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DEPARTMENT OF INFRASTRUCTURE ENGINEERING

MEMORANDUM

TO: James Kern, Town Manager

FROM: Jason L. Mammone, P.E., Director of Engineering

DATE: February 6, 2017

SUBJECT: Update of Engineering Department Projects and Activities

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The following is a brief update on some of the projects that the Engineering Department is currently working on and/or involved with:

- **Dedham Square Improvement Project** – *completed* – The Engineering Department served as the Project Manager for the Town and coordinated all aspects of the project and public outreach for the project through various social medias (Facebook, Twitter, Flickr, YouTube and the Dedham Square Improvement Project website). Previously worked with our design consultant to finalize drawings and contract specifications for the project. Coordinated over 40 public hearings to solicit comments regarding the design of the project.

  Construction of the square project was completed in November of 2013. The contractor was under contract until March of 2016 performing the 24 month extended establishment item of the contract for the landscaping that was installed as part of the improvements. An amount of $356,395 of authorized debt unissued for the project was rescinded at the annual Town Meeting in May 2015. Overall, including issued debt for the project that will not be spent, the 6.5 million dollar project was under budget by approximately $400,000.

- **Inflow and Infiltration Project** – *ongoing* – The Engineering Department has been working to reduce inflow and infiltration using an in-house approach to inspect, assess, design, and oversee improvements to the sanitary sewer system. Over the last ten years the Town has inspected 1,571,762 linear feet (298 miles) of sewer main, performed 5,288 manhole inspections, installed 164,479 linear feet (31 miles) of cured-in-place liners, installed 3,248 feet of short liners, installed 121 full-wrap lateral liners, installed 34 top hat lateral liners, cementitiously lined 6,002 vertical feet of manholes, chemically root treated 239,084 linear feet (45 miles) of sewer main, and performed 47,569 linear feet (9 miles) of testing and sealing of joints. To date the project has cost approximately $14.6 million and we estimate that we have conservatively removed 5.5 million gallons per day

(MGD) of inflow & infiltration from the system. In addition, the Town's MWRA sewer assessments have remained stable and our sewer rates have remained unchanged since 2008 as a result of our decreasing flow share. Assuming a no change in flow share scenario, we estimate that Dedham has cumulatively saved $8.6 million over the past ten years as a result of these efforts (See Chart 1).

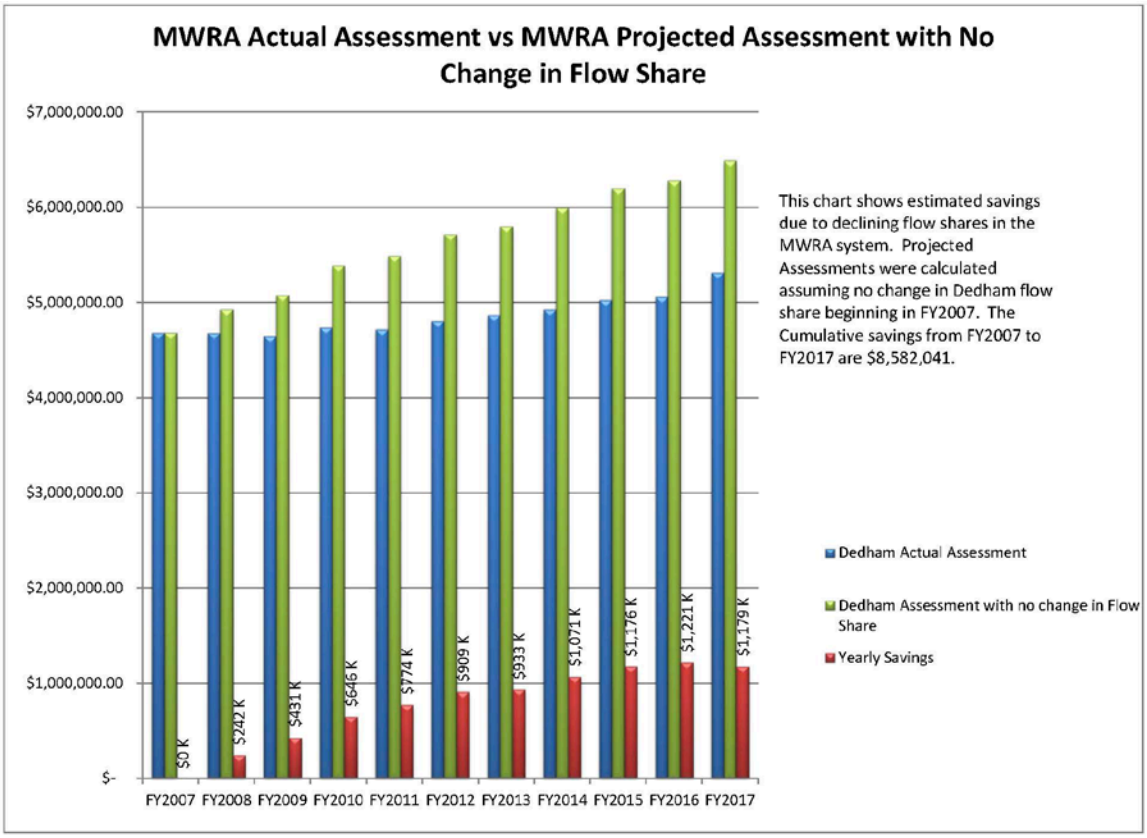

Chart 1

- **2016 I/I Inspection Project** – *completed* – This project involved the inspection of 110,518 linear feet (20.9 miles) of sewer mains and 455 sewer manholes. The project was completed in October. The project cost $142,509.

- **2016 I/I Rehabilitation Project**– *completed* – This project began in February of 2016 and completed on January 6, 2017. The project is designed to remove an estimated 530,000 gallons of infiltration per day primarily through trenchless technologies. The project involves the installation of approximately 32,016 linear feet of cured-in-place pipe (CIPP), the installation of approximately 220 linear feet of short liners, the installation of 116 full-wrap lateral liners and approximately 3,052 vertical feet of sewer manholes cementitiously lined and exterior grouted, as well as testing and sealing of associated joints and services and manhole and sewer line root treatment. The project has cost approximately $1.7 million.

- **2016 Town-Wide Flow Monitoring Project –** *completed* – This project began in February 2016 and was completed in November 2016. The Engineering Department, in conjunction with Weston & Sampson, installed 24 temporary flow meters, 3 temporary groundwater gauges and a rainfall gauge to measure and identify peak inflow and infiltration from the 24 metered areas. The data recovered from this project was compared to the Town-Wide Flow Monitoring Project conducted in 2011. The resultant data indicated that the estimated infiltration has been reduced by approximately 345,000 gallons per day (gpd) since 2011 and that the estimated peak design storm inflow has been reduced by approximately 470,000 gpd. This reduction in I/I can be attributed to the ongoing annual I/I Rehabilitation Projects.

- **2016 Sewer System Hydraulic Flow Model Project –** *completed* – The Engineering Department, in conjunction with Weston & Sampson, conducted a hydraulic flow model on the Town's sewer system to evaluate the current capacity of our major wastewater collector sewers and to identify potential problem areas. MassDEP requires that a municipality's sewer system be analyzed under a 5-year, 24-hour design storm inflow plus average daily dry weather flow scenario to determine if there is a capacity problem that would result in a sanitary sewer overflow. The resultant flow model, utilizing the flow data collected above in the previously mentioned project, indicated that the Town's sewer system should not experience a sanitary sewer overflow under that scenario. This project also helped to develop a 5-year program for inspection, evaluation and rehabilitation of our sewer system based upon available funding.

  It should be noted that as part of this project we also evaluate our system under an extreme scenario consisting of peak sanitary wastewater flows combined with the 5-year, 24-hour peak design storm inflow and peak infiltration. When this scenario was evaluated during our 2011 flow model project, it determined that our system would have 3 sewer manholes that experienced sanitary sewer overflows. Due to our continued sewer rehabilitation work, 2 of the 3 identified sanitary sewer overflows have been eliminated based upon the 2016 flow model.

- **Vincent Road - Illicit Connection Detection & Elimination –** *completed* – One type of illicit connection is when the sewer system connects to the stormwater system, thus discharging sanitary waste into our resource areas. During our TV inspection of the drainage system on Vincent Road as part of our pavement management program, it was discovered that the sewer lateral for the house at 241 Vincent Road was directly connected to the Town's stormwater system. This was most likely performed when the house was built unbeknownst to the Town at the time. The Engineering Department performed the survey and design for the redirection of the sewer lateral into the Town's sewer system. The earthwork was conducted by the Department of Public Works along with our oversight.

- **Massachusetts Avenue Stormwater Utility Design –** *completed* – As part of the Town's ongoing pavement management program, we investigate the stormwater utility located within the right-of-way of roads scheduled to be rehabilitated in a given year. TV inspections of the stormwater utility on Mass Ave indicated that the system was in disrepair and significant improvements would need to be completed prior to repaving the road. The stormwater utility within the dead end section of Mass Ave. also had a history of not working properly due to the incorrect placement of catch basin structures and

undersized pipes. We conducted a full survey of the utility within this area and redesigned the stormwater utility to properly capture and transport the stormwater through the system. The redesign was done completely in-house.

- **Liana Estates Subdivision** – *ongoing* – In recent history, most newly proposed subdivisions that are reviewed by the Planning Board seek waivers and propose to be developed as private ways. The developer for the Liana Estates subdivision located off of East Street proposed to construct a roadway that meets Town Standards in hopes that it would be accepted by the Town as a Public Way. The major obstacle in doing so was the cost associated with hiring a third party engineer to perform the required inspections of all earthwork operations within the right-of-way to be certain that the work was performed to Town Standards. Realizing the importance of having this roadway constructed to Town Standards and accepted as a Public Way, the Engineering Department along with the Public Works Department offered to perform all of the required inspections, with in-house staff, of earthwork activities within the right-of-way with the exception of the asphalt testing of the roadway. This cost savings to the developer allowed them to move forward as proposed. The right-of-way construction is approximately 50% complete and the developer hopes to finish construction in 2017 and have an article submitted to Town Meeting in 2018 to have it accepted as a Public Way.

- **Lancaster Road/Kennsington Road Sewer Design –** *completed* – A resident in the area had been complaining about experiencing sewer backups into their house. The Engineering Department reviewed existing TV inspection data of the Town's sewer utility located within the area and determined that the likely cause of the backup was due to a defective invert in a sewer manhole and a significant sag present in a section of our sewer main. The sewer utility was surveyed and redesigned in-house and then repaired by the Department of Public Works. Since the repair was made, the property owner has not experienced a back-up.

- **Colburn Street Dam** – *ongoing* – The Town's consultant (Dewberry) completed a Phase II Investigation Report in March on our 100+ year old dam. As part of the Phase II investigation, the consultant provided land survey, subsurface investigations and geotechnical services to analyze the existing conditions, develop potential alternatives for repair or replacement of the dam and recommend a preferred alternative. The investigation also included performing scour, stability and dam break analyses.

  The dam is in fair condition, but does require some maintenance to extend its service life. The recommended maintenance alternative selected by the consultant was to remove the accumulated debris from the upstream face of the dam, apply a 4" to 5" layer of shotcrete over the entire upstream face, replace the existing stop log system, grout packing and pointing the stones on the downstream face of the dam and placement of riprap on the river bed extending from the downstream face of the dam out approximately 30 feet downstream. The cost estimate for this alternative is approximately $600,000.

  In May, Town Meeting voted to approve the funding of $755,000 for design and construction of the dam. Dewberry has completed the design and is currently working on permitting the proposed work through several agencies (MEPA, MassDEP, Army Corp. of Engineers, Dedham Conservation Commission). Once permitting has been completed the project will go out to bid with a potential schedule for 2017 consisting of a Spring Bid/Awarding with construction starting in the Summer and finishing in the Fall of 2017.

- **Transportation Improvement Projects (TIP) –** In the winter of 2013/2014 the Engineering Department presented to the BOS four potential projects that could be considered a viable project for funding through the MPO TIP. The BOS selected moving forward with the sidewalk/corridor improvements for Bussey Street and Rustcraft Road/Elm Street. The Engineering Department hired BETA Group as the design consultants for the project. To date, we have submitted the 75% design for Rustcraft Road/Elm Street project to MassDOT for review. The 25% design submitted with MassDOT still is under review awaiting additional structural information on the Bussey Street Bridge from our consultants. MassDOT will schedule a 25% Design Public Hearing for the Bussey Street project once the review is complete.

  In April, our State Representative, Paul McMurtry, Town Manager, Selectmen Mike Butler, Town Planner, Director of Public Works and I attended an MPO meeting in which prospective project proponents were provided an opportunity to speak on behalf of our project for consideration for funding by the MPO. In June, the MPO voted to approve funding for the Rustcraft Road/Elm Street project and programmed the start of the project for FFY2021. We will continue to work with our consultant to prepare 100% designs for this project in an attempt to be "shovel ready" as soon as possible should there be an opportunity to move up in the program calendar should a project fall off.

- **Traffic Calming** – *ongoing* – In 2012, The Board of Selectmen approved the traffic calming policy created by the Engineering Department. The Engineering Department will continue to work with the Board of Selectmen and the Town Manager to refine and revise the policy, as needed, in order to give clear guidance to residents wishing to implement traffic calming strategies in their neighborhoods through the submission of Traffic Calming Request Forms to the Transportation Advisory Committee (TAC). The Engineering Department sits as an ex-officio member of the TAC responsible for general oversight of the committee and performing preliminary investigations consisting of traffic counts, intersection turning movement counts, and speed surveys using in-house equipment and labor.

  To date, the TAC has received and decided on nine (9) traffic calming requests. None of the requests were determined to require traditional traffic calming measures based upon the initial traffic evaluations performed by our department (i.e. speed tables, speed humps, road narrowing). However, for those requests that do not warrant traditional traffic calming measures, the TAC does provide low cost traffic calming alternatives that the concerned neighborhood could implement on their own (i.e. staggered parking, step 2 kid alert).

- **2015 Inflow Investigations** – *completed* - In the Fall of 2014, the Engineering Department, in conjunction with Weston & Sampson, performed a third and final round of smoke testing on the remaining 20% of the Town's sewer system to identify direct (i.e. catch basins) and indirect (i.e. cracks in adjacent storm and sewer pipes) sources of inflow. The investigations identified approximately 4,700 gallons per day of combined peak direct and indirect inflow sources that were located within the Town's Right-of-Way. These sources were removed this year through our 2016 I/I Rehabilitation Project mentioned above.

  The results of all three investigations from 2013 through 2015 allowed the Town to remove approximately 510,000 gallons per day of combined peak direct and indirect inflow from our sewer system from problems that were located within the Town's right-

of-way and easements. However, the investigations also identified approximately 270,000 gallons per days of additional combined peak direct and indirect inflow that could not be removed at this time since they are located on private property. These sources of inflow come from several sources including driveway drains, roof leaders, broken sewer services and catch basins. In order to remove these private inflow sources the Town should establish and implement a Private Inflow Removal Policy.

- **2014 Private Building Inspections** – *on hold* – The Engineering Department, in conjunction with Weston & Sampson performed a Town-wide voluntary house-to-house inspection program to identify prohibited connections to the Town's sewer system. Prohibited connections to the sewer system consist of sump pumps, floor drains, driveway drains, roof leaders and other prohibited sources of inflow that may be connected to the sewer system. These prohibited connections are sending clean water to the MWRA's Deer Island treatment facility at the expense of the taxpayers. The program was to take place over 2 years. The intent of the project was to inspect buildings in precincts 4, 5 and 6 in 2014 and the remaining precincts in 2015. Once the inspections had been completed the data was to be compiled and a plan developed to remove and reroute these prohibited connections to the proper sources. Unfortunately, due to the low percentage of owners participating in the voluntary inspections and the cost associated to perform the inspections, we have decided not to pursue inspecting the remaining precincts in 2015. It has been determined that making the inspections voluntary along with the promise of amnesty to fines and penalties that may have resulted from discovering prohibited connections was not enough to get owners to participate. In the future if the Town wishes to continue its reduction of inflow to the sewer system it is suggested that the inspections be mandatory.

  Upon completion of visiting precincts 4, 5 and 6, we had approached 3,540 buildings, been allowed voluntary inspections on 1,460 (41%) buildings, not permitted to perform voluntary inspections on 209 (6%) buildings and had no answers and call-backs on 1,871 (53%) buildings. There have been 42 prohibited connections positively identified with an estimated 302,400 gallons per day of peak design inflow.

- **Dedham Mother Brook BMP Implementation Project** – *ongoing* – Back in 2012, the Engineering Department in conjunction with the Neponset River Watershed Association (NepRWA) completed a study through a MassDEP grant that identified 3 project sites in Dedham that would be suitable for structural BMP retrofits.

  Once again, in conjunction with NepRWA, the Town was able to secure a grant in 2015 through MassDEP to design and construct BMPs at the 3 project sites identified in our previous report. The design includes the construction of a bio-retention basin within the common area between Colburn Street and Hyde Park Street, a bio-retention basin along the edge of the right-of-way at the intersection of Emmett Avenue and Sawmill Lane and the third is a drainage swale located at Avery Street. The stormwater at all 3 of these sites are located within the Mother Brook tributary of the Neponset River. Both are listed as Category 5 waterbodies for pathogens (e. coli). The BMPs selected for this project will treat the stormwater collected to reduce the amounts of pathogens, phosphorous, nitrogen and sediments prior to discharge into the Mother Brook, thus improving overall water quality. The Engineering Department designed the landscape plans associated with the BMPs and is the project manager for the project. The Department of Public Works has been responsible for the construction of the BMPs with our oversight. It is anticipated that the project will be completed by the end of June 2017. It is also important to note

that 1 of the 3 BMPs was on Park & Recreation Land and the Parks & Recreation Commissioners were more than supportive in granting us the rights to construct the BMP on their property.

- **Private Ways** – *ongoing* – The Town By-laws for acceptance of private ways as public ways were updated at the 2014 Annual Town Meeting. The Engineering Department worked with the private ways subcommittee that developed the updated policy/standard by which the residents of a private way would have to adhere to in order to become a public way and also includes the construction standards/specifications by which a private way must be reconstructed.

  In 2015, the Town received Public Way Layout Petition Forms from 7 private ways. Of those 7, only 1 (Birch Street) had submitted a completed petition package which was approved by the BOS in March 2016. Following that, Birch Street submitted a completed Approval of Conceptual Overlay Map package which was approved by the BOS in September. We are currently working with our consultant BETA Group to generate layout and design plans to be presented to the BOS at an upcoming meeting.

  In 2016, the Town received a Public Way Petition Form from 1 private way (Quarry Road). The petition package was approved by the BOS in September. Following that, Quarry Road submitted an Approval of Conceptual Overlay Map package which should be in front of the BOS for approval at an upcoming meeting.

- **2014 Violet Avenue Drainage Study –** *completed* – At the request of the Town Administrator, based upon the continued and ongoing concerns of the residents of Violet Avenue, the Engineering Department, along with Weston & Sampson began the evaluation of the existing drainage system that runs through some of the properties of Violet Avenue and Kiely Road. The drainage system was exhibiting overflows from a drainage structure located in the backyard of a resident on Violet Avenue during high intensity rain events which creates flooding problems to several properties within the immediate area. The Town's consultants performed a thorough hydraulic analysis of the existing drainage utility and developed a recommendation consisting of the replacement of the existing drainage utility from the manhole located in the backyard of 76 Violet Avenue to the discharge point located on Bridge Street with larger pipes that would be able to accommodate the flows generated from a 10-year storm event at an estimated cost of $1.7 million. During the investigations, it was discovered that a significant portion of the existing 36" corrugated metal drain line towards the end of Zoar Avenue had significant sags, breaks and sharp bends which resulted in that section being extremely difficult to operate and maintain while at the same time reducing the capacity due to the accumulated amount of debris located within this section that could not be properly cleaned out. In the summer of 2014, the Engineering Department performed a redesign of the drain line in that area and the Department of Public Works did the construction, with our oversight, which consisted of the removal and replacement of approximately 150 feet of 36" pipe and the installation and/or repair of 2 drain manholes. Since that section was repaired and can now be properly operated and maintained, there has not been a flooding issue with the properties of concern. Both departments still keep a watchful eye on this system when significant rain events are forecasted.

- **Sewer Fats, Oils, and Grease (FOG) Issues** – *ongoing* – As part of our overall inspection program the Engineering Department also has an aggressive FOG program to

help eliminate back-ups and maintenance issues related to excessive grease in the sanitary sewer system. The Engineering Department has implemented a biological dosing program at key locations to help digest grease at known trouble spots.

  - **Legacy Place** – *ongoing* – The Engineering Department, in conjunction with the DPW and Health Department, has been monitoring the grease traps at Legacy Place. These grease traps have been improperly maintained to date and have been causing multiple problems at our Rustcraft Road Pump Station. We have been conducting random sampling of the grease traps throughout the year to determine if the establishments have been properly cleaning their grease traps according to their mandated cleaning schedule. When it is determined that an establishment is not cleaning their grease traps properly, the information is provided to the Health Department for their intervention. Our department will continue to monitor the grease traps to determine if the establishments are complying with the Board of Health's cleaning schedule.

- **Pavement Management** – *ongoing* – The Engineering Department, in conjunction with the Department of Public Works, has continued the pavement management program which began in 2007. Through ten years of the program, the Town completed approximately $22 million worth of repairs and maintenance to approximately 69 miles of roads and 20 miles of sidewalks. During this time the pavement condition index has risen from 70 to 84. A new 3-year road program is currently being generated and is to be considered for approval by the BOS in March or April of this year.

- **Pump Station Operation** – *ongoing* – The Engineering Department, in conjunction with the DPW, oversees the operation of the three sanitary sewer pumping stations, including the weekly maintenance, routine and emergency repairs, and upgrades of various components. The Engineering Department and DPW monitors alarms at all stations 24 hours a day and responds as needed.

- **Needham Street Bridge** – *ongoing* – The Engineering Department in conjunction with DPW had been working with MassDOT as they established their 100% design plans. The Engineering Department was responsible for acquiring all the right-of-way easements for the project. MassDOT awarded the Notice To Proceed to Northern Construction on 10/19/15. The final completion date for the project is anticipated to be 01/21/18.The Engineering Department along with the DPW will be meeting monthly with MassDOT during the construction seasons to get project updates that will allow us to provide any pertinent information to the Town Manager and the BOS concerning the progress of the project. Prior to this, the Engineering Department and the DPW had to take emergency steps to repair a hole in the bridge deck and develop a temporary shoring plan to allow the bridge to remain open.

- **Geographic Information System (GIS) Administration** – *ongoing* - The Engineering Department, led by its GIS Manager, manages the administration of the GIS for the Town. The role of the GIS Division within the Engineering Department is to respond directly to the various needs of the Town's various departments, as they relate to GIS. The responsibilities of the GIS Division include database administration, software application development, generating reports, creating maps and updating the Town's geospatial data. Below is a listing of some of the projects that the GIS division has been involved with:

- **Data Integrity –** *ongoing* –The criticality of having and providing accurate data is imperative, and data integrity is key in facilitating that. Therefore, The GIS Division continues to not only conduct deep and thorough evaluation, modification and maintenance of the existing and newly created data, but also continue to embrace and adopt the standard recommended structures by the GIS community.
- **Aerial Imagery**– *ongoing* **–** Prepared RFQs for bidding and procurement to acquire 3" pixel resolution suitable for producing 1"= 40' scale planimetric data Aerial Photographs/Images for the Town of Dedham. New Aerial Imagery is to be utilized for updating the Town's planimetric data. New Aerial Imagery is recommended every 2 to 5 years. Aerial imagery is vital in providing vast amount of data at low cost. The selected consultant is scheduled to acquire the aerial photography in the Spring of 2017.
- **Department Outreach –** *ongoing* – The GIS Division continues to conduct informational sessions with individuals and small groups of departments to focus the discussion and better understand the needs.
- **Departments' Special Projects –** *ongoing* – The GIS Division continues to work closely with many departments to create, and produce data, and maps that can facilitate and support their needs and decision making by migrating, modifying, evaluating and analyzing the available information.
- **Web GIS for Town staff –** *ongoing* **–** The GIS division has been implementing cloud and web based GIS technology called ArcGIS Online. This technology provides GIS capabilities to departments and staff that do not otherwise have GIS. These tools allow sharing and collaboration of information between departments. The GIS Division continues to develop new content on ArcGIS Online to enhance the Town's GIS.
- **Public Web/Mobile GIS –** *ongoing* – The GIS Division continues to maintain, enhance, update and publish mapping content through the Town of Dedham Maps Online application. Information is available as downloadable PDF files, web maps, and applications.
- **Infrastructure Engineering Operations** – *ongoing* – The Engineering Department uses iPad tablets to conduct storm water outfall inspections in the field. Development is underway to expand this process for maintenance of other infrastructures throughout the town.
- **Work Order/Asset Management for Public Works –** *ongoing* **–** Maintaining, updating the integrated work order and asset management solution. The software solution, Cartegraph, allows Public Works staff to track service requests and work orders to their completion. The asset management allow Public Works Department to track maintenance history on specific items (e.g. signs, stormwater infrastructure), also it provides Public Works Department with the capability of tracking federally mandated maintenance on public infrastructure.
- **Citizen Access Service Requests –** *ongoing* - The GIS Division continues to maintain the implemented YourGov application by Cartegraph for the Public Works department. The YourGov solution has both a web and mobile application. Both applications integrate directly into the Public Works existing work order management system, allowing staff to access all service requests in a single location.
- **Cemetery** – *ongoing*– Continue to maintain and enhance the data and web application for the Brookdale Cemetery. The Brookdale Cemetery web application was redesigned for better support on various tablet and mobile

devices. This allows the Cemetery Division to access burial record information from the field. The same application was repackaged for the Village Cemetery.

- **Police** – *ongoing* – Automated mapping of incident information from the police database. The process provides the police with a secured web map of incident data updated every six hours. The data is also made available to other GIS users for mapping of accident or other relevant police incident information.
- **Information Technology** – *ongoing* – Supporting and solving IT related issues during the transition period in an effort to minimize the impact on the GIS database and the availability of GIS applications and data to all of its customers.
- **State/Regional Collaboration –** *ongoing* –
  - **MassGIS** – *ongoing* - Working with MassGIS staff to provide updated standardized structure data for the Town of Dedham to the state. Standardized parcel and structure information are critical data layers for creating statewide address information to support E911 services.

- **Storm Drainage Improvements/Inspections** – *ongoing* – The Engineering Department routinely responds to complaints and flooding issues throughout Town. As part of our evaluations of drain lines we have cleaned and inspected approximately 26.3 miles of pipe. In addition, we design improvements as needed. Over the past year the Town has installed 12 new deep sump catch basins.

- **Neponset Valley Stormwater Collaborative** – *ongoing* - The Engineering Department sits as one of the representatives from Dedham as part of the regional stormwater collaborative with 14 other Neponset Valley Communities. This collaborative was formed through the Community Innovation Challenge Grant awarded to the MAPC and Neponset River Watershed Association. The collaborative is working together to prepare the communities for the challenges that are anticipated to arise from the new MS4 permit to be issued to the Commonwealth from the EPA.

- **Sewer Billing Project** – *ongoing* – The Engineering Department has been working with the Collectors Office to identify properties which were likely on sewer but not receiving bills using billing data and GIS information. To date 156 properties have been added to the sewer billing system. Of the 156 properties, 24 are properties located in Westwood and 3 are properties located in Boston. We are currently utilizing our sewer TV inspection data and GIS to plot locations were active sewer connections are made to the Town's system to identify additional properties that are likely connected but not receiving bills.

- **Stormwater Illicit Discharge Detection** – *ongoing* – As part of the Town's NPDES Stormwater Phase II Permit, the Engineering Department conducts outfall inspections to screen for illicit discharges to the storm drainage systems. To date, 457 inspections have been completed.

- **Sewer Connection, Extension, and Repair Inspections** – *ongoing* - The Engineering Department reviews, issues, and inspects permits for the installation and satisfactory testing of sewer lines and manholes on a daily basis. We spend a great deal of time responding to questions from residents and builders and we provide them with locations of existing facilities from record plans or television inspections. Over the past year, the Department reviewed, issued and/or inspected 44 permits. In addition to sewer permits,

our department administered Drainlayer Licenses to 23 bonded and insured sewer contractors.

- **Subdivision and Site Plan Review** – *ongoing* - The Engineering Department reviews numerous site plans and subdivisions for consistency with Town regulations and acceptable design standards. We provide written comments to the respective boards on the adequacy of those plans and calculations.

- **Town of Dedham Construction & Design Standards** – *ongoing* – The Engineering Department is responsible for updating the Town's Design and Construction Standards. Every few years we review all the standards and update and/or revise those standards to meet local and state requirements. Our last update/revision of the standards took place in 2015.

- **Other notable completed projects**:

    - Violet Avenue at Pine Street Intersection Realignment (2015)
    - 2014 Inflow Investigations (2015)
    - Striar Property (2015)
    - Gonzalez Field – Accessible Parking Design (2014)
    - 2013 Inflow Investigations (2014)
    - Washington Street Discontinuance (2013)
    - Municipal Building Inspections (2012)
    - Town Wide Inflow & Investigation & Rehabilitation Program (2012)
    - Lowder Street at Highland Street Intersection Realignment (2012)
    - Town-Wide Flow Monitoring Project (2011)
    - Highland Street Sidewalk Design (2011)
    - High/Lowder/Westfield Street Traffic Calming (2011)
    - Stormwater BMP Retrofit Grant (2012)
    - Lowder Street Culvert Replacement (2011)
    - Cedar Street Culvert Replacement (2011)
    - Colburn Street Reconstruction (2011)
    - Pacella Drive Illicit Discharge Removal (2010)
    - Traffic Regulations Update (2010)
    - East Street Reconstruction – Phase II (2009)
    - East Street Reconstruction – Lowe's Money (2009)
    - Condon Park Parking Lot Design (2009)
    - Bussey Street Culvert Abandonment (2009)
    - Maverick Street Wall Replacement (2009)
    - Zoar Avenue Sewer Replacement (2009)
    - Rustcraft Road Sewer Replacement (2009)
    - Gaffney Road Sewer Improvements (2009)
    - Brookdale Cemetery Expansion (2008)
    - Flanagan Place/Orphan Line Drainage (2008)
    - Bridge Inspections (2008)
    - Intersection Redesign, Greenlodge Street at Sprague Street (2008)
    - East Street and Washington Street Sewer Replacement (2007)
    - Street Opening Regulations Update (2006)
    - Sewer Regulations Update (2006)
    - Salt Shed (2006)

Cc: Board of Selectmen
Nancy A. Baker, Assistant Town Manager
Joseph M. Flanagan, Director of Public Works
Nathan S. Buttermore, P.E., Infrastructure Engineer
Ronald I. Lawrence, Project Engineer
Eman Sayegh, GIS Manager