As population grows and urbanization continues, the demands and workload for Capital Facilities services increases. Portions of the County are facing significant renewal and renovation requirements for facilities. This requires a careful balancing to address priorities and greater complexity in funding and technology.
- The focus on economic development and revitalization requires greater partnerships as per the County's strategic plan to facilitate economic success and goals of investing in natural and physical infrastructure. Financial complexity increases with greater public private partnerships; requiring greater financial oversight, complex financing terms, varied contract terms and management of funding sources and uses.
- Greater leverage of other financing options due to budget constraints increases third party financial banking arrangements for financing and debt management, bond financing and managing various sources of funding with increased budget and financial oversight.
- Keeping pace with industry for IT solutions for Geographic Information System (GIS), web-based solutions, collaboration tools, and engineering software.
- Increase in human resources and administrative support.
- Financial contract growth of over 300 percent requiring greater oversight.

## Office of Capital Facilities

- Contract complexity growth with PPP projects such as Wiehle Avenue, Merrifield Center, Public Safety Headquarters, Providence Community Center, and Laurel Hill Adaptive.
- Greater management of funding sources and uses as General Fund dollars decrease and other funding sources increase including proffers, contributions, partnership arrangements, and EDA and General Obligation bonds.

### Resources

Category	FY 2014 Actual	FY 2015 Actual	FY 2016 Adopted
<b>LOB #56: Administration / Leadership</b>			
<b>FUNDING</b>			
<u>Expenditures:</u>			
Compensation	\$963,587	\$1,056,124	\$747,067
Operating Expenses	474,883	544,201	429,618
Capital Equipment	0	72,103	0
<b>Total Expenditures</b>	<b>\$1,438,470</b>	<b>\$1,672,428</b>	<b>\$1,176,685</b>
General Fund Revenue	\$0	\$0	\$0
<b>Net Cost/(Savings) to General Fund</b>	<b>\$1,438,470</b>	<b>\$1,672,428</b>	<b>\$1,176,685</b>
<b>POSITIONS</b>			
Authorized Positions/Full-Time Equivalents (FTEs)			
<u>Positions:</u>			
Regular	11 / 11	13 / 13	13 / 13
<b>Total Positions</b>	<b>11 / 11</b>	<b>13 / 13</b>	<b>13 / 13</b>

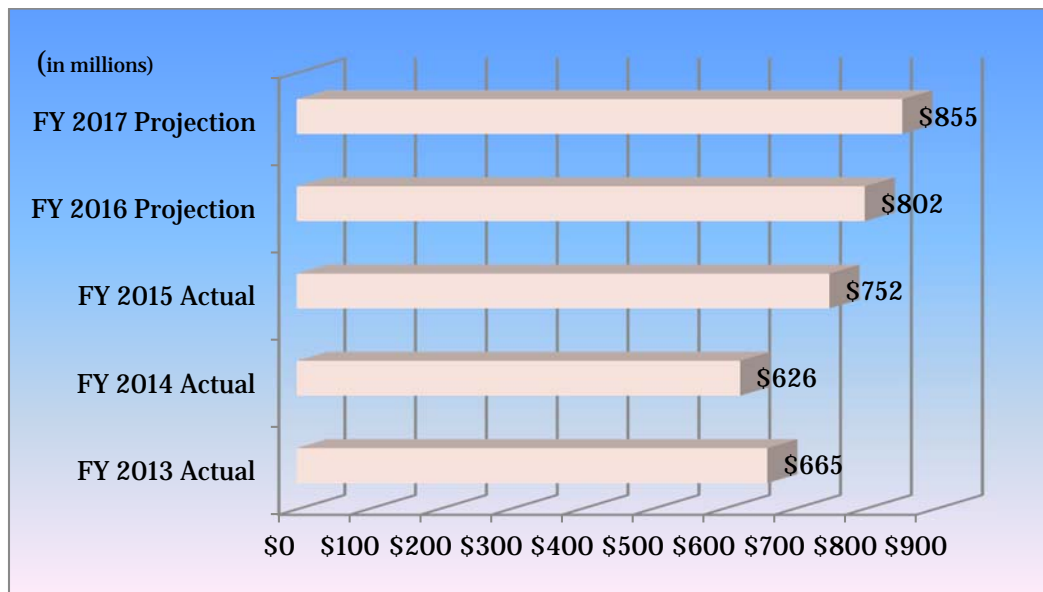
### Metrics

Metric Indicator	FY 2013 Actual	FY 2014 Actual	FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
Dollar Value of Professional Architectural Engineering, Construction and Procurement Contracts Managed	\$348.03 mil	\$367.60 mil	\$576.98 mil	\$634.00 mil	\$698.00 mil
Total Appropriations Managed	\$664.5 mil	\$626.3 mil	\$752.1 mil	\$802.0 mil	\$855.0 mil
Contract Cost Growth Less than 5%	4.11%	4.26%	4.91%	4.80%	4.80%
Total Appropriations Managed per FTE	\$110.8M/FTE	\$104.4M/FTE	\$125.4M/FTE	\$114.6M/FTE	\$122.1M/FTE
Total Dollar Value of Professional Architectural Engineering, Construction and Procurement Contracts managed per FTE	\$58.0M/FTE	\$61.3M/FTE	\$96.2M/FTE	\$90.0M/FTE	\$99.0M/FTE

## Office of Capital Facilities

As shown in the metrics presented above, there has been growth in the budget appropriations managed. This is associated with an increase in the number and scope of projects which require increased oversight of contracts, financial management, resources, and IT needs. Appropriation growth increased more than 20 percent from FY 2014 to FY 2015 and this trend is expected to continue. Additional contracts require greater coordination among private developers, legal contractual requirements, financial monitoring of County versus and partner portions, fiscal agent relationships, proffers, contributions and funding sources to manage. This complexity is already being seen with Wiehle Avenue Garage, Laurel Hill Adaptive, Public Safety Headquarters and Merrifield Center. These projects also involve cross-county departmental partnerships with agencies such as the County Attorney's Office, Department of Procurement and Material Management, Department of Planning and Zoning, Transportation, and the Community Services Board.

### *Total Appropriations Managed*



### **Total Appropriations per FTE**

This metric (shown in table above) indicates the efficiency in management. The growth in the average workload per FTE related to contract management has increased 47 percent. Staff efficiency is noted as staff is managing more funds with no increase in staffing.

# Office of Capital Facilities

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LOB #57:

## **LAND ACQUISITION**

### **Purpose**

Land Acquisition's purpose is to acquire the land rights necessary to enable construction of all County capital improvement projects. This includes all aspects of property analysis during design, legal land title research, appraisal or appraisal review, as well as negotiations and coordination with land owners and owner representatives to acquire property or land rights in an efficient and timely manner. Land Acquisition provides strategic leadership in the planning, negotiation, design and implementation of land issues for increasingly complex, public-private partnership capital projects.

### **Description**

Services are provided to several County departments and agencies including:

- Department of Transportation;
- Building Design and Construction Division;
- Utilities Design and Construction Division;
- Stormwater Planning Division;
- Maintenance and Stormwater Management Division; and,
- Wastewater Collection Division.

The land acquisition program provides a critical and necessary service required for the implementation of public use capital facilities. The County's recent focus on economic development and related public private partnerships has required special services for providing land rights for project implementation. Land Acquisition support is essential to foster economic sustainability as the County encounters more specialized processes for providing land.

Land Acquisition staff performs all aspects of property analysis during project design, including:

- Title review.
- Acquisition of land or right of way and other land rights.
- Permanent and temporary easements.
- Real property conveyances.
- Settlement or litigation.
- Eminent domain.
- Appraisal or appraisal review, and other land valuation processes.
- Negotiations and coordination with land owners and owner representatives to acquire property or land rights in an efficient and timely manner.
- Coordinating with the Office of the County Attorney to settle litigation pertaining to the Board's exercise of eminent domain when warranted.



# Office of Capital Facilities

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The division's standard operating procedures are specifically designed to meet all state and federal legal requirements for land acquisition that are critical to maintaining state and federal funding for capital projects or ensuring against legal challenges.

The Land Acquisition Division is part of Capital Facilities in DPWES. The division consists of 19/19.0 FTE positions, headed by a Division Director, and organized into two branches whose concentration is the acquisition of land rights required for the implementation of capital improvement projects (transportation, stormwater, buildings, wastewater) and support of public/private partnerships and large projects.

## Benefits

Land Acquisition is key to fulfilling the mission of Capital Facilities to provide Fairfax County with quality, cost-effective buildings and infrastructure in a safe, timely and environmentally-sound manner.

- As the County has grown, so has the need for public facilities. The longstanding and continued operation of Land Acquisition as a line of business remains an essential element of the construction, maintenance and expansion of capital projects. Without land acquisition and land rights, most capital projects cannot proceed to construction.
- Land Acquisition is responsible for securing land and land rights for a combined project portfolio valued between \$750 million to \$1 billion dollars. Land Acquisition secured land rights on 122 properties for transportation projects in FY 2015.
- Public acquisition of land, temporary and permanent easements, letters of permission and other land rights are governed by specific state and federal regulations that can have adverse effects on County projects if not strictly adhered to. Land Acquisition assures that land and land rights are obtained in compliance with all state and federal regulations while tailoring the acquisition process to remain sensitive to the needs of significant stakeholders within the County such as landowners, homeowners associations, civic associations and the public at large.
- This LOB provides the centralization of services for multiple county customers, maximizing service efficiency and minimizing redundancy from duplicate staff efforts spread through several agencies.
- This LOB implements several Vision Elements in the 2015 Strategic Plan to Facilitate the Economic Success of Fairfax County.

## Primary Correlation to County Vision Elements

**Building Livable Spaces:** Land Acquisition secures the land rights for providing public infrastructure that supports a distinctive and desirable place for communities to grow and thrive. Land acquisition and land rights, including temporary and permanent easements, clear the way for construction of projects that become prominent facilities in the community. These include fire stations, police stations/district governmental centers, libraries, commuter parking garages, Public Safety Headquarters (PSHQ), and community centers, as well as facilities to support operations and maintenance.

**Connecting People and Places:** Constructing new transportation infrastructure and adapting existing roads and pedestrian networks to the needs of present and future residents requires the acquisition of land and land rights in a timely fashion for landowners and project stakeholders. The vast majority of priority transportation projects requires the acquisition of additional land rights. The projects vary widely in scale and scope, from the Route 29 improvements to Route 1 pedestrian improvements, bus stops or intersection improvements. These projects address the County's growing transportation needs, and require an individualized approach.

# Office of Capital Facilities

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## Mandates

State provisions and requirements set a standard for public agencies apart from the normal pursuit of land rights and acquisition that private entities, individuals and businesses employ. The maintenance of a land acquisition program is essential to ensuring that these mandates for compliance are met as listed below:

- The County is authorized to condemn property for public use pursuant to Code of Virginia §§ 15.2-1901, et seq., and in particular in §15.2-1901.1, with procedures dictated by §§ 15.2-1902-1905.
- Code of Virginia Title 25.1 regarding the general powers and procedures for eminent domain/condemnation, with slow take procedures provided in Chapter 2 (§§ 25.1-200 - 25.1-251).
- Quick take (transferring defeasible title by certificate) procedures provided in Chapter 3 (§§ 25.1-300 - 25.1-318).
- Relocation requirements (Virginia) are provided in Chapter 4 (§§ 25.1-400 - 25.1-421) and Virginia Administrative Code Title 24, Agency 30 (Department of Transportation), Chapter 41 (Sections 10 – 760). Code of Virginia § 1-219.1 provides limitations on the exercise of the power of eminent domain.
- Further Code of Virginia provisions relating to eminent domain are found in Title 33.2, Chapter 10 (§§ 33.2-1000 - 33.2-1034), with Code of Virginia § 15.2-1902 expressly making §§ 33.2-1007 through 33.2-1011, 33.2-1014, and 33.2-1017 applicable, with respect to any condemnation by the County of property for highway purposes.

Where federal money is involved in the project, federal code and regulations must also be followed for land rights and land acquisition, or federal funding can be withheld as noted below:

- USC Title 42, Chapter 61, noting that 42 U.S.C. 4604(c) Federal financial assistance may be withheld to any displacing agency found by the Federal agency “...to have failed to comply with the laws described in subsection (a) of this section.” 42 U.S.C. 4655 references this also to acquisition. Code of Federal Regulations, Title 24, Subtitle A, Part 42 provides the regulations applicable to federal acquisitions and acquisitions in which a project receives Federal money.

## Trends and Challenges

- Challenging environmental requirements brought about by a more restrictive regulatory environment for the exercise of eminent domain.
- In response to property rights initiatives within Virginia, the 2012 amendment to the State constitution and subsequent changes to the State Code restrict the conditions and the process by which condemnation of private property for public use can be conducted, and expanded the impacts for which compensation could be applicable.
- The Board of Supervisors has made a commitment to prioritize the expenditure of \$1.4 billion in funding over the next 6 years for transportation projects.
- Funding identified from state and regional funds will provide for approximately 180 projects, including new roads, sidewalks and bike lanes.
- The transportation bond referendum approved in November 2014 authorized bonds to provide for \$16 million in spot road improvements to increase roadway capacity, reduce congestion, and improve safety. Another \$77.5 million was authorized for pedestrian improvements. The majority of these improvements require land rights from adjacent properties in a timely and efficient manner to ensure project completion.
- In FY 2015, land rights from 122 affected properties were obtained for transportation projects and that number is expected to increase and expand once more projects are realized from the November 2014 referendum.

## Office of Capital Facilities

- Maintaining environmental infrastructure is a mandate that over the long-term will require the acquisition of land rights to enable stream restoration projects to be completed to fulfill the goals of the County's Strategic Plan for the Economic Success of the County as well as the requirements of the County's Municipal Separate Storm Sewer System (MS4) permit.

A key goal of the Strategic Plan for the Economic Success of the County, is to further diversify the County's economy through public private partnerships. Land Acquisition has adapted to provide support to the County's increased participation in public private partnerships, requiring the acquisition of land rights often in a different form from traditional acquisition, through land exchanges, reciprocal easements or other cooperative endeavors with private entities.

### Resources

Category	FY 2014 Actual	FY 2015 Actual	FY 2016 Adopted
<b>LOB #57: Land Acquisition</b>			
<b>FUNDING</b>			
<u>Expenditures:</u>			
Compensation	\$1,067,922	\$1,097,626	\$1,678,231
Operating Expenses	37,910	56,971	24,695
Work Performed for Others	(747,546)	(768,338)	(1,134,762)
<b>Total Expenditures</b>	<b>\$358,286</b>	<b>\$386,259</b>	<b>\$568,164</b>
General Fund Revenue	\$0	\$0	\$0
Net Cost/(Savings) to General Fund	\$358,286	\$386,259	\$568,164
<b>POSITIONS</b>			
Authorized Positions/Full-Time Equivalents (FTEs)			
<u>Positions:</u>			
Regular	17 / 17	19 / 19	19 / 19
<b>Total Positions</b>	<b>17 / 17</b>	<b>19 / 19</b>	<b>19 / 19</b>

# Office of Capital Facilities

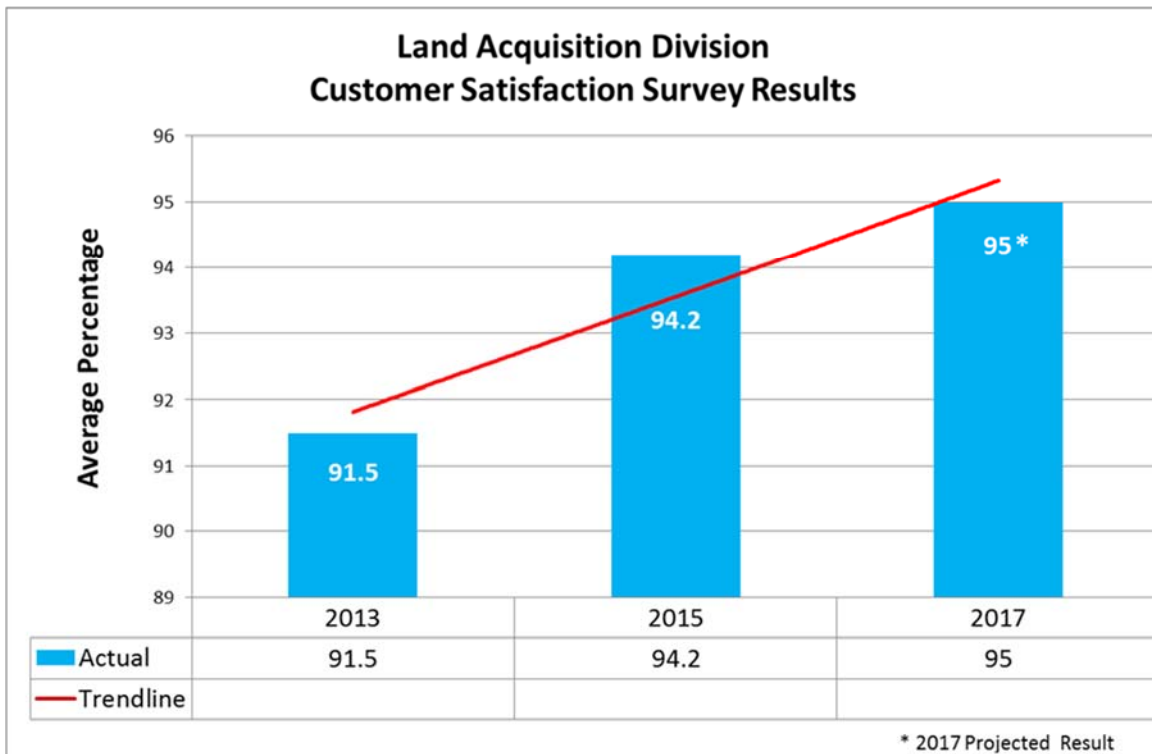
## Metrics

Metric Indicator	FY 2013 Actual	FY 2014 Actual	FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
Customer Satisfaction Survey	91.5%	NA	94.21%	NA	95.00%
Average Number of Days to Complete Acquisition Phase by Year per Full-Time Employee/ Equivalent	20 days	13 days	12 days	12 days	12 days

### **Customer Satisfaction Survey**

Two metrics provide direct measurement of the land acquisition line of business' efficiency and effectiveness: the customer service survey performed on a biannual basis, and the average number of days per full-time employee/ equivalent to complete the acquisition phase of county projects where land rights or acquisition are required.

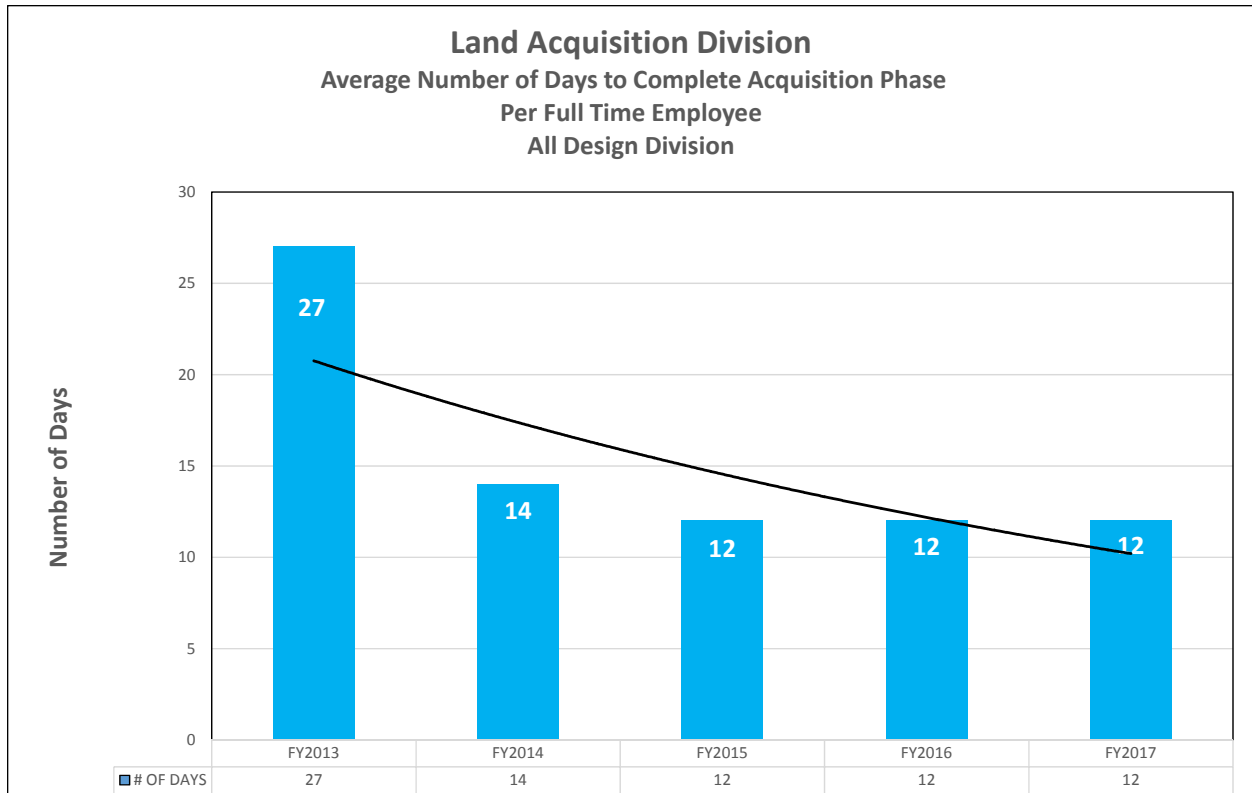
The customer service survey was first implemented in FY 2013 and surveyed project management personnel involved in Transportation Design Division, Stormwater Management, Utilities Design and Construction, Wastewater Management and Building Design and Construction Division, as to the efficiency, effectiveness, and timely response to their project requirements. The intent of the survey was to provide a metric to measure ongoing initiatives within the Land Acquisition Division to improve outreach to customers who rely on acquisition of land and land rights in order to proceed with construction of capital projects. A benchmark of a 90 percent satisfaction rate was established as a goal to maintain in this effort. In FY 2013, the results of the survey measured a 91.5 percent customer satisfaction and increased to 94.21 percent in FY 2015, reflecting an improvement in service quality resulting from incorporating constructive feedback received from the last survey and incorporating changes in process to improve acquisition services. The results are summarized in the table below showing continued service quality improvement.



# Office of Capital Facilities

## **Average Number of Days per FTE to Complete Acquisition Phase**

Land Acquisition has streamlined land title review, valuation and negotiation procedures, while adhering to state and federal mandates to provide land rights and maintain the project schedule. This metric was developed as a measure of the average number of days to complete the acquisition phase per full-time employee/equivalent. As a result, the average number of days needed to complete the acquisition phase of all projects was reduced from 27 days per full-time employee/equivalent in FY 2013 to 12 days per full-time employee/equivalent in FY 2015 reflecting greater efficiency. The average number of days needed to acquire land rights is anticipated to remain steady, in order to ensure continued compliance with state and federal requirements.



# Office of Capital Facilities

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LOB #58:

## **BUILDING DESIGN AND CONSTRUCTION**

### **Purpose**

Building Design and Construction Division (BDCD) is responsible for management and implementation of nearly all major County capital building projects including new construction and major renovations. More specifically, BDCD is responsible for: 1) providing overall project management for the planning and design for major building projects; 2) providing construction management, including quality control inspections for major building projects; and 3) providing the coordination and negotiations for major public private partnerships (PPP) and joint infrastructure developments; and for associated major real estate transactions. Approved CIP projects implemented by BDCD include facilities to support critical program needs in areas that include: police stations, fire stations, libraries, homeless shelters, community centers and senior centers, vehicle maintenance facilities, parking garages, administrative office buildings, maintenance facilities, human service treatment and service delivery facilities, and Community Services Board (CSB) facilities. Capital project funding sources include General Fund, General Obligation Bonds, EDA bonds, enterprise agency funds, and other sources including the Fairfax County Department of Transportation Commercial and Industrial (C&I) real estate tax revenue and dedicated Stormwater funds.

### **Description**

BDCD provides professional project management, construction administration and quality control to ensure implementation of CIP building projects in a timely, safe, cost-effective, high quality and environmentally sensitive manner. In addition, BDCD provides the coordination and negotiations for major PPP and joint infrastructure developments; and for associated major real estate transactions.

Major areas of responsibility of BDCD in the implantation of the CIP program include:

- Project Development;
- Project Planning and Land Needs;
- Architectural Consultant Selection, Negotiation and Award;
- Schematic Design (15 percent Design Complete);
- Design Development (30 percent Design);
- Value Engineering;
- Construction Documents (100 percent Design);
- Permits;
- Bidding;
- Construction Management; and,
- Project Warranty.

Other Major Responsibilities:

- Implementation of best practices as recognized by the spring 2015 Office of Financial and Program Auditors report citing BDCD's compliance with industry standards.
- Preparation of budget submissions for Capital Project requirements.
- Collaboration with the Department of Management and Budget (DMB) and Department of Planning and Zoning (DPZ) in the preparation of the Annual Capital Improvement Program for all Capital Projects, including future year project estimates and prioritization.

# Office of Capital Facilities

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- Managing capital project cash flow projections.
- Development and maintenance of design standards for County building projects; Guidelines for architects and engineers, and design standards for fire stations, police stations, libraries and parking garages.
- Development and maintenance of standard operating procedures; Project Management Guide, Construction Management Guide, PPP standards, and contracting procedures.
- Administration of BDCD quality assurance and safety programs.
- Implementation BOS-mandated policies such as Value Engineering and Sustainable Development (LEED), as well as Energy Modeling and Lessons Learned program.
- Preparation of regular project status reports for customers, public, BOS and senior County management.
- Management and accounting for contracts including negotiation of changes in contract scope, including change orders.
- Negotiation of PPP and joint development real estate terms, shared infrastructure development agreements, lease terms, and ongoing operations and maintenance agreements.

BDCD staff provides the overall project management and construction management for CIP building projects in all of the identified areas. BDCD has direct management responsibility for planning, management and implementation of the County's CIP program for design and construction of major building projects, and major joint development and PPP projects. BDCD utilizes an array of professional design consultants, construction contractors, and associated private sector vendors, in accordance with all applicable procurement regulations, to implement the CIP Program. BDCD collaborates closely with County agencies, stakeholders and senior County management.

## Benefits

Building Design and Construction Division (BDCD) is key to fulfilling the mission of Capital Facilities to provide Fairfax County with quality, cost-effective buildings and infrastructure in a safe, timely and environmentally-sound manner. The BDCD lines of business area provides the following benefits:

- Provide assurance of quality and regulatory compliance for County building projects, including rezonings and land use entitlement, building and site permits and regulatory inspections, VDOT permits/inspections, Virginia Pollutant Discharge Elimination System (VPDES) permits, Storm Water Pollution Prevention (SWPP) plans.
- Provide a centralized area in managing major building projects (SOPs, Lessons Learned, Design Standards, Quality Assurance Processes, Contracting Procedures, Procurement and Accounting), including professional support to other design/construction agencies such as Fairfax County Department of Transportation (FCDOT) Silver Line Garages, Fairfax County Park Authority (FCPA) and Department of Housing and Community Development (Mondloch Place, Hanley Transitional Housing, Lincolnia Senior Center and Lewinsville Center).
- Provide leadership in promoting BOS Environmental Agenda and Sustainable Development Policy, including project certifications under the United States Green Building Council's LEED program, energy efficiency, and low-impact development stormwater management features in Fairfax County.
- Promote a culture of safety awareness for staff and contractors.
- Contribute to the Strategic Plan for Economic Success by maximizing value of BOS owned property, and development potential (tax base) of adjoining properties. Examples include the Wiehle Avenue Transit Oriented Development (TOD), Innovation Center Station TOD, Reston Town Center North joint-redevelopment, and the Merrifield Center joint-development with Inova.
- Proactive project budget and schedule management, and contract administration.

# Office of Capital Facilities

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- Provide regular project reporting and coordination with wide array of stakeholders, including the BOS, senior County management and the community.
- Provide leadership in the preparation of the annual CIP, capital budgets, project funding strategies, and cash flow projections to support cost-effective bond sales.
- Collaborate with the community to assure awareness and support for County building projects, including Virginia Code 2232 Public Use Determinations.
- Support a wide array of County agencies by providing new and upgraded facilities necessary for the delivery of County services at the necessary levels.

## Primary Correlation to County Vision Elements

**Building Livable Spaces:** Provide planning and development for major PPP developments such as Wiehle Avenue-Reston Station, Innovation Center Station, Reston-Town Center North, and Inova-Merrifield Center. Provide design and construction for priority County projects that become prominent facilities in the community. BDCD program has regularly achieved project awards from APWA, County Exceptional Design Awards, National Association of Industrial and Office Properties (NAIOP) and others for outstanding design and construction;

**Practicing Environmental Stewardship:** BDCD developed the BOS Sustainable Development Policy and is the regional leader in implementing this policy for achieving LEED Certification for County building projects. BDCD has a perfect record of meeting this BOS Policy, and has exceeded the policy targets on 73 percent of projects, over the past five years. In addition, BDCD has a successful strategic partnership with the Stormwater Planning Division-DPWES to implement stormwater enhancement projects on County building sites, exceeding minimum regulatory requirements. BDCD also collaborates with Facilities Management Department (FMD) and the County Energy Committee to assure energy efficiency in new capital building projects; and

**Exercising Corporate Stewardship:** BDCD implements award winning, first class facilities in the community, in close collaboration with stakeholders and the local community. BDCD outreaches to the public, and assures compliance with all regulatory requirements. BDCD provides diligent and cost-effective management of capital project budgets using Value Engineering, Quality Control, and proven accounting and contract management processes that have been recognized by the Office of Financial and Program Audit May 2015 Report on Capital Construction Project Costs that recognized the Best Practices implemented by BDCD. BDCD has a 100 percent track record of completing projects within budget over the past five years, and with the support of the BOS, has been able to fund additional projects such as the Woodrow Wilson Library using unused project balances.

## Mandates

While not explicitly mandated, the following program requirements are noted:

- The Capital Improvement Program is required by Article 5 of Section 15.2-2239 of the Code of Virginia;
- Responsible for management and implementation of the Capital Improvement Program (CIP) for major building development and PPP projects as adopted by the BOS;
- All approved CIP building development projects are mandated to meet all applicable federal, state and local regulatory requirements, as well as applicable BOS Policies (Sustainable Development, Value Engineering, etc.); and
- Fulfill external County commitments for delivery of certain projects such as the VDOT Administration Building and VDOT Maintenance Facility at West Ox, Wiehle Avenue Parking Garage, Innovation Center Parking and Herndon Parking Garage.



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Implementation of Capital Projects to support the requirements, service level standards and performance metrics/policies adopted for countywide agencies including: Police Department, Fire and Rescue, Library Administration, Department of Vehicle Services, FCDOT, and DPWES field operations agencies (Stormwater, Solid Waste, Wastewater Collection and Recycling).

## Trends and Challenges

- Aging County infrastructure and limited funding for infrastructure renewal. The majority of current and upcoming projects consist of capital renewal and expansion of aged County facilities such as libraries, fire stations and police stations.
- Urbanization of the County exhibited in the extremely tight sites for new or renovated/expanded, stand-alone facilities such as Bailey's Fire Station, West Ox Animal Shelter, McLean Governmental Center, and the upcoming Franconia Governmental Center and the Pine Ridge-Operations Support Bureau.
- Limited, unencumbered County real estate assets. The County has virtually no buildable sites that are not currently encumbered with an existing facility that would need to be removed or renovated/expanded in order to realize greater development on the site.
- County inventory of older buildings on small sites and challenge of expanding existing buildings on tight sites while also making required site upgrades for environmental compliance. This challenge continues to be exhibited on numerous projects including Bailey's, Jefferson and Lorton Fire Stations; Woodrow Wilson, John Marshall, Pohick, and Tysons Pimmit Libraries; and the Fair Oaks, McLean and the upcoming Franconia Governmental Centers/Police Stations.
- Complexity of design and construction process and increasing regulatory obligations. This includes more rigorous site plan requirements, especially for stormwater management, and increasing stringent challenges with sustainable development certification and energy efficiency, as well as the communications and IT-related systems in new buildings.
- Increasing complexity and cost of meeting more stringent environmental regulations and policies. The next LEED sustainable development certification program will be more challenging and costly to meet under the Board of Supervisors policy.
- Increase in number of projects that require joint public-private or public-public development or real estate agreements such as Wiehle Avenue-Reston Station, Innovation Center Station, Merrifield Center, Providence Community Center, proffered public facilities in Tysons, Reston Town Center North joint-redevelopment, and redevelopment at Bailey's Crossroads and Seven Corners.
- Focus on increasing the development potential and value of County owned real estate assets, and partnering for public facilities through the DPZ proffer system, including numerous real estate exchange agreements and PPP's already noted, and proffered public facilities such as Providence Community Center and Tysons public facilities.
- Increase in more complex and varied funding mechanisms such as EDA bonds, with over \$200 million for Merrifield Center, Providence Community Center and PSHQ and over \$100 million in additional funding proposed for the Innovation Center and Herndon Station Silver Line Garages. The associated contract management and accounting burden increases due to the unique bond terms and accounting/payment processes required.
- TOD and urbanized centers such as Tysons, Merrifield, Reston, Springfield and Bailey's Crossroads/Seven Corners.
- Uncertainty of multi-year capital funding allocations and associated staff resource demands.
- Potential for significant swings in the regional construction industry, resulting in increases in future project costs.

# Office of Capital Facilities

- Renovation and expansion of occupied, 24/7 operational facilities on very tight sites that require phased construction and temporary facilities to maintain ongoing operations. Examples include Fair Oaks Police and Fire Station, West Ox Animal Shelter, McLean Government Center, Herndon Fire Station, and the upcoming Lorton and Jefferson Fire Stations, Pine Ridge-Operations Support Bureau and Franconia Governmental Center.
- Ongoing workload associated with County’s portfolio of aging facilities and infrastructure, the CIP long-term schedule for bond supported projects, regular funding stream for priority FCDOT facilities projects.

## Resources

Category	FY 2014 Actual	FY 2015 Actual	FY 2016 Adopted
<b>LOB #58: Building Design and Construction</b>			
<b>FUNDING</b>			
<u>Expenditures:</u>			
Compensation	\$3,836,169	\$4,069,478	\$3,738,505
Operating Expenses	114,155	102,361	32,747
Work Performed for Others	(2,685,318)	(2,848,635)	(2,536,572)
<b>Total Expenditures</b>	<b>\$1,265,006</b>	<b>\$1,323,204</b>	<b>\$1,234,680</b>
General Fund Revenue	\$0	\$0	\$0
<b>Net Cost/(Savings) to General Fund</b>	<b>\$1,265,006</b>	<b>\$1,323,204</b>	<b>\$1,234,680</b>
<b>POSITIONS</b>			
Authorized Positions/Full-Time Equivalents (FTEs)			
<u>Positions:</u>			
Regular	42 / 42	45 / 45	45 / 45
<b>Total Positions</b>	<b>42 / 42</b>	<b>45 / 45</b>	<b>45 / 45</b>

# Office of Capital Facilities

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## Metrics

Metric Indicator	FY 2013 Actual	FY 2014 Actual	FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
Total CIP Program Workload Value	\$820,736,000	\$1,019,833,000	\$906,004,700	\$841,357,528	\$933,707,850
Total CIP Program Workload Value per FTE	\$20,518,400	\$24,281,738	\$20,133,438	\$18,696,834	\$20,749,063
Sustainable Development Policy Performance	100%	100%	100%	100%	90%
Construction Cost Benchmark	86%	95%	95%	95%	95%
Building Design Customer Satisfaction Survey	4.31	4.34	4.34	4.20	4.20

### **Total CIP Program Workload Value**

This metric measures the total value of project workload that is under active management by BDCD as a trend to reflect that value of work, and as a measure of active CIP project workload.

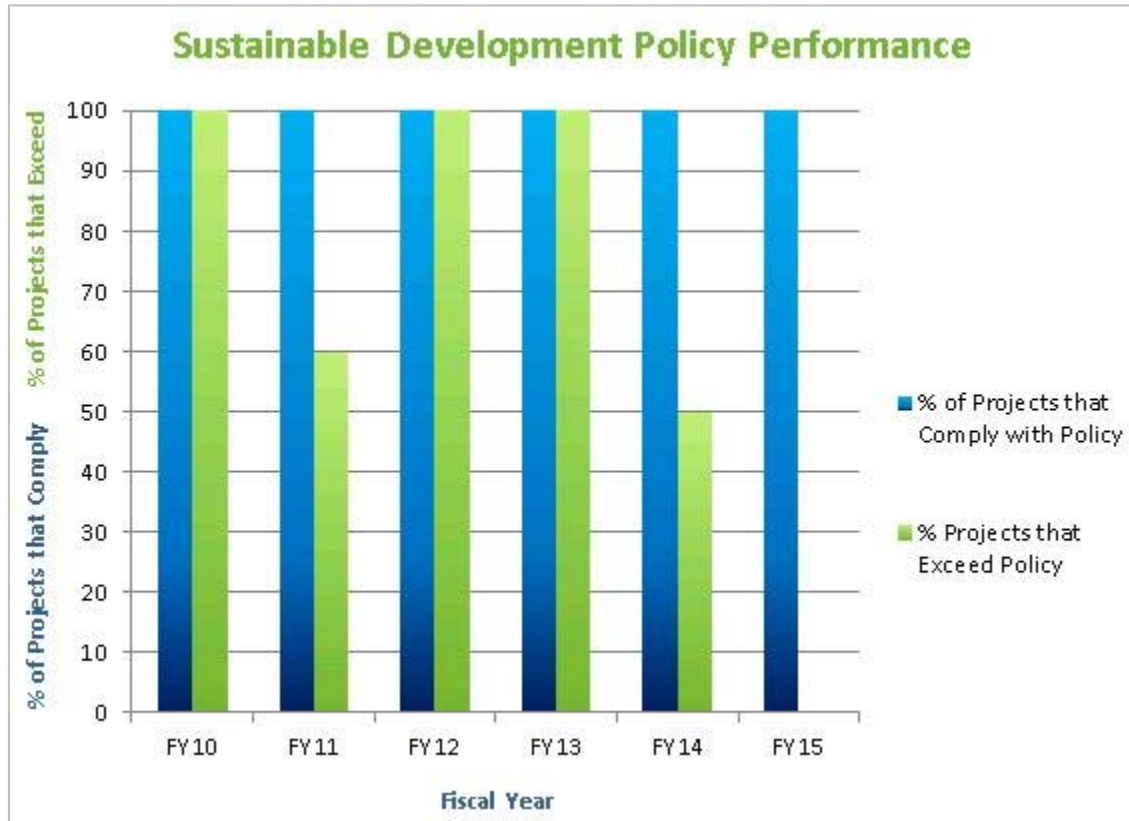
### **Total CIP Program Workload Value per FTE**

This is an efficiency measure calculated as the Total Project Estimate value for all projects that are actively managed by BDCD each year in the planning, design, and construction phases, divided by the total number of approved BDCD merit positions for that fiscal year (date is measured at three month intervals). This metric is important to measure the value of active project workload that is being managed per person to identify the magnitude and the trend of workload being managed per merit position. This metric gauges staff workload levels and staff efficiency.

# Office of Capital Facilities

## **Sustainable Development Policy Performance**

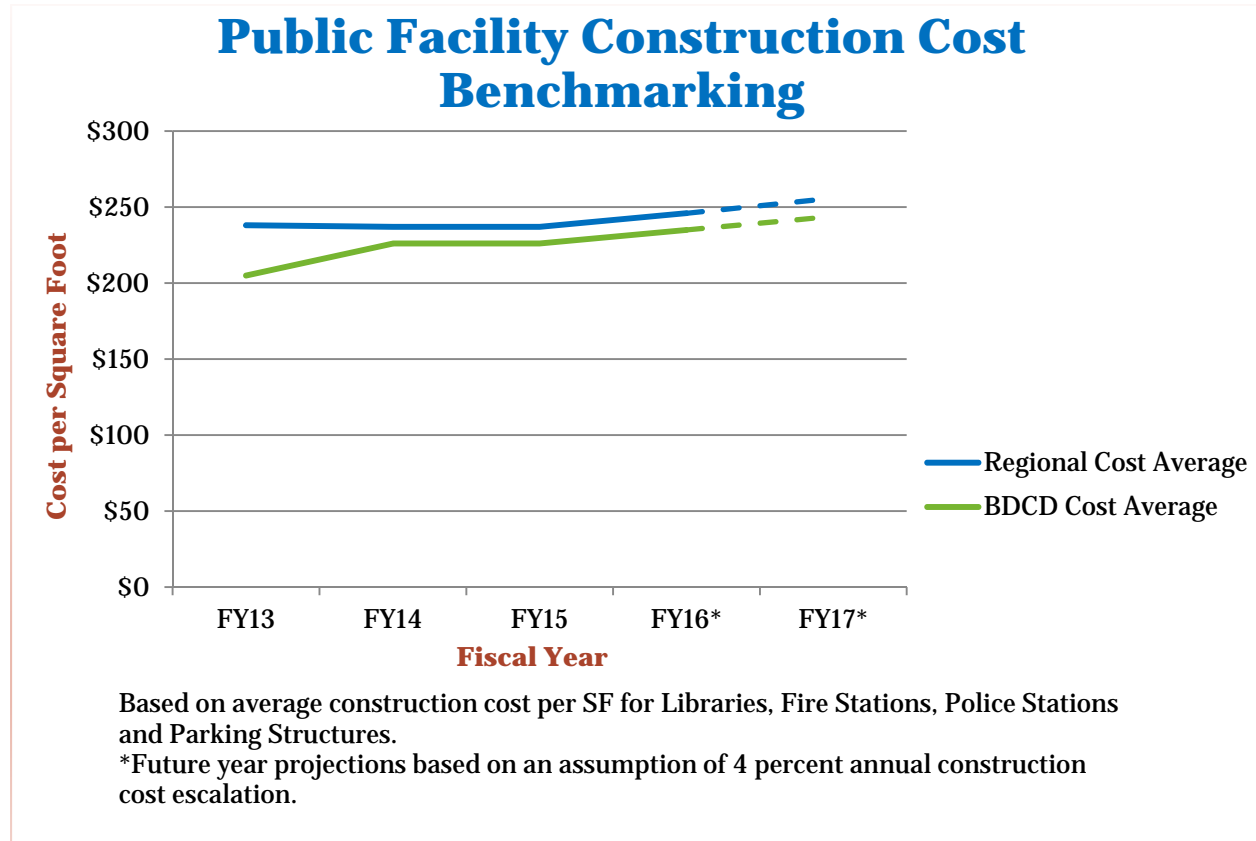
This metric measures BDCD's annual compliance level with the BOS Sustainable Development Policy to gauge the rolling five year average of completed BDCD projects that meet or exceed the BOS Policy for LEED certification. This measure directly reflects BDCD's success level in meeting or exceeding the BOS policy by measuring the percentage of completed projects that achieve the prescribed level of certification under LEED. This program was selected as the standard for the County's environmental/sustainability program for building projects. In FY 2014, there was one project certified, and that one project met the Policy goal. No FY 2015 project will exceed the policy goal.



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## **Construction Cost Benchmark**

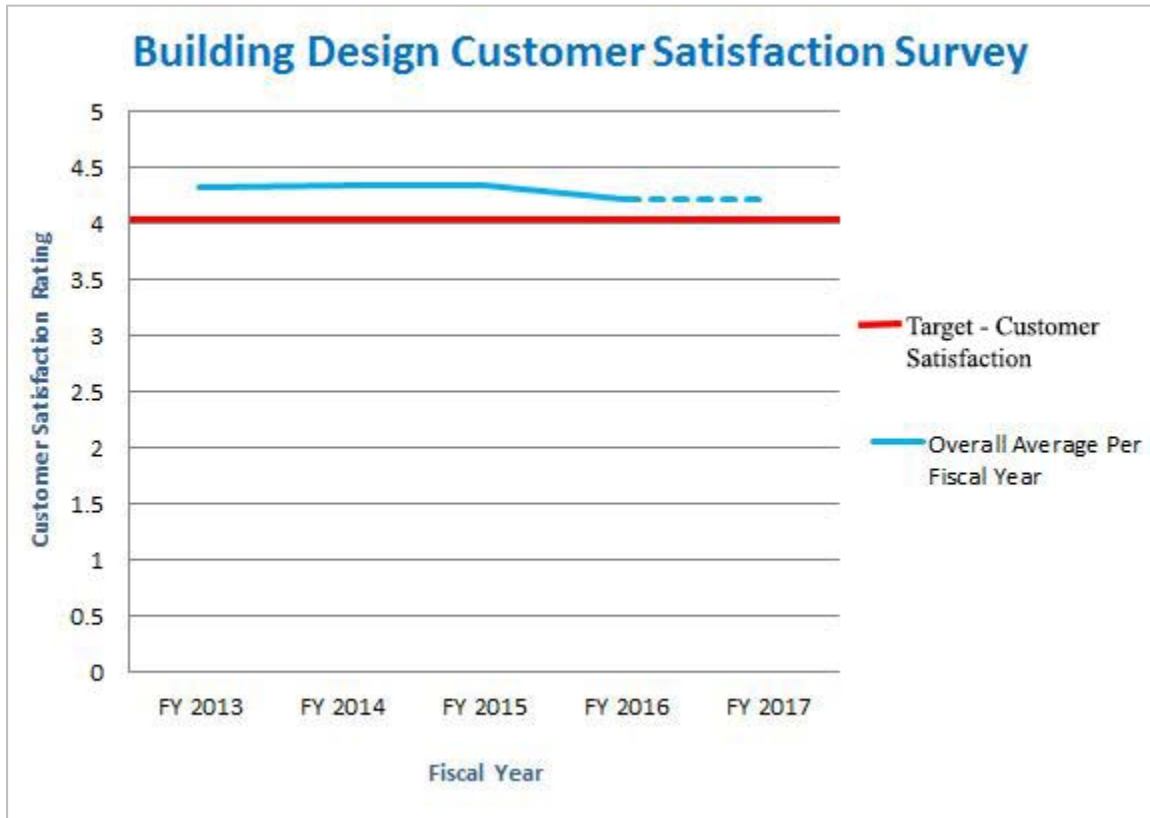
A comparative measure of the average cost per square for typical facilities (Libraries, Fire Stations, Police Stations, and Parking Structures) developed by BDCD, as a percentage to the average cost per square foot of the same facility types developed throughout the Washington Metropolitan and Northern Virginia regions. Benchmark data is compiled based on actual cost for Fairfax County facilities managed by BDCD compared to the average costs for other localities based on information gathered from a variety of sources including Independent Cost Estimating Consultants. This metric is important in measuring BDCD's cost-effectiveness in the construction cost for public projects, relative to the regional benchmark construction cost figures. The BOS Auditors have recently reviewed construction costs and have no recommendations.



# Office of Capital Facilities

## **Building Design Customer Satisfaction Survey**

BDCD conducts a biannual survey to measure the level of satisfaction of the Using Agency and project stakeholders in areas including planning/design, construction, occupancy, and BDCD staff. The survey results are ranked on a scale of 1 (Poor) to 5 (Superior), with a BDCD goal of an average response of 4.0 or higher. Customer satisfaction continues to remain above 4 and this trend is anticipated to continue. BDCD continues to strive to achieve superior customer service quality support on all projects managed by this division. This metric is important to measure the satisfaction level of our BDCD customers and stakeholder agencies with the projects and the process; and is a strong indicator of the level of overall success of the BDCD building development program, including quality of the building product.



LOB #59:

## **UTILITIES DESIGN AND CONSTRUCTION**

### **Purpose**

Utilities Design and Construction Division (UDCD) manages the design and construction of a wide variety of wastewater, stormwater, and transportation infrastructure projects.

### **Description**

UDCD projects include: sanitary sewer upgrades, wastewater pump station rehabilitations, wastewater treatment plant expansions/upgrades, storm drainage improvements, transportation infrastructure projects; road improvements, trails, sidewalks, developer defaults, and bus shelters. UDCD provides professional project management, construction administration and quality control to ensure implementation of CIP projects in a timely, safe, cost-effective, high quality and environmentally sensitive manner.

#### **Wastewater Projects:**

UDCD manages all aspects of design and construction for wastewater collections system and treatment plant projects. In FY 2015, UDCD managed design and construction for wastewater projects totaling over \$43 million in expenditures. Wastewater projects typically include:

- Sanitary sewer replacement/upgrade;
- Pump station rehabilitations;
- Wastewater treatment plant expansions/upgrades; and
- Emergency repair projects.

These projects are part of a robust Capital Improvement Program for significant and long-term upgrades at the Noman M. Cole, Jr. Pollution Control Plant and a growing list of pump stations and sanitary sewer lines that form the wastewater collection system for Fairfax County. For the design phase of a project, UDCD manages the selection of engineering firms, oversees scope development, ensures designs are completed to meet the needs of our customers, identifies required land rights, and obtains all required permits for projects. For the construction phase of a project, UDCD manages the bid advertisement and contract award processes, oversees all aspects of construction contract management to include inspection, testing, code compliance, and project close-out.

#### **Transportation Projects:**

UDCD manages the construction for a variety of transportation improvement projects, and the design for these projects is administered by the FCDOT. UDCD works closely with FCDOT during the design phases to ensure the construction documents are bid-ready. In FY 2015, UDCD totaled over \$49 million for construction expenditures on Transportation projects. Transportation improvement projects typically include:

- Lane widening, turn lane and signalization improvements;
- Pedestrian improvements such as trails, sidewalks, and crossing;
- Commercial revitalization and streetscape improvements projects;
- Roadway re-alignment projects;
- Bicycle and multi-use trails; and,
- Traffic calming.

# Office of Capital Facilities

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During the construction phase of a project, UDCD manages the bid advertisement and contract award processes, oversees all aspects of construction contract management to include inspection, testing, code compliance, and project close-out.

## Stormwater Projects:

UDCD manages the construction for a variety of stormwater improvement projects. The design for these projects is administered by the Stormwater Planning Division of DPWES. UDCD works closely with Stormwater Planning Division during the design phase to ensure the construction documents are bid ready. In FY 2015, UDCD totaled over \$21 million for construction expenditures on Stormwater projects. Stormwater improvement projects typically include:

- Stream restoration pond retrofits and upgrades;
- Bio-retention ponds;
- Storm sewer pipe replacement and upgrades;
- Dam rehabilitation/upgrades; and,
- Lake dredging.

For the construction phase of a project, UDCD manages the bid advertisement and contract award processes, oversees all aspects of construction contract management to include inspection, testing, code compliance, and project close-out.

## Developer Default Projects:

UDCD manages the developer default program whereby a developer has been unable to complete a permitted project and the project is turned over to the County to complete. In these instances, Land Development Services, Department of Public Works and Environmental Services, coordinates with the County Attorney's office to declare a project in default and cash-in the developer's bond for the project. The bond money is transferred to UDCD and used to complete the project. UDCD determines the scope for the incomplete items, contracts with design firms as needed, obtains price quotes from vendors, awards contracts and oversees all aspects of construction to include inspection, testing, code compliance, and project close-out. Once all remaining work is complete, UDCD works to turn the completed project over to the Virginia Department of Transportation (VDOT) or other entities as needed for long-term maintenance and operation.

The overall UDCD LOB is performed with 67/67.0 FTEs and headed by a Division Director position.

## **Benefits**

Utility Design and Construction is key to fulfilling the mission of Capital Facilities to provide Fairfax County with quality, cost-effective buildings and infrastructure in a safe, timely and environmentally-sound manner. The design and construction managed by UDCD provides vital benefits to the citizens of Fairfax County that have a direct link to the County's Vision Elements. The UDCD LOB provides the following benefits:

- Implement CIP programs for wastewater, stormwater, transportation, and developer default projects in a timely, safe, cost-effective, high quality and environmentally sensitive manner.
- Provide assurance of quality and regulatory compliance for all projects.
- Provide a centralized area of professional expertise in managing the vast majority of the County's major horizontal infrastructure projects (Standard Operating Procedures (SOPs), lessons learned, design standards, quality assurance processes, procurement and accounting).
- Provide leadership in promoting the Board of Supervisor's Environmental Agenda and Sustainable Development Policy.
- Promote a culture of safety and promote safety awareness for staff and contractors.



# Office of Capital Facilities

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- Contribute to the Strategic Plan for Economic Success Goal 4 by investing in natural and physical infrastructure.
- Professional and proactive project budget and schedule management, and contract administration.
- Provide regular project reporting and coordination with wide array of stakeholders, including the community.
- Provide leadership role in preparation of annual CIP, Capital Budgets, project funding strategies, and cash flow projections.
- Collaborate with the community to assure awareness and support for County infrastructure projects.
- Support a wide array of County agencies by providing new and upgraded facilities necessary for the delivery of County services.

## **Primary Correlation to County Vision Elements**

**Maintaining Safe and Caring Communities:** The wastewater projects implemented by UDCD have a direct link to public health. Fairfax County has a vast wastewater collection system that is aging rapidly. The upgrades and emergency repairs on these aging sanitary sewer lines protect the public health and improve water quality for the residents. In addition, Transportation projects include improvements such as curb cut ramps, pedestrian crossings, and bus shelters to provide safe access to mass transit for all sectors of the County's population.

**Building Livable Spaces:** The infrastructure to collect and treat wastewater has a direct link residential and commercial development across the County. Additionally, the transportation improvements constructed by UDCD also play an important role in providing livable spaces for residents.

**Connecting People with Places:** The transportation improvements constructed by UDCD allow people to drive, walk, bicycle, and have safe access to public transportation to connect with places in the County and beyond. Many transportation projects (i.e. Lorton Road Realignment) provide trails and sidewalks, bicycle lanes, and bus stops in urbanized areas of the County.

**Maintaining Healthy Economies:** By connecting people and places UDCD projects have a direct link to vibrant economies as residents are able to travel to business destinations with more predictable travel times.

**Practicing Environmental Stewardship:** Stream restoration projects (i.e., Wakefield Park Stream Restoration and Huntsman Lake Dredging projects) and other stormwater projects provide critical water quality benefits to streams, rivers and the Chesapeake Bay. Similarly, sanitary sewer collection and treatment system projects provide additional water quality and environmental improvements for the County. Additionally, many roadway improvements are targeted at public mass transportation and increased pedestrian/bicycle traffic which all help reduce the carbon footprint for the County.

**Creating a Culture of Engagement:** Input from residents is an essential part of the capital projects program. Public meetings are routinely conducted through the District Supervisor's offices to explain all aspects of proposed projects and seek input from residents that may modify elements of a project. Additionally, information is provided to residents during the course of project implementation.

# Office of Capital Facilities

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## Mandates

The projects implemented by UDCD work to support compliance with:

- UDCD implements stormwater projects that are specifically designed to improve stormwater quality across the County per mandates under the MS4 permit.
- Air and water quality permits at the Noman M. Cole, Jr. Pollution Control Plant. UDCD manages the design and construction of projects that are specifically implemented to meet current and future air and plant effluent quality permit limits.
- Many UDCD projects involve the upgrade of sanitary sewer infrastructure that ultimately reduce sanitary sewer overflows (SSOs) across the County. SSOs are closely scrutinized and impact the County's MS4 permit requirements.
- Emergency sanitary sewer repairs are implemented to repair failed infrastructure and to remediate SSOs.
- Inspectors are charged with compliance on erosion and sediment controls on each of the projects implemented in Capital Facilities. UDCD has 10 full-time site inspectors that are trained to enforce state erosion and sediment control regulations. These inspectors visit hundreds of project sites each year to enforce these requirements.

## Trends and Challenges

- Aging County Infrastructure;
- Urbanization of the County;
- Increasing size and complexity of projects and limited staff and resources;
- Increase in number and size of projects;
- Complexity of design and construction processes and permits;
- Increasing and constantly changing environmental requirements for air and water quality;
- Transit Oriented Development and urbanized centers such as Tysons, Merrifield, Reston, Springfield and Bailey's/Seven Corners;
- Uncertainty of multi-year capital funding allocations and associated staff resource demands;
- Potential for significant swing in the regional construction industry that would lead to an increase in cost of future projects;
- Increasing use of Alternative Delivery Methods for project, design/build, construction management at risk, job order contracts; and,
- Increased emphasis on rehabilitation and upgrade of aging sanitary sewer system infrastructure.

# Office of Capital Facilities

## Resources

Category	FY 2014 Actual	FY 2015 Actual	FY 2016 Adopted
<b>LOB #59: Utilities Design and Construction</b>			
<b>FUNDING</b>			
<u>Expenditures:</u>			
Compensation	\$4,864,901	\$4,976,654	\$5,445,168
Operating Expenses	114,703	96,160	41,471
Work Performed for Others	(3,433,419)	(3,652,061)	(3,661,617)
<b>Total Expenditures</b>	<b>\$1,546,185</b>	<b>\$1,420,753</b>	<b>\$1,825,022</b>
General Fund Revenue	\$0	\$0	\$0
<b>Net Cost/(Savings) to General Fund</b>	<b>\$1,546,185</b>	<b>\$1,420,753</b>	<b>\$1,825,022</b>
<b>POSITIONS</b>			
<i>Authorized Positions/Full-Time Equivalents (FTEs)</i>			
<u>Positions:</u>			
Regular	67 / 67	67 / 67	67 / 67
<b>Total Positions</b>	<b>67 / 67</b>	<b>67 / 67</b>	<b>67 / 67</b>

## Metrics

Metric Indicator	FY 2013 Actual	FY 2014 Actual	FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
Total Construction Value of Completed Projects or Projects in Construction per Fiscal Year	NA	NA	\$154,270,000	\$190,430,888	\$202,009,086
Total expenditure for design and construction per fiscal year	\$93,288,739	\$106,500,984	\$111,376,480	\$139,484,991	\$147,979,241
Total expenditure for design and construction per staff person	\$1,392,369	\$1,589,567	\$1,662,336	\$2,081,886	\$2,208,645
Customer Service Survey	NA	85%	NA	90%	NA

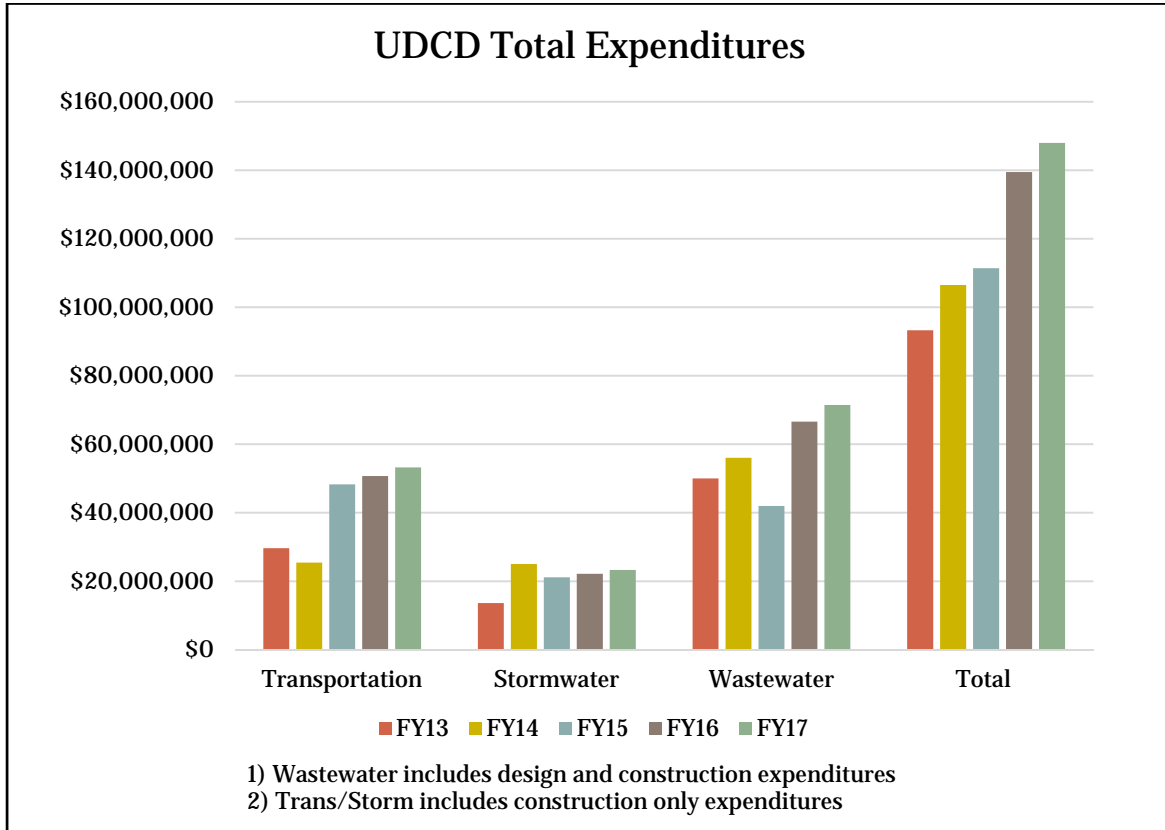
### **Total Construction Value of Projects per Fiscal Year**

This measure tracks the construction value of all active construction projects in a given fiscal year. The construction value is a reflection of the overall workload managed by this LOB. FY 2015 is the first year of tracking this number so historical data from previous years is not available. With project growth in all sectors of this LOB (wastewater, transportation, and stormwater), the workload and output by the UDCD LOB is anticipated to continue to increase. Construction value of projects has grown from \$93 million in FY 2013 to \$147.9 million estimated for FY 2017.

## Office of Capital Facilities

### **Total Expenditure per fiscal year**

This output measure provides a comparison of total expenditures by UDC since FY 2013. The expenditures are a reflection of the overall workload managed by UDC. With project growth in all sectors of this LOB (wastewater, transportation, stormwater), the workload managed by the UDC is anticipated to continue to increase as project growth continues from all sectors.



### **Total Expenditure per FTE**

This efficiency measure provides a comparison of total expenditures per FTE by this LOB during a given fiscal year. Total expenditures are divided by the total number of full-time merit employees in UDCD. Project growth continues in all sectors of this LOB (wastewater, transportation, stormwater). Contract dollars managed are increasing with project growth, resulting in increases in the dollar level managed per FTE but also complexity of project type.

<b>UDCD Expenditures</b>					
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Total Expenditures	\$93,288,739	\$106,500,984	\$111,376,480	\$139,484,991	\$147,979,241
Expenditure \$/ FTE	\$1,392,369	\$1,589,567	\$1,662,336	\$2,081,866	\$2,208,645
FTE's	67	67	67	67	67

### **Customer Service Survey**

UDCD conducts a customer service survey bi-annually to gauge the level of satisfaction for the services the agency provides. The target goal is 90 percent of responses of satisfactory or above. FY 2014 was the first year of this survey and results show an 85 percent customer service satisfaction. Efforts at all levels of the organization are ongoing to work toward achieving the 90 percent goal when the next survey is conducted in FY 2016.

# Office of Capital Facilities

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LOB #60:

## **STREETLIGHTS (INCLUDING UTILITIES)**

### **Purpose**

Streetlights (Including Utilities) manages the Streetlight Program, including monitoring the utility expenditures to ensure streetlight issues are adequately and fairly addressed across the County and to ensure timely/accurate utility payments are made to Dominion Virginia Power (DVP) and Northern Virginia Electric Cooperative (NOVEC). Streetlight staff continues to seek upgrades to gain efficient and environmentally-sound lighting systems. The Streetlight Program is required to ensure installation of streetlights as required by the County's Public Facilities Manual (PFM) and as part of various projects constructed throughout the County. This program also handles the coordination of streetlight issues with the County Board of Supervisors' offices and residents and is the main point of contact for issues of streetlight repair and damage, outages, etc.

### **Description**

The Streetlight Program manages utility expenditures totaling \$8.2 million (4/4.0 FTE positions).

- Utility bills are paid and managed by Capital Facilities for streetlights countywide;
- New installations occur from private development activities, public development (County facilities), roadway projects, and select multiuse trails. The streetlight program works closely with DVP and NOVEC. These utility companies are responsible for streetlight installation and maintenance and the County streetlight program coordinates the work that needs to be performed; and,
- The Streetlight program manages the replacement of any non-standard special streetlight poles, fixtures and foundations due to damage.

The Streetlight program works closely with the Fairfax County Utility Coordinator and other County agencies to negotiate the Virginia Energy Purchasing Governmental Association (VEPGA) contract.

- Ensures streetlight issues are adequately and fairly addressed for utility billings.
- The Streetlight Program ensures the County adheres to the established contract which includes (a) Fuel Charge Rider A (fuel rate), (b) other applicable Riders, (c) new technology lighting schedules (i.e. LED lighting rates), (d) Terms and Conditions for repairs and maintenance, (e) responsibility for obtaining permits and easements, and (e) timelines on cost estimates and installation and construction schedules.
- The Streetlight Program staff works to ensure any price escalations for the fuel factor rate, the type of lights installed, and general contract rate increases are fair and reasonable.

The Streetlight Program reviews every development plan for the planning of streetlights and works closely with the BOS and citizens on streetlight issues.

- The Streetlight Program staff reviews all countywide streetlight installations; installations increase with the expansion of developments and roadway projects across the County.
- Provides expertise and guidance to developers on streetlight installations.
- Serves as the intermediary between DVP/NOVEC and private developers.
- Reviews development plans associated with greater urbanization and TOD. Streetlight requirements and designs are evaluated for select high volume walkways and bike trails as seen within the Tysons Corner urban redevelopment area. Illumination levels and photometrics are also

# Office of Capital Facilities

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evaluated to ensure safety of the residents and communities for walkers, school children at bus stops, and crime deterrence. Provides a resource for the resolution of resident streetlight complaints and for streetlight concerns and suggestions.

The Streetlight Program further seeks environmentally-sound lighting options and seeks to install lighting that is cost beneficial and environmentally friendly.

- The Dim Bulb Program provides for upgrading of existing lights, typically older Mercury Vapor (MV) source lights. Numerous MV source lights have depreciated in effective lighting distribution and are replaced with more efficient high pressure sodium vapor (HPSV) source lights. The monthly utility rate is less with similar HPSV light than the MV light. The VEPGA contract allows for a low flat rate conversion fee for changing MV to HPSV.

## Benefits

- Streetlights staff provide coordinated management of the County streetlight system to ensure consistency in lighting approach, conformance with lighting standards and prompt resolution of lighting issues.
- Streetlights enhance vehicular and pedestrian safety; deter crime deterrence, and reduce nighttime crashes.
- Streetlights aid in nighttime vehicular navigation. A well-lit intersection provides a safe environment for all vehicular movements. In addition, a well-lit intersection will allow improved visibility for oncoming motorists to better see pedestrians as well to allow the pedestrians a well-lit path to cross the roadway.
- Fairfax County adheres to ANSI/IESNA RP-8 (American National Standards Institute/Illuminating Society of North America) Standard Practices. The benefit of utilizing standard practices is to encourage good consistent lighting performance for roadways and pedestrian areas throughout the County, minimize dark spots and limit unwanted glare to the motorist. The RP-8 enhances design standards that encourage night time vehicular and pedestrian safety.
- Reduce nighttime crime incidents. Improved lighting deters potential offenders by increasing the risk that they can be seen committing a crime. Police can enforce crime prevention better at night when there is improved visibility. First responders are better protected at night under lit roadways. Children required to walk to school and events during dark hours are safer when walking along roadways that have well lit roadways and pedestrian areas.

The program provides an important review of lighting as urbanization continues to grow, working closely with the development community. Lighting is becoming more important in and around dense development, including transit oriented development (TOD) areas.

## Mandates

In compliance with the Fairfax County Public Facilities Manual (PFM), all developers are required to provide streetlights along the frontage of their site. Capital Facilities streetlight staff provides the review of the developer streetlight plans to ensure compliance with the PFM.

## Trends and Challenges

- Utilization of LED technology provides energy efficient white light. Lesser energy inefficient streetlights such as MV emits a bluish tint color and HPSV emits a yellowish tint color. The current challenge is that the cost of LED lighting technology is still at a premium. Plus, LED lights still do

# Office of Capital Facilities

not currently have the lumens output (photometrics) required to properly light wider major roadways.

- Conversion of MV streetlights to HPSV streetlights. The United States Congress Energy Policy Act of 2005, effective January 1, 2008, mandated that the manufacturing and importation of Mercury Vapor ballasts (a key MV streetlight component) will no longer be permitted. No additional MV streetlights are being installed in the County. However, there are 21,931 existing MV streetlights countywide. Ideally, these lights should be converted to the more efficient and effective HPSV lights. The current VEPGA contract allows a flat rate conversion of \$149 per light; therefore, the replacement of 21,931 lights would cost the County \$3,267,719. Funding is not available for this effort. As existing MV ballasts malfunction, they are being replaced on a case-by-case basis with HPSV ballasts.
- The demand for decorative streetlights in new revitalized urban areas such as Tysons Corner has become a challenge since these lights are not a standard product offered by the VEPGA contract. Accordingly, a cost premium is required for decorative, non-standard lights. Decorative streetlight products can be used per VEPGA contract, but Dominion Virginia Power must approve the product and Fairfax County must store replacement products (10 percent of total non-standard inventory).
- Fairfax County has begun installing pedestrian lighting at select locations within Tysons. The DVP product offering is extremely limited for pedestrian lighting. In addition, DVP generally does not maintain pedestrian lighting.

Recently, there has been a new trend that is still being evaluated regarding the placement of Digital Antenna Systems (DAS) on streetlight poles. The mobile device industry has recognized the streetlight pole as a vehicle to secure small antennas to increase mobile signal strength and avoid the use of standalone monopoles. In some instances, a full streetlight pole and streetlight replacement using a non-standard proprietary pole and light has been requested. Discussion with DVP, DPWES and DPZ is ongoing to determine how to address this emerging issue.

## Resources

Category	FY 2014 Actual	FY 2015 Actual	FY 2016 Adopted
<b>LOB #60: Streetlights (including Utilities)</b>			
<b>FUNDING</b>			
<u>Expenditures:</u>			
Compensation	\$402,155	\$402,154	\$0
Operating Expenses	7,833,659	7,945,253	8,670,613
<b>Total Expenditures</b>	<b>\$8,235,814</b>	<b>\$8,347,407</b>	<b>\$8,670,613</b>
General Fund Revenue	\$0	\$0	\$0
<b>Net Cost/(Savings) to General Fund</b>	<b>\$8,235,814</b>	<b>\$8,347,407</b>	<b>\$8,670,613</b>
<b>POSITIONS</b>			
Authorized Positions/Full-Time Equivalents (FTEs)			
<u>Positions:</u>			
Regular	3 / 3	4 / 4	4 / 4
<b>Total Positions</b>	<b>3 / 3</b>	<b>4 / 4</b>	<b>4 / 4</b>

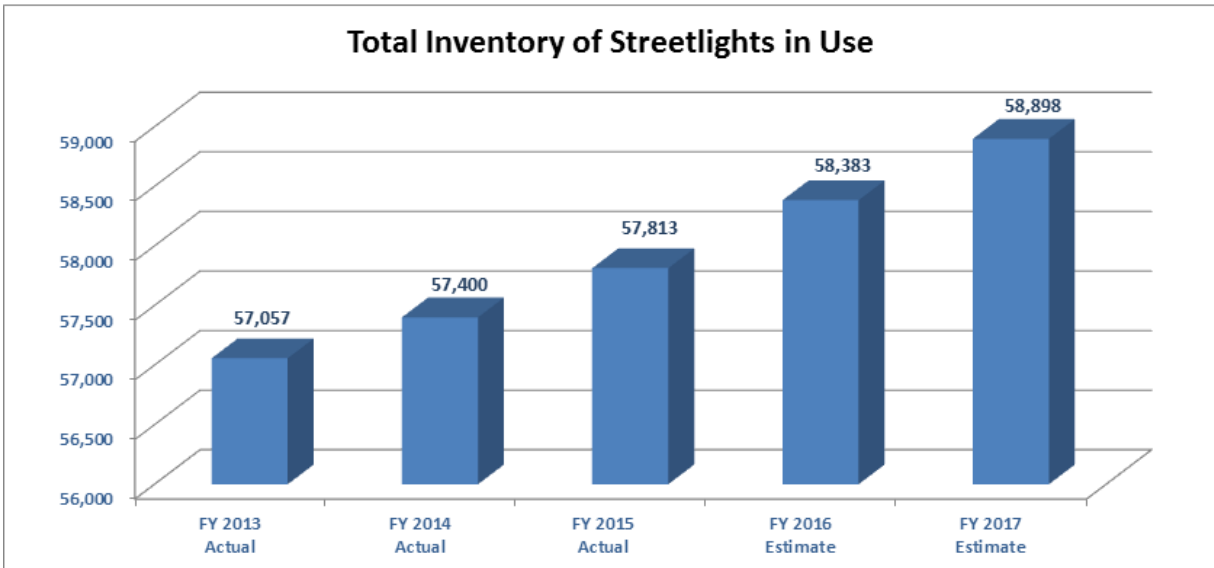
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## Metrics

Metric Indicator	FY 2013 Actual	FY 2014 Actual	FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
Total Inventory of Streetlights in Use	57,057	57,400	57,813	58,383	58,898
Total Annual Utility Cost of Streetlights	\$8,142,874	\$8,235,813	\$8,347,407	\$8,564,351	\$8,787,858
Cost per Streetlight	\$143	\$143	\$144	\$147	\$149
Percent of increase in inventory	0.50%	1%	1%	2%	2%

### **Total Inventory of Streetlights in Use**

Total Inventory of Streetlights continues to increase each year with development activity across the County. Increases are primarily due to streetlights installed under the Developer Streetlight Program whereby developers are required to provide streetlights along the frontages of their sites in accordance with the Public Facilities Manual (PFM) requirements. In addition, a limited number of lights are added based on requests from residents through the Dim Bulb Streetlight Program and Board of Supervisor's request. Finally, streetlights are added to the inventory due to the completion of various County projects. Inventory estimates are projected to increase in FY 2016 and FY 2017 based on continued development primarily in the Tysons and Reston areas of the County.

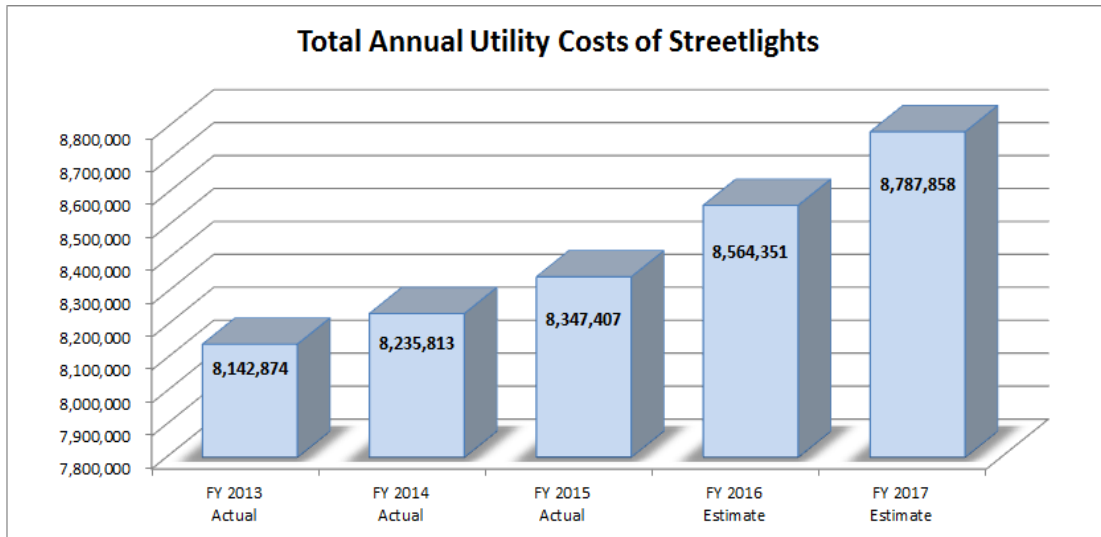




# Office of Capital Facilities

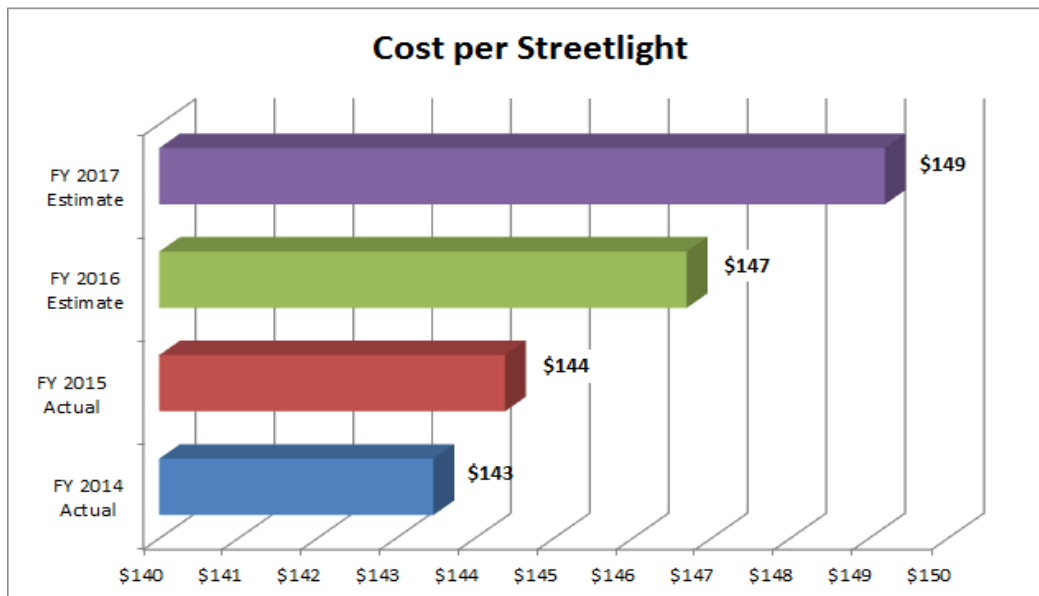
## **Total Annual Utility Cost of Streetlights**

The Total Annual Utility Costs of Streetlights continue to rise as inventory is added each year. The majority of streetlights added each year is primarily driven by private development. Although, there has been a decrease in fuel rate, VEPGA Rider A, other smaller VEPGA Riders continue to increase which also contributes to the increase in the overall utility costs. The projections for FY 2016 and FY 2017 assume fuel costs remain relatively consistent. The graphic also reflects a steady increase in workload for the Streetlight Program staff as the inventory grows.



## **Cost per Streetlight**

Cost per streetlight has escalated slightly from \$143 per light to \$144 per light and this is anticipated to increase primarily because of growing use of non-standard decorative light fixtures in dense urban centers (Tysons) as the County grows into a more urban-type environment.



## **Percent of increase in inventory**

The information presented in the previous Metrics table demonstrates increased streetlight installations are anticipated associated with development activity. Continued development in Tysons Corner, Reston, and western areas of the County has fueled the growth in streetlight inventory. Additionally, urbanization is now driving a need for increased pedestrian lighting particularly near transit-oriented development areas (near the Silver Line).