

**DEPARTMENT OF  
ENGINEERING,  
PUBLIC WORKS & FACILITIES  
MANAGEMENT**

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**2016 Budget Presentation**

**ENGINEERING, PUBLIC WORKS & FACILITIES MANAGEMENT-  
DIRECTOR'S OFFICE**

<b>Description</b>	<b>2015 Adopted Budget</b>	<b>2015 Modified Budget</b>	<b>2015 Expenditures</b>	<b>2016 Budget Request</b>
Salaries	31,651	31,651	31,029.70	34,483
Other Expenses	22,000	22,000	19,725.08	22,000
<b>Total</b>	<b>53,651</b>	<b>53,651</b>	<b>50,754.78</b>	<b>56,483</b>

# 2015 ACCOMPLISHMENTS

## DIVISION OF ENGINEERING

### DIVISION OF ENGINEERING

The Division of Engineering continues to *accomplish more with less* by having consultants assume more responsibility for project coordination and quality assurance. The performance of the Division's consultants has been very good and project design costs have in some cases been reduced as a result of fewer layers of review. The implementation of the Cartegraph Asset Management system database has allowed for management control of large amounts of infrastructure information. The division applies for and receives grants for design and construction of projects.

### Bureau of Engineering

The following projects were designed and/or constructed in 2015.

- Nineteen Traffic Signal Projects
- Sixteen Bridge Projects
- Fifteen Park Projects
- Two Facility Projects
- Two Dam Projects
- Resurface Eighteen Miles of County Road Projects
- Twelve Environmental Remediation Projects

Other accomplishments include:

- Obtain \$7 million in grants for Transportation Projects
- Review 110 Site Plans for Union County Planning Board
- Responded to over 300 Opra Requests
- Participate in USACE Rahway River Flood Control Study
- Participate in the Morses Creek Flood Control Commission
- Inspect Municipal Infrastructure Projects funded by Freeholder Grants

# 2015 ACCOMPLISHMENTS

## DIVISION OF ENGINEERING

### **Bureau of GIS**

GIS website upgrade and implementation  
Build GIS Data for School Crisis Mitigation Plans  
Board of Election Ward and District Updates  
Public and Private school Updates  
Drug Free Zone Map Updates and Publish to Website for Law Enforcement  
Implement new Pictometry Flight Data for Law Enforcement  
Update 150,000 Parcels throughout the County  
Digitized 4500 storm sewer pipes and 4300 catch basins in GIS  
Build Cartegraph Reports for Budgeting, Cost, Complaint, and Asset Tracking  
Online Drug Free Zone Maps  
Build Tree Canopy Layer throughout County Parks (Ongoing)  
Create Updated County Park Maps (Ongoing)  
Build Police station layer throughout County  
Geocode citizens with needs data for OEM GIS website.  
Create Galloping Hill Golf Course Path Resurfacing Maps  
2015 Bio-Blitz Maps  
Categraph GIS Component Build (Facility Floors, Playgrounds, etc.)  
Completed a massive cleanup of the Cartegraph system database  
Digitize County Outfalls and develop an Inspection System  
Server Backup & Maintenance  
Share GIS Data with Municipalities and Consultants as Needed  
Fulfill regular GIS Data and Map Requests  
Geocode 2015 voting Polls data for mobile election app integration  
Support Services in GIS, Cartegraph, IT, and Prosecutor's Office  
Support majority of IT operation for Public Works and Engineering  
Managed 8 engineering projects  
Manage NJDOT online bridge inventory for engineering  
Repaving project route maps and data analysis reports  
SQL server upgrade 4 servers

# 2015 ACCOMPLISHMENTS

## **Bureau of Traffic Safety & Maintenance**

Departments and bureaus that benefited from our services include: Engineering, Roads & Bridges, Shade Tree, Mosquito Control, County Manager's Office, County Police, Sheriff's Office, County Security, Emergency Management, Environmental Services, Park Maintenance, Parks Golf Courses, Facilities Management, Human Services, Rutgers Cooperative Extension, Cultural and Heritage Affairs, Board of Elections, Runnells Specialized Hospital, Parks & Community Renewal, Motor Vehicles.

Our Functional units have processed the following requests for 2015:

**Sign Shop Unit** – fabricated approx. 500 signs

**Sign Shop Unit** – fabricated approx. 27 vehicle marking sets

**Sign Repair & Installation Unit** – installed/repaired approx. 390 signs and trimmed brush around signs along each County Road.

**Line Striping/Markings Unit** – striped approximately 90 miles of 4-inch road lines

**Line Striping/Markings Unit** – striped 8 parking lots and 30 marking locations

**Data Collections Unit** – performed 16 traffic collections

**GIS/Asset Management Team** – tagged 50 assets

**Survey Team** – performed 7 surveys

**Traffic Studies & Investigations** – studied approximately 9 traffic issues

**Work Zone Traffic Control** – implemented/designed 27 work zone projects

**Traffic Municipal Aide**- the bureau has processed 70 mutual aide requests from the municipalities

The Bureau of Traffic Safety & Maintenance has maintained our **Traffic Information Program** that consists of a page on the County website dedicated to providing the citizens of Union County with up-to-date information on construction, and maintenance projects that impact traffic flow on the County's 174 miles of road, along with 5 brochures designed to educate the public on traffic safety issues. Improvements have been made to the website to enhance its interactive capabilities.

# 2016 INITIATIVES

## DIVISION OF ENGINEERING

### **DIVISION OF ENGINEERING**

The Division will continue to direct the high quality performance of its three bureaus. The Division will implement on going improvements to operating procedures for record management. Our plan is to minimize or eliminate paper files for all Division Operations.

### **Bureau of Engineering**

The following projects are planned to be designed and/or constructed in 2016.

- Ten Traffic Signal Projects
- Fourteen Bridge Projects
- Twenty Park Projects
- Two Facility Projects
- One Dam Projects
- Resurface Twenty Miles of County Road Projects
- Twelve Environmental Remediation Projects

Other initiatives include:

- Obtain grants for Transportation Projects
- Review Site Plans for Union County Planning Board
- Responded to Opra Requests
- Participate in USACE Rahway River Flood Control Study
- Participate in the Morses Creek Flood Control Commission
- Inspect Municipal Infrastructure Projects funded by Freeholder Grants

# 2016 INITIATIVES

## DIVISION OF ENGINEERING

### Bureau of GIS

Update the County Street Map  
Updating CarteGraph Street view database.  
Update Union County Map  
Reprint 25,000 copies  
Fully develop new OEM website  
Create a Mobile website  
Train and give access to all personals  
Upgrade Cartegraph system  
Upgrade GIS website and GIS system  
Updates School and Drug free zone layers  
Digitize trees along the county roads in the county parks  
Update Tree layer  
Create different mowing zones within the park  
Complete digitizing the catch basin layer  
Complete Storm Sewer layer  
Implement Project Management System with auto permitting  
Scan and create digital vault from the boxes in the basement  
Create Municipal Park maps  
Attach and finalize the signal drawings in Cartegraph  
Digitize contaminated sites and cleanup status in Cartegraph  
Collect guard rails and mile markers along the county roads  
Divide Park Crew by responsibilities and Park  
Analyze crime data and create a GIS layer for the low enforcement  
Categorize Airport Buildings and collect more details of various areas  
Implement Boiler permitting system  
Upgrade three servers (SQL, Arc SDE & Arc Map)

Coordinate Pictometry flight and subsequent training  
Coordinate Aerial flight and subsequent image uploading  
Retrain every Cartegraph user by visiting their office or facility  
Help IT incorporate Cartegraph system to their daily workflow  
Locate all cell phone towers within the county  
Locate all underground oil and gas tanks within the county facilities  
Design a system to track and trace all gas tank permits  
Design a system to maintain and manage boiler permits by location  
Attach traffic counts studies in Cartegraph  
Implement online emergency evacuation plans for all schools  
Incorporate interior photos and sensitive documents to each school  
Superimpose floor plans on school imagery for emergency access  
Train and support emergency personal & law enforcement agencies  
Implement Mobile version of the existing GIS website  
Create 100 feet grid system for schools and buildings  
Create 250 feet grid system for Parks and open space  
Create editor extension to coordinate a missing person search by grid  
Train OEM and first responders in using the system  
Coordinate 21 Municipal police training in using the system  
Coordinate and support active simulate incidents in every municipality  
Support all IT operations within Public Works  
Manage 18 Engineering projects from inception to construction  
Conduct regular site visits as part of the engineering projects  
Design a system to track Mosquito test results online  
Update Parks database to incorporate all new parks  
Promote Cartegraph use through out the county

# 2016 INITIATIVES

## Bureau of Traffic Safety & Maintenance

Will continue to assist County Counsel's Office by providing *information and professional consultation* to answer depositions, interrogatories, and provide expert testimony when needed in regard to tort claims and law suits.

Will continue addressing issues that were identified in our survey of *Pedestrian Safety on County Roads*. Additionally the Bureau will continue researching new pedestrian safety

Will continue to improve its *Traffic Information Program* and *Incident Management Initiatives* via the expanded use of portable "Variable Message Board", new safety brochures, and enhanced traffic interruption notification systems. The Bureau will also continue to work with community and professional organizations to further Traffic Safety.

Will continue its **MUTCD Compliance** initiatives addressing the new requirements established by the FHWA.

Will continue compilation of traffic data relative to the *Traffic Data for G.I.S.* project and expand this initiative by adding traffic movements, speed/volume, and crash data for future GIS mapping layers.

Will continue its *General Guide and Warning Signs Upgrades* for roads resurfaced in 2014-2015.

The Bureau's *Sign Shop* and *Line Striping* will continue providing other County divisions and departments with event signage, vehicle lettering and markings, and parking lot striping, and it will be researching new striping materials to enhance safety on the County Road system.

During 2016, the Bureau will continue to provide traffic control and work zone safety for *2016 Road Resurfacing Program*

Will continue to support the local municipalities through *Mutual Aid and Shared Services*.

The Bureau will continue to provide *Work Zone* safety training to other County agencies, departments, and municipalities, and will continue to participate in research Traffic Safety Grants.



## ENGINEERING

Description	2015 Adopted Budget	2015 Modified Budget	2015 Expenditures	2016 Budget Request
Salaries	704,174	704,174	694,956.13	961,329
Overtime	14,000	14,000	20,113.44	24,000
Seasonal	8,000	8,000	5,910.00	8,000
Other Expenses	332,000	332,000	75,554.28	347,400
<b>Total</b>	<b>1,058,174</b>	<b>1,058,174</b>	<b>796,533.85</b>	<b>1,340,729</b>

<b>Request for new positions</b>	2	70,000	County
<b>Request for promotions</b>	2	4,500	County

# 2015 ACCOMPLISHMENTS

## DIVISION OF FACILITIES MANAGEMENT

### Architectural/ Engineering/ Construction Manager Professional Services

County retained Professional Services Consultants in 2015 to assist with Capital Improvement Project specifications, architectural drawings; RFP's and construction compliance monitoring.

### Elizabeth Complex - The Justice Complex Project:

**Phase #2:** Courthouse Rotunda and Tower Elevator project 2/3 complete ; Oriscello Correctional Facility – Kitchen renovations 100% complete;; 48 inmate showers on PODS project 100% complete.

**Phase #3:** Oriscello Correctional Facility – HVAC Rooftop Chiller System was replaced. Installation of approximately 275 surveillance cameras is expected to be completed in late 2015; Interior air ducts cleaned and sanitized in the Pods have been completed.

**The Projects listed in Phase #3 are currently on hold pending full functional status:** Booking and Receiving Control Consoles, Lobby, Visitation area, Control Center, Locker Room reconstruction, Elevator upgrades and Roof replacement. Specifications and drawings have been partially prepared.

### UC Courthouse Tower and Old Annex Building

Develop specifications and project time-line new Security and Camera system upgrade. Project currently on hold until the construction and full usage of the new UC Courthouse, Cherry Street Annex building and employee relocation anticipated in late 2016 or early 2017.

### UC Administration Building

The original outdoor patio was demolished and a new ADA accessible patio was constructed by our Masonry crew. The new area consists of 2,040 total square feet which is nearly twice the size of the previous area and includes new perimeter and planter walls around the existing trees.

### Ralph G. Froehlich Public Safety Building

A secondary/back-up 5-ton Liebert Cooling System was installed in the NOC/Server Room for the 911 Center to prevent the server equipment from overheating and shutting down in the event the existing unit failed.

### Bureau of Administrative Support

Filled 3,151 print/sign/paper requests from November 2014 through October 23, 2015.

Printed 8,641,130 impressions from November 2014 through October 23, 2015.

Printed and assembled an estimated 220+ banners from November 2014 through October 23, 2015.

Invoiced from November 2014 through October 23, 2015, \$73,740.30 to various townships, non-profits and government agencies.

Installation of a direct to board printer thereby eliminating the high cost printing to vinyl and the associated labor for enhanced productivity and final output quality.

Consolidated Sign Shop and Print Services work flow & equipment to increase efficiency and productivity.

Added digital envelope printing to increase turn –around time for smaller projects and save on press materials for shorter runs.

Exploring new efficient automated binding equipment for faster turn-around time and assembly for booklet making.

# 2016 INITIATIVES

## DIVISION OF FACILITIES MANAGEMENT

### Division of Facilities Management

#### Administration Building

Replacement of two (2) of four (4) Air Conditioning units. Both units are expected to be purchased and installed in 2016. Installation of a Kitchen Hood Fire System/Ventless Cooking System to comply with NJ State Fire Code mandates.

#### Architectural/Engineer/Construction Manager Professional Services

County retained Professional Services Consultants in 2016 to assist with capital improvement project specifications, architectural drawings; RFP's and construction compliance monitoring.

#### Cultural & Heritage Affairs

Replacement of all Windows and Shutters.

#### Elizabeth Complex - The Justice Complex Project:

**Phase #3:** Oriscello Correctional Facility - Booking and Receiving Control Consoles, three (3) Inmate Elevator units and the entire Roof are scheduled to be replaced.

#### Engineering and Public Works (DPW) Buildings

Installation of new Emergency Generator Systems in both buildings and a complete Truss and Roof replacement at the Public Works (DPW) building.

#### Motor Vehicle/Print Services

Stucco repairs and exterior renovations to the Storefront and Façade.

#### New Annex Building

Installation of Kitchen Hood Fire System/Ventless Cooking System to comply with NJ State Fire Code mandates.

#### Parks

Continuation of restroom renovations for a minimum of 17 public and employee restrooms located within the UC Parks area, employee work areas and Watchung Stables building. Project completion expected in 2017.

#### Police Academy

Purchase and installation of new Emergency Generator System.

#### UC Courthouse Tower Egress & Fire Upgrade

Project currently on hold until the construction of the new UC Courthouse, Cherry Street Annex building completion and employee relocation anticipated in late 2016 or early 2017.

#### Bureau of Administrative Support

Implement Print Services digital ordering system countywide and to all agencies and non-profit clients.  
Extend the Print Services digital ordering system for use as an email approval system for email being sent to the public.  
Establish a higher rate of customer return and usage of the services provided by the Bureau of Administrative Support.

## FACILITIES MANAGEMENT

Description	2015 Adopted Budget	2015 Modified Budget	2015 Expenditures	2016 Budget Request
Salaries	7,129,863	7,129,863	6,583,242.85	7,298,499
Overtime	247,000	247,000	258,487.62	258,500
Seasonal	-	-	864.00	-
Other Expenses	7,773,050	7,773,050	6,239,706.01	7,773,050
<b>Total</b>	<b>15,149,913</b>	<b>15,149,913</b>	<b>13,082,300.48</b>	<b>15,330,049</b>
<b>Request for new positions</b>		4	160,000	New CH & Bail Reform
<b>Request for promotions</b>		3	4,650	County
<b>Vacancies</b>		8	530,309	County

# 2015 ACCOMPLISHMENTS

## DIVISION OF PUBLIC WORKS

### Bureau of Roads & Bridges

In 2015 the Bureau filled and repaired in excess of 1200 potholes. Minor and major road surface repairs and preventive maintenance were completed throughout the county. Repairs to related infrastructure on county roadways were performed such as sink holes and storm line failures. During the 2014/2015 winter season, snow removal, ice removal, and flood control were performed before, during and after severe weather events. Preventative maintenance and repairs were performed on all Bureau of Roads & Bridges equipment and snow removal equipment. The Bureau provided mutual aid assistance to all municipalities in Union County. Some of the services provided include equipment, personnel, milling, paving of roadways, catch basin and sewer cleaning, street sweeping, curbing repair, and equipment transport.

#### **Work Order Request for 2015**

**Total Tasks (work orders) - 6277**

**Total Labor, Equipment & Material - \$4,944,787.00**

### Bureau of Shade Tree & Conservation

This year the Bureau has concentrated on completing all requests and to date the Bureau has completed over 1000 work orders. The Bureau has continued to remove dead trees along county roads, close to 200 dead trees were removed and 500 trees were trimmed that posed a potential safety or traffic hazard. These trees were mainly identified through requests from the public as well as county personnel. Mutual Aid- the Shade Tree Bureau assisted Summit, Mountainside, Roselle, Union and Garwood just to mention a few, in removing large trees and hanging branches. The Bureau also loaned equipment to assist in their duties. The Bureau addressed concerns of trees in various parks: **Cedar Brook, Warinanco Park, Echo Lake, Oak Ridge Park and Rahway Park.**

### Bureau of Inspections

During 2015 the Bureau issued 504 roads and curb permits, collected \$113,414.50 in permit fees and \$213,119.00 in refundable bond fees, for a total of \$326,534.00. The Bureau provided continuous monitoring of curb installations, and roadway and right-of-way excavations to ensure proper restoration and compliance with county specifications. In addition to Roads & Bridges Inspectors, the Bureau personnel also include the Department's Safety Coordinator, who scheduled safety programs to ensure compliance with Local, Federal and State regulations.

# 2015 ACCOMPLISHMENTS

## DIVISION OF PUBLIC WORKS

### **Bureau of Mosquito Control**

The 2015 mosquito surveillance season began March 1. Early moderate temperatures this spring kept the mosquito population lower in Union County at an average level and a dry summer kept surveillance numbers lower than previous years. This season was monitored by twenty three semi-permanent New Jersey light traps for trends and populations. The portable traps were used to locate the mosquito vectors of West Nile Virus. This bureau handled 378 complaints for 2014-2015. There were 15 separate spraying operations conducted during evening hours to control adult populations of mosquito and in the process 511 sites were targeted. There were 3,091 work orders completed during October, 2014 through October, 2015. This includes the work the inspectors do on a daily basis to control breeding at the source in several locations throughout Union County where standing water cannot be eliminated. The Bureau also incorporated new methods of treatment for Larviciding, both to become even more efficient and to keep resistance under control.

### **Bureau of Heavy Equipment & Truck Repair**

The Bureau repairs all county-owned heavy equipment a large fleet of trucks utilized by the Divisions of Public Works and Park Maintenance.

Repair Work Order	564
Total Cost	\$416,743.00
Hours	4731

These figures include the repair, welding and spreader shops in-house work performed by the Bureau.

### **Bureau of Recycling and Planning**

The of Recycling and Planning continued to host various one-day recycling collection events throughout Union County. Participation in all programs remains high.

Union County continued to assist public entities with shredding their confidential documents; five towns/agencies took advantage of the service.

# 2016 INITIATIVES

## DIVISION OF PUBLIC WORKS

### **Bureau of Roads & Bridges**

As affected by winter conditions roadways, bridges, culverts, parapets, catch basins, manhole, and storm water inlets will be prioritized for in-house repair along with on-going routine maintenance. Bridge maintenance consisting of sidewalk, rail repair and replacement, structural deck repairs, and drainage will be scheduled. General bridge cleaning and clearing under bridge obstructions will continue as required. In-house forces shall respond to priority repairs as recommended through the Division of Engineering. The Bureau's in-house paving program will provide resurfacing to various County facilities prioritized as requested through County departments, divisions, and bureaus along with park paving projects which will be coordinated with the Division of Park Maintenance.

### **Bureau of Shade Tree & Conservation**

The Bureau will continue to maximize all its efforts in completing all work orders and put in place a plan to assist and Departments in need. The Bureau will continue to observe trees throughout the County to identify dangerous or dying trees and their condition to determine which will be in need of trimming or removal due to decay. The Bureau also conducts inspection upon request of the public regarding diseased trees, and takes the necessary protection measures to save the trees. The Bureau makes the determination of which tree may have the potential of being removed based on condition, structural integrity, life expectancy, infestations and diseases. The Bureau will continue to teach the public through the Arbor Day Program about how important it is to save our trees and through the Poetry Contest, which is geared towards school age students.

### **Bureau of Mosquito Control**

The Bureau plans for the upcoming mosquito season by preparing heavy equipment and chain saws to access remote sites that breed mosquitoes. The Bureau utilizes the portable backpack ULV machines that are used to adulticide and be able to target the problem directly in problem areas that are not accessible by trucks. The Bureau is currently looking at aerial spraying as a delivery method of pesticides in marshlands where traditional ground applications is not practical. The Union County Health Officer will be the lead agency for the Zika Virus. The Bureau will continue to the public outreach at educational venues.

### **Bureau of Inspections**

The Bureau will continue to closely monitor all construction, maintenance, and repair being performed on County roads as it pertains to the proper permitting for curbing, road openings, excavations and alterations, and continue to assure compliance with County specifications. The Safety Coordinator will continue to do more training and will continue to assure compliance with Local, Federal, and State regulations. The Bureau's goal will be to try to reduce work related injuries through training.

# 2016 INITIATIVES

## DIVISION OF PUBLIC WORKS

### **Bureau of Heavy Equipment & Truck Repair**

The Bureau of Heavy Equipment is responsible for the repair, maintenance and records for County vehicles. The Bureau will continue to seek efficiencies in operation in order to provide a cost effective solution for the maintenance of County owned trucks and equipment.

### **Bureau of Recycling and Planning**

Enhance and publicize on-line reporting process for annual recycling tonnage reports  
Provide ample opportunity for county residents to participate in various county-wide recycling events.  
With the assistance of a recycling educator, develop and implement a hands on recycling education program for the elementary schools.



**PUBLIC WORKS**

<b>Description</b>	<b>2015 Adopted Budget</b>	<b>2015 Modified Budget</b>	<b>2015 Expenditures</b>	<b>2016 Budget Request</b>
Salaries	2,215,853	2,215,853	2,105,634.26	2,261,076
Overtime	70,000	70,000	141,588.34	70,000
Other Expenses	279,100	279,100	156,069.15	52,600
<b>Total</b>	<b>2,564,953</b>	<b>2,564,953</b>	<b>2,403,291.75</b>	<b>2,383,676</b>
<b>Request for new positions</b>		4	142,492	County
<b>Request for promotions</b>		4	11,000	County
<b>Request for change in hours</b>		1	6,777	from 35 to 40/wk
<b>Vacancies</b>		1	57,413	County
		5	294,589	MV Fines

# Thank You

*Joseph A. Graziano Sr. CPWM Director*

Department of Engineering, Public Works and Facilities  
Management  
County of Union