

Inflow and Infiltration (I&I) Evaluation and Recommendations for the City of Waltham

I&I Advisory Committee

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Inflow & Infiltration (I&I)

Inflow occurs when storm water enters the sewer system through connections that are in violation of current standards and Infiltration occurs when groundwater and storm water enter into sewer pipes as a result of physical defects such as cracked pipes, leaking manholes or deteriorated joints. Inflow and Infiltration increase the volume of water flowing through the sewer pipes resulting in an unnecessary strain on sewer treatment systems. The additional flows cause Sewer System Overflows (SSO's), which pollute public waters and pose a public health and safety concerns.

I&I is traditionally a result of antiquated or inadequately maintained infrastructure. SSO's and other problems typically peak after heavy rain events, snowmelt or when the groundwater table is at its highest.

History of Regulatory Action in Waltham

On April 30, 2001, the Massachusetts Department of Environmental Protection (MA DEP) issued the first Notice of Non-Compliance to the City for failure to report sewer overflows (SSO's).

On May 7, 2003, MA DEP entered into an Administrative Consent Order (ACO) with the City and the City agreed to take certain actions to reduce the frequency and duration of SSO's to waters of the Commonwealth and to plan and schedule for eliminating I&I to the sewer system. The 2003 Consent Order also required that the City:

- Maintain a "sewer bank" to manage any and all new sewer connections so as to not exacerbate the risk of SSO's

On January 2005, the City entered into an amended and more extensive ACO with MA DEP requiring the City to:

- Continue administration of the "sewer bank"
- Implement sewer system rehabilitation projects identified in the City's I&I investigations

As a result of this amended ACO, the City:

- Established and administered a "sewer bank" to manage new connections to the sewer system
- Completed the Beaver Brook sewer rehabilitation project
- Completed the Hobbs Brook sewer rehabilitation project
- Completed the Roberts Trunk Line sewer rehabilitation project

- Completed the Met State sewer rehabilitation project
- Initiated a private inflow identification and removal program (Sump Pump Program)
- Completed a Draft Sewer System Facilities Plan and Model in 2009

Despite the work by the City, between 2008 and 2010, there were thirteen (13) SSO's in Waltham, resulting in pollutants being released to waters of the Commonwealth.

On February 8, 2010, MA DEP issued another amended ACO to the City that was stricter than the previous ACO's and required:

- Maintaining the sewer bank
- Removing 4 gallons/day of I&I for every 1 gallon added to the system
- Redirecting residential sump pumps from the sewers to alternate sources
- Submission of semi-annual reports to DEP in January and July of each year

So far in the first six months of 2014, there have been ten (10) reported SSO's in Waltham according to the most recent semi-annual report.

I&I Impacts in Waltham

- I&I pose a threat to the public health of the city's 61,000 residents and the nearly 58,000 employees who work in Waltham.
- I&I pose a threat to the natural environment and the city's public waters.
- I&I pose a threat to the city's 60% commercial tax base, which represents more than \$80 million in annual tax revenues to the City. The City depends on these revenues to fund schools, public safety and all other public services. A reduction in the commercial tax base would increase the tax burden on residents.
- SSO's are a violation of both the State and the Federal Clean Water Act (CWA). The MA DEP is enforcing the environmental regulations that the City has been violating for more than a decade.
- The City of Waltham is responsible for correcting all I&I issues.
- The City of Waltham has placed the burden of correcting I&I issues largely on small and large business and developers in Waltham and this is not "fair and equitable". All businesses and residents in the City are burdened by the failing

and improperly managed sewerage system, not just small and large business and developers.

The City's sewer infrastructure is aged and requires ongoing repair, replacement and maintenance. The City's infrastructure investment has not kept up with the wear and tear on the system and as a consequence, wet and dry weather sewer system overflows across the system release into the City's natural habitat, public waters, and homes. There are over 100 locations across the City that have experienced sewer system overflows within the past ten years. These overflows range in severity from overflows in residential basements to streets flooding and becoming impassable.

The condition of the sewer system also has a detrimental impact on businesses in the City, which account for 60% of the city's tax base. There have been *numerous* complaints from the business community regarding I&I policies and implementation and questions surrounding the effectiveness of the current mitigation program. Businesses face costly I&I fees when they choose to locate or grow in Waltham, which creates a competitive disadvantage for Waltham in comparison to other nearby communities. The ongoing and unresolved I&I problems pose a threat to the local economy and the stability of the City's more than \$80 million annual commercial tax base. This, in turn, poses a potential tax burden for residents.

After eleven (11) years of state-mandated ACO's in place, Waltham still needs substantial work to eliminate SSO's from polluting local waters, residences and public spaces.

Inflow & Infiltration Advisory Committee Goals and Approach

The Community Development Committee of the Waltham City Council hosted an I&I hearing for businesses, developers, residents and subject matter experts to discuss their concerns about the City's I&I policies. The hearing was well attended and a consistent theme emerged: local businesses agreed that a significant I&I problem exists in Waltham and that it needs to be resolved. These businesses expressed disappointment with the City's existing policies that pass the cost burden of correcting the public infrastructure problem on to businesses and developers. Some small businesses testified that the City's I&I fees were a contributing factor to them closing down. Others discussed how the onerous I&I policies make it difficult to attract tenants to vacant commercial spaces in downtown. Some businesses looking to locate in Waltham have chosen to go elsewhere because of the City's costly, uncertain and onerous I&I policies.

Shortly after the I&I hearing, the City Council passed a Resolution on May 19, 2014 to establish the I&I Advisory Committee. The goals of the I&I Advisory Committee were to:

- To seek solutions that will enable the City to correct the I&I problems with the least economic impact on residents and business,
- To help protect public health, the environment and the local economy, and
- To seek “fair and equitable” means of implementing the I&I Program.

To accomplish these goals, the committee cataloged relevant reports, data and documentation; reviewed the City’s existing I&I policies, interviewed citizens, employees, City staff and subject matter experts; and researched potential improvements to the City’s existing mitigation plan. The committee also reviewed publicly available data and reports from other Massachusetts municipalities with I&I issues and the Massachusetts Water Resources Authority (MWRA).

Through this process, the Committee conducted interviews with the following individuals:

- Bill Doyle, P.E. Doyle Engineering; Waltham Resident
- Charlie Lombardi, I&I Expert; Waltham Resident
- Joe Connors, Attorney
- Glenn Haas, Former Assistant Director MA DEP
- Patrick Powell, Waltham Building Department - Zoning Officer
- Many local business owners throughout the City
- Small and large residential and commercial builders
- Concerned residents
- **NOTE:** Stephen Casazza PE, City Engineer - Waltham Engineering Department was confirmed to attend the October 28, 2014 I&I Advisory Committee meeting but did not show up. The Committee did not interview Mr. Casazza and the Committee only received limited responses to written questions sent in advance of the October 28, 2014.
- The I&I Committee met ten (10) times on alternate Tuesday evenings beginning on July, 8,2014 through November 11, 2014 to conduct interviews and to review, analyze and discuss documentation collected.

Findings

With ten (10) SSO’s already reported in 2014, the City still has a significant amount of work to do. The problems that exist in Waltham are largely due to the infrastructure problems throughout the City; inadequate policies and management of the current

program; and the unfair and inequitable method of requiring all of the costs of fixing the problem to be borne by local businesses and developers.

Like many communities throughout the Commonwealth, the City's sewer infrastructure is aging and in need of significant investment. Approximately \$10 billion worth of residential, commercial and industrial real estate is served by Waltham's sewer system. More importantly, approximately 60,000 residents and 58,000 employees rely on the service and safety of the City's sewer system. Ensuring that the system functions properly must be a top priority for the City.

I&I Problems - Infrastructure

The following are the major infrastructure issues that the Committee found:

- Tree roots and grease cause the most significant problems in sewer systems. Waltham has significant problems with both tree roots and grease damaging pipes and contributing to the I&I issues.
- There is no comprehensive Fats, Oils, Grease (FOG) Policy currently in place in the City. A draft policy is with the City Council Rules and Ordinances Committee.
- The current Sump Pump Amnesty Program has not been effective in removing those sources of inflow.

I&I Problems - Policies/Management

The following are the major policy and management issues found:

- There is an inconsistency in the administration of the Plan by the Engineering Department. There is no complete "fair and equitable" treatment of all applicants.
- The I&I policies are unclear to most applicants as are the process required, the amount of time involved and the amount of resources and costs to the property owners.
- Waltham residents are largely unaware that I&I issues in the City exist. Businesses and developers in the City bear the burden of the majority of the I&I issues.
- There are several issues with the City I&I Ordinance #30078. There is no authorization under this Ordinance for the City Engineer to promulgate "Rules

and Regulations” or “Policies” to interpret and administer the Ordinance. Yet, the City Engineer has made such “rules.” For example, there is no language in Ordinance #30078 documenting the “one year vacancy rule” which triggers I&I for commercial property that has been vacant for greater than one year.

I&I Problems - Engineering Department

The Committee has found that several significant concerns stem directly from the Engineering Department:

- It does not appear that the Engineering Department has the necessary resources to manage and implement a successful I&I Program. The department appears to be short-staffed which causes lengthy delays for applicants during the permitting process.
- The current review process for I&I applications is not timely by the Engineering Department and significantly impacts all applicants.
- Communications between the Building and Engineering Departments could be better managed and defined to assist applicants.

I&I Problems - Business

Currently in Waltham, the commercial properties bear the brunt of identifying, engineering, financing and completing I&I projects. The Committee found no other instances of municipalities utilizing this approach to mitigate I&I. The following are the issues for the business community:

- The City of Waltham currently requires applicants to find projects to complete and to make those repairs, with unknown costs and time frames for completion.
- A Covenant is placed on the property for I&I issues that is restrictive and presents significant title issues with lenders financing projects.
- The One Year Vacancy Rule is an unwritten rule that has no appeals process and puts a burden on businesses that are already having difficulties in leasing or selling property.
- There is no appeal process for decisions made by the Engineering Department.

- The current policies are not fair and equitable for small business. I&I fees are often cost prohibitive for new businesses entering into Waltham and are onerous for businesses currently operating in the City. There have been numerous examples of businesses that have chosen not to open in Waltham and those who have left Waltham due to I&I fees.

Solutions

Mitigating the City's I&I problem is neither a simple nor inexpensive problem. Resolution of the problems will take a comprehensive and multi-faceted approach. A clear and actionable strategy with immediate, short-term and long-term solutions can help to improve the system functionality to a point where sewer system overflows are infrequent. This requires a long-term commitment and participation and contribution of all parties.

Immediate Solutions

There are immediate solutions that the City must consider taking which could be accomplished in a time frame of a matter of weeks. Such immediate solutions would be a key start in the process to make the I&I Program in Waltham more successful:

- ***Establish a Fats, Oils, Grease (FOG) Program.*** A FOG Program is a requirement of the newly promulgated DEP regulations. As a draft of such policy is currently with the City Council Rules and Ordinances Committee, it is imperative to consult with professionals and implement a comprehensive FOG Policy.
- ***Remove the One-Year Vacancy Rule.*** A Resolution Concerning Inflow & Infiltration Fees Dated June 9, 2014 is presently pending action by the City Council. This resolution should be put to vote with the City Council and should be implemented to avoid further alienation of the business community.
- ***Remove or rewrite the Covenant placed on properties.*** Current unapproved policies require a Covenant to be recorded at the Registry of Deeds that impacts the title to a property to ensure that a specific I&I project has been completed. The use of this Covenant is onerous and not fair or equitable to individual property owners because of the burden that it places on their

properties and which may impact their ability to finance or refinance the property.

Short-term Solutions

There are short-term solutions that the City must consider which could be implemented in a time frame of several months to one year. Such short-term solutions include:

- ***Reevaluate I&I Ordinance #30078.*** A common complaint across all business types and sizes is the inconsistent and unclear policy standards for their projects. There is little information available online explaining the I&I process and the information that is available does not clearly indicate the impacts that a project proponent will face when doing business in Waltham. This inconsistency and unpredictability needs to be improved and the City's policies need to be updated.
- ***Waltham should be responsible for all sewer maintenance and repair work, not businesses.*** The requirement for businesses to find and undertake an I&I mitigation project should be removed.
- ***Initiate the use of an impact fee in lieu of public improvements with a sliding scale for user size.*** It is challenging and time consuming for businesses to identify I&I improvement projects on their own. It is recommended that the City eliminate this policy and in its place adopt an impact fee based on flows. There are many communities in Massachusetts operating in this same way.
- ***Implement an appeals process.*** There is currently no mechanism to appeal the decision by the Engineering Department. Often, the decisions made are by "judgment call" of the department, as policies do not exist for all situations. It is strongly recommended that the City establish an appeal mechanism - perhaps through a subcommittee of Councilors, Engineers, and other professionals that enables an aggrieved party to appeal a fee or decision regarding I&I mitigation requirements.
- ***Provide education regarding I&I to all City constituents.*** In order to improve communications with businesses and residents on the issue of I&I, the City should make all of the current and historic I&I documents publicly available and easy to find online. The City should develop literature to educate residents about the City's I&I policies and distribute the literature with the City's tax bill, sewer bill and online.

- ***The City should be proactive in educating businesses and developers about the City's I&I policies, regulations and requirements.*** The cost and time to comply with the City's I&I requirements should be clearly communicated to prospective businesses and developers, so that no surprises arise in late stages of project review and approval. The City should put these requirements in writing and make them available online, in permitting packages, and through a flier that is readily available at the Building and Engineering Departments.
- ***Provide additional assistance to the Engineering Department.*** The Engineering Department appears to be short-staffed and to not have adequate resources to manage the I&I Program. It is recommended that the City establish a dedicated position within the Engineering Department to oversee I&I issues.
- ***Better leverage the Sump Pump Amnesty Program.*** The Sump Pump Amnesty Program is an important tool for the city that could be better utilized. Private contractors and businesses should not be seeking out homes with sump pumps, and the City should not be encouraging them to do so. It is recommended that the City engage an experienced and qualified contractor to implement the program and to establish an incentive-based contract that compensates the contractor based on the volume of conversions over a specified period. This program should be supplemented by inspections at the time of a property sale when a final meter reading occurs or when the smoke detector inspection takes place.
- ***I&I Committee Review of the 5 year mitigation plan.***
 - If it is not already contemplated as part of the scope for the existing I&I consultant, the city should further engage the city's I&I consultant to develop a Sewer Capital Plan that identifies short-term, mid-range and long-term infrastructure improvement projects that intend to eliminate SSOs. The plan should include cost estimates for each of the recommended improvements and a proposed construction schedule for how to prioritize these improvements to reduce I&I in the shortest period of time.
 - Since the City has yet to issue the 5-year mitigation plan report that is due to MA DEP in December 2014, the City Council may want to extend the Committee to conduct a review of the report and to act as a resource to the Council. Some Committee members may be willing to continue their service on this Committee for a limited time or a new Committee can be formed.

Long-term Solutions

There is one important long-term solution that the City should consider to help get on track with the I&I issue:

- ***Establish and implement a CMOM Program.*** A Capacity Management Operations and Maintenance (CMOM) program should be implemented. A CMOM program is a comprehensive evaluation of all issues with respect to the sewerage collection system. The process involves evaluation of every aspect from staffing to policies to operation and maintenance. Implementing a CMOM program is recognized a national best practice and is recommended by the United States Environmental Protection Agency (US EPA).

CMOM

C – Capacity – Addresses blockages, structural issues, I&I issues

M – Management – Identifies performance measures, standard operating procedures, training

O – Operation – Operation of pump stations, programs

M – Maintenance – Preventative, predictive and corrective maintenance

A CMOM program should identify short-term, mid-range and long-term infrastructure improvement projects that intend to eliminate SSO's. The plan should include cost estimates for each of the recommended improvements and a proposed construction schedule for how to prioritize these improvements to reduce I&I in the shortest period of time. A financing plan will be necessary to enable the plan's implementation. Depending on the size and scale of the necessary improvements, this plan will need to consider all potential funding scenarios including MWRA I&I Funding, State Revolving Fund Program loans, bonding, other grants and loans, fees, and public-private partnerships, and if necessary, increases in sewer rates.

Conclusion

A thoughtful strategy of infrastructure investment, coupled with the policy adjustments and other strategies outlined in this report, would enable the City to engage in a targeted and actionable mitigation plan yielding higher and better results. The current method of requiring private individuals and developers to identify problems, design solutions, retain qualified contractors, undertake construction and evaluate and test the system when the work is complete has proven to be ineffective in mitigating I&I in the City of Waltham.

Resolving this issue in a comprehensive and expeditious fashion needs to be the utmost priority for the city administration moving forward. In order to achieve this objective, there must be greater communication, cooperation and dedication by the City administration and City departments that are involved. The Committee offers the above set of strategies which, if implemented, will provide the City with a tremendous step forward in resolving this critical infrastructure challenge, while also preserving the city's robust commercial tax base to support public services and maintain a low tax burden on residents.

This report was submitted to the Waltham City Council at its meeting on November 24th, 2014. The following I&I Advisory Committee Members participated in this process and the formulation of this report:

- Robin Brodsky, Co-Chair - Waltham Resident
- Randy LeBlanc, Co-Chair - Waltham Resident - HVAC Contractor
- Kathy Luvisi, Secretary - Waltham Resident - Engineer (P.E.)
- Bob Coleman - Waltham Resident - R. E. Appraiser - Property Manager - Broker
- Tom Dusel - Non-Resident - President/CEO - Property Manager
- Paul Finger - Non Resident - Principal - Landscape Architect
- Joey LaCava - Waltham Resident - Business Owner

Addenda

City Council Resolution Establishing the I / I Committee

Administrative Consent Order - May 7, 2003

Amended Consent Order - January 31, 2005

Administrative Consent Order and Notice of Noncompliance - February 22, 2010

Massachusetts General Laws Chapter 83

I&I Ordinance

I&I Policies and Covenant to Provide I & I Sewer Mitigation

I & I Committee Minutes

CMOM Request

Excerpts From CMOM Self-Assessment Checklist Memorandum

Excerpts From Massachusetts Water Resource Authority Annual Infiltration And Inflow (I/I) Reduction Report For Fiscal Year 2014

Excerpts From Final Official Statement Dated June 10, 2014 City Of Waltham, Massachusetts \$3,500,000 General Obligation Taxable Bond Anticipation Notes

Best Practices, Goals, Solutions, Investment Benefits

City Council Resolution Establishing the I / I Committee

City Council Resolution

APPROVED AS AMENDED
COW - 5-19-2014

Whereas, The City of Waltham has been party to a consent agreement with the Massachusetts Department of Environment Protection for several years to resolve a critical environmental issue and infrastructure shortfall regarding inflow and infiltration (I&I).

Whereas, The City of Waltham is responsible for setting policy and mitigation strategies to meet the conditions of the consent agreement and ultimately resolve this existing environmental hazard.

Whereas, there have been numerous complaints from the business community with regards to transparency and implementation of the Inflow & Infiltration policy and the City Council has reason to believe these complaints are substantiated by inadequate policy making within the administration.

Whereas, the City Council needs to ensure that the City's administration of this consent agreement is not adversely and disproportionately impacting businesses and impeding the long term stability of the local economy.

Therefore be it Resolved that the City Council establish an Inflow & Infiltration Business Advisory Committee to consult and advise the administration on the impact of Inflow & Infiltration policies and the impact that such policies have on business, the local economy, local property valuations, and commercial/business tax revenue.

Therefore be it further Resolved that the City Council appoint no less than ^{FOUR} ~~ten~~ individuals representing the interests of businesses to serve on an Inflow & Infiltration Business Advisory Committee; Such individuals shall have expertise in land use and environmental law, commercial leasing, residential and commercial construction, engineering, the local business climate, and the Inflow & Infiltration practices of other Massachusetts communities.

Therefore be it further Resolved that the Inflow & Infiltration Business Advisory Committee will review the administration's most recent progress report to the Massachusetts Department of Environmental Protection and the administration's proposed 5-year mitigation plan that is due to Massachusetts Department of Environmental Protection in August 2014, and report to the City Council ~~on a monthly basis on its findings, concerns and interests as a committee;~~

THEIR RECOMMENDATION FOR THE 5-YEAR MITIGATION PLAN BY THE AUGUST 2014 CITY COUNCIL MEETING.

Sincerely,



Thomas M. Stanley
Councillor-at-Large
Chair, Economic & Community Development Committee

5/12/14



AND THREE
WALTHAM
RESIDENTIAL
RATEPAYERS
WHO DO NOT
OWN A
WALTHAM
BUSINESS.