

City of Waltham

CITY OF WALTHAM
CITY CLERK'S OFFICE

Jeannette A. McCarthy
Mayor

2017 JUN 22 A 11:44

RECORDED

June 22, 2017

TO: The City Council
RE: Woerd Avenue Landfill Project

Dear Councillors:

I respectfully request approval of the attached Application for a Section 108 Loan Guarantee from the United States Department of Housing and Urban Development for the Woerd Avenue Landfill Revitalization Project.

The Housing Division, the City Planner and I are available to answer questions you may have regarding this request.

Thank you.

Sincerely,

Jeannette A. McCarthy

JAM/ccb

Enclosure

cc: Deb Flanagan
Catherine Cagle



CITY OF WALTHAM
HOUSING DEPARTMENT

119 SCHOOL STREET
WALTHAM, MASSACHUSETTS 02451
781-314-3380 781-314-3385 (fax)

To: Waltham City Council
From: Robert J. Waters Jr.
Date: June 22, 2017
Re: HUD Section 108 Loan Request for the Woerd Avenue Landfill

I respectfully request the approval of the attached Section 108 Loan Guarantee application to secure a \$4,249,300 loan from the United States Department of Housing and Urban Development through the Planning Department to revitalize the Woerd Avenue Landfill property.

CITY OF WALTHAM

**WOERD AVENUE LANDFILL
REVITALIZATION PROJECT**

APPLICATION FOR SECTION 108 LOAN GUARANTEE

from

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

for

TESTING, CAPPING & MONITORING

IN THE AMOUNT OF \$4,249,300

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Project Description

The purpose of this Section 108 Loan Guarantee application is to obtain federal loan funds to re-use Waltham's former Woerd Avenue municipal landfill with a neighborhood park. The former landfill site is non-operational and occupies critical land in one of Waltham's lowest income neighborhoods. The former Woerd Avenue Landfill site is located on the Waltham/ Newton boarder and comprised of approximately 8.69 acres. The landfill began as a small dump for coal ashes from home heating furnaces in 1912, by 1935, approximately 35,000 tons of ashes were dumped on the site annually until 1971. The landfill has been closed since the early 1970's and has remained untouched since.

On July 27, 2015, the City took the first step toward re-use of the land by hiring engineering and environmental constants, Tighe & Bond. Through an RFP process Tighe & Bond was selected to begin the process of revitalization by undertaking a Corrective Actions Alternative Analysis (CAAA). The CAAA is in the beginning stages and is being prepared in accordance with the requirements of the Solid Waste Management Regulations (310 CMR 19.000).

On July 5, 2016, the Massachusetts Department of Environmental Protection approved the scope of work Tighe & Bond outlined in their proposal to DEP (See Attached A) The approved scope of work is divided into two tasks. The first, is the collection of water quality, landfill gas and sediment samples and reporting of the results to MassDEP. The first round of testing was provided to MassDEP by Tighe & Bond on January 25, 2017. This Section 108 Loan Guarantee will provide funding for the completion of the additional testing rounds required from MassDEP, which includes testing existing wells, additional rounds of tests and remediation of harmful chemicals or components of the samples if applicable.

The second task for the CAAA is to complete an evaluation of alternative corrective actions to be implemented to address specific conditions. The corrective action components to be evaluated are:

- Type of cap appropriate for the area of landfilled waste
- Methods to vent the gas off the landfill cap, including around monitoring well locations.

This Section 108 Loan Guarantee will provide funding for the construction of the appropriate cap selected for the area and for the continued monitoring of landfill gas to meet the MassDEP regulations after capping has concluded.

The Community Development Objective is to develop a viable and sustainable neighborhood park through the re-use of an existing city owned property. The revitalization of the land will eliminate blight and create a healthy and suitable living environment for Southern Neighborhood District residents, while improving their quality of life. The Section 108 Loan Guarantee will be used specifically for environmental testing, construction of the landfill cap and subsequent environmental monitoring. Once the cap has been constructed, the City will release an RFP for a landscape architecture firm to design the park with the assistance of the City's Recreation Department and community members.

The land on which the testing, capping and monitoring will take place is in the ownership of the City of Waltham and will stay under the ownership of the City of Waltham after the project has completed.

The Improvements will be owned by the City of Waltham.

Project Location

The project location is in the Southern Neighborhood District of Waltham (Attachment B). The Charles River, which traverses Waltham, has been a dominant natural resource with important implications for the development of Waltham over the past 150 years. The Charles River abuts the former landfill to the north. To the south, the project location shares a property line with Koutoujian Playground, a small playground area with a few play structures and skateboard area, which will be extended onto the former landfill site, once safely capped. (Attachment C)

Zoned primarily residential, Census Tract 3686 contains a few small businesses, fast food restaurants and office parks which suit the 4,352 residents in the neighborhood. 47% of the residents living in this neighborhood are low income and would directly benefit from open space and recreation activities. The small playground is easily accessible by residents from the Moody Street side, but is not accessible for residents on the Rumford Avenue, Cove Street and Woerd Avenue sides due to the chain linked fence surrounding the former landfill.

The Charles River Reservation is a linear park stretching from the Boston Harbor over 20 miles through each suburb along the Charles River. Managed by the Commonwealth of Massachusetts Department of Conservation and Recreation, this park offers diverse options for enjoyment of open space and recreational opportunities. Unfortunately, the residents of Waltham's South Neighborhood District do not have direct access to the Reservation due to the existence of the former landfill site. (Attachment D)

The City of Waltham has invested in the Southern Neighborhood District over the past seven years. The neighborhood was established as a local target area for Community Development Block Grant funds in 2000 and since, the following projects have increased the quality of life and morale in the Southern Neighborhood District:

- **2000** - The City created a skateboard area in a small space adjacent to the landfill;
- **2010** - The former South Middle School transitioned into a Neighborhood Community Center;
- **2016** – All sidewalks were replaced in front of the landfill property on the Moody Street side;
- **2016** – New street lights were installed on the Moody Street side of the landfill property;
- **2016 & 2017** - The Downtown Waltham Partnership provided grants to 11 business owners for façade improvements and code violation corrections.

Like many other neighborhoods across the United States, the Southern Neighborhood District could use increased revitalization efforts. For this reason, it is crucial that the City of Waltham invest in the former landfill property. The revitalization of this property will attract private residential, commercial and industrial development for years to come.

Neighborhood Statistics

The targeted area (census tract 3686) has a population of 5,647 residents, 47% of these residents are between the ages of 15 and 44, making a total of 1,096 families in the area. 20% of these families have one or more people under the age of 18¹, creating a great need in the census tract for outdoor recreation space in the neighborhood for children to play.

Five block groups make up the census tract, these block groups have a 51.738% population of low/mod residents², even though 86% of the population is employed making an average of \$72,279 per year, the poverty rate is still 9.4%³ in the project area.

The population of the targeted area is very diverse and yields many different religions, places of origin and languages. 1,763 residents in the targeted area have identified as foreign born, with 1,626 identifying with Hispanic origin⁴. Spanish is the most non-English language spoken in Waltham with 6,507 total residents throughout the City identifying Spanish or Spanish Creole as their primary language. The involvement and input of these various backgrounds will assist the City in providing the residents with recreational amenities they are familiar with. Many residents have already spoken out supporting the installation of a futsal court once the landfill is capped. Futsal is a soccer style game played on a hard court which originated in Uruguay in 1930⁵.

¹ Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates

² 2016 HUD ACS LMI Summary Data

³ Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates

⁴ Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates

⁵ <http://www.futsal.com/index.php/history-of-futsal->

Neighborhood and Community Involvement

The involvement of the community and neighborhood residents is very important to the City. This project is very large and will impact many residents, therefore the City will involve as many residents in the decision making and planning process as possible. Discussions surrounding the site have been active since 1996 when an Initial Site Assessment was performed by Camp, Dresser & McKee, an environmental firm located in Massachusetts. To continue these free-flowing discussions and input from the community once the project has started, the City intends to hold progress meetings surrounding the re-use of the site and the progress of the project. Public meetings will be held onsite or close to the site in order to alleviate the need to travel for neighborhood residents.

The following has taken place to date in order to involve community members in the decision to submit this application for the Section 108 Loan Guarantee:

- **Site Meeting:** On March 12, 2015, The Purchasing Department along with the Planning Department held an on-site meeting with interested parties to view the current state of the site and offer input on what improvements should be done. Roughly twenty individuals attended the site meeting and provided input, which is included in the narrative portions of this application.
- **Round Table with MassDEP:** On December 15, 2015 Tighe & Bond set up a round table discussion with MassDEP to determine the scope of the project and the first steps towards remediation, which included the required testing. The proposed re-use of the parkland was discussed and input was received regarding the addition of both passive and active recreation areas if the landfill cap allowed.
- **Public Meeting:** held by the Planning Department on March 31, 2017 when the 2017-2018 Annual Action Plan was released for comment. The Recreation Department requested CDBG funding in the amount of \$35,000; this request was denied due to the opportunity to receive Section 108 funding.
- **Public Meeting:** held by the Planning Department on March 31, 2017 when the 2017-2018 Annual Action Plan allocation announcements were made. The announcement included an explanation as to why the Recreation Department did not receive CDBG funding for the Woerd Avenue project.

The City will also create an online comments portal accessed through the Planning Department webpage where comments can be accepted throughout the design and construction phases. The City has utilized online comment portals for past projects and found the input to be honest and constructive.

Additionally, for those individuals without access to the internet or computers, the City will seek to send a mailing to each resident within the target neighborhood. The mailing will not only include important dates but it will also include important contact information for the City of Waltham team.

Consolidated Planning Goals

In the 2016-2019 Consolidated Plan, the City identified “Provide Accessible Public Facility Improvements” as an important goal to be achieved. This goal is defined as “creating equal access and eliminating environmental justice barrier in city wide public facilities, open spaces and infrastructure.” The Section 108 Loan Guarantee would allow the City to achieve this goal through removing the environmental justice barriers caused by the blighted former landfill property. The residents of the Southern Neighborhood District deserve to have an open space area accessible by all residents, including those requiring ADA accommodations.

Each park in Waltham has the opportunity to be expanded upon or to be improved over the years however, this is the only situation in Waltham where improvement is impossible due to the barrier of the landfill. As previously mentioned, the landfill site presents an opportunity for the residents of Waltham’s Southern Neighborhood District to be connected with the regional Charles River Reservation which offers connectivity to downtown Boston via the multiuse path network. This path network is available to be used by commuters, including those looking to bike into Boston, while avoiding traffic.

The site also lacks parking making it difficult for mobility impaired populations to access the existing parkland. The addition of parking after capping the landfill would improve access for all populations. The City intends to create a re-use plan that includes ADA compliant ramps, structures and paths throughout the new park, allowing mobility impaired residents to frequently visit, which at the current time is unavailable.

While the infrastructure and buildings surrounding the former landfill have changed over the years, the former landfill itself has never been changed. The addition of a public storage facility at a higher grade than the landfill has created excess storm water runoff into the landfill site creating flooding and stagnant water areas. The sidewalk improvements along Moody Street include detectable warning panels and ADA compliant curb cuts however, mobility impaired residents are unable to enter the site since an ADA ramp does not exist. These are only a few of the issues that could be remedied with the Section 108 Loan Guarantee funding.

Due to the overwhelming amount of environmental justice factors, the City is committed to a reuse approach which is sustainable and equitable, through mitigating the environmental challenges and improving access by residents to green space and recreation property. The project will also create employment opportunities for residents of the area through Section 3 contracting goals and will help reduce the number of residents seeking to leave the area due to the existence of the blighted site.

Recreational reuse of the landfill site increases livability and adds to a healthy and vibrant neighborhood. Increasing the amount usable area and making the connection to the Charles River Reservation would dramatically improve the recreational and open space access for community members to be active and take part in outdoor activities. The ability to walk through the landfill will increase encourage more walking for all residents and visitors.

Sources and Uses of Section 108 Loan Funds

The City has decided to pursue the Section 108 Loan Guarantee in an effort to continue testing, cap and monitor the landfill. See Attachment E for the letter from Tighe and Bond regarding the costs associated to complete the project. The funding up-front would allow the City to access the site all at one time rather than phase the project over the course of the years when our CDBG Entitlement funding becomes available. The specific use of the funds are as follows:

Landfill Testing

Sampling of landfill gas monitoring locations. Concentrations of methane, hydrogen sulfide, carbon dioxide and oxygen will be measured at the existing monitoring well locations. Sampling of Groundwater Monitoring Wells and Surface Water. Tighe & Bond will collect samples from each of the eight existing monitoring wells.

Landfill Capping

Construction and construction oversight of the traditional Massachusetts Department of Environmental Protection Solid Waste Cap – this will be one of the standard cap cross-sections including (from bottom to top) a gas venting/bedding layer, 40-mil HDPE geomembrane, sand drainage layer and organic topsoil layer. A specific cross-section will be selected for evaluation based on site characteristics and the post-closure use.

Landfill Monitoring and Park Creation

Future monitoring of the landfill gas and groundwater wells to ensure continued compliance with MassDEP regulations. Reusing the land and creating a neighborhood park on the capped parcel.

Project Structure and Participants

The City's Planning Department will be the principal developer on the project. They will manage the design, construction and inspection of the project and the City will be the borrower of the Section 108 Loan Program funds. Tighe & Bond will be the environmental specialists to oversee the project and ensure compliance with the state and federal environmental regulations. The project team is as follows:

Assistant Planning Director

Amanda Mason has a Master's Degree from Northwestern University in Public Policy and Administration. She has seven years of experience administering the Community Development Block Grant in both Massachusetts and New York State. Her daily duties as Assistant Director include oversight of the Block Grant program, financial management systems, Davis Bacon payroll documents and requests for payment.

Housing Director

Robert Waters has 23 years of broad experience in affordable housing rehabilitation, production and community development practice for the City of Waltham. Robert began his career working as Rehabilitation Specialist in the Planning Department Housing Office managing the CDBG Rehabilitation Loan Program. He advanced to the Assistant Director of Housing as a Program Manager responsible for the regulatory management of the city's Housing and Community Development Programs, including management of the Community Development Division staff. Robert's is currently the Housing Director for the city and leads the responsibility for initiating and implementing all community development priorities and managing projects established in the city's Consolidated Plan for compliance with federal laws and regulations.

City's Principal Planner

James LaCrosse Graduated from the University of Massachusetts at Amherst with BS in Landscape Architecture and has worked for the City Planning Dept as the Principal Planner for over 6 years. James has managed over 10 million in park projects throughout the community and on behalf of the City was able to secure two (2) State grants through the Executive Office of Energy and Environmental Affairs for two (2) local projects. James is currently designing 9 new park/playground projects in conjunction with the Waltham Recreation Department.

Key staff working directly on the project from Tighe & Bond includes:

Principal In Charge, David A. Murphy, P.E

David is Vice President of the firm and a professional civil engineer registered in the state of Massachusetts with 29 years of municipal solid waste experience.

Project Manager, Jaclyn M. Caceci, P.E. , LEED AP

Jaclyn has 11 years of experience in a variety of public and private engineering projects focused on civil/site design, solid waste management, water resources and waste water. She is a Professional Civil Engineer registered in the State of Massachusetts.

Landscape Architecture, James O. Calderwood, RLA

James has more than 30 years of experience in public and private site planning and design. His expertise includes the design and construction of park facilities, athletic fields and school grounds.

Consultant Services, Bruce Haskell, P.E

Bruce has over 27 years of experience in the engineering and management of solid waste facilities throughout New England. Bruce has worked on the closure of over 50 Massachusetts landfills.

Proposed Repayment Schedule and Sources

The City is requesting a HUD 108 loan of \$4,249,300 Repayment will be made solely from the City's future CDBG annual entitlements. The City will offer a full faith and credit pledge. The assets will be owned by the City of Waltham.

CDBG Program Eligibility

The construction, reconstruction, or installation of public facilities (including street, sidewalk, and other site improvements) are eligible activities under **24 CFR 570.703 (l)**

National Objective

The City's Woerd Avenue Revitalization project meets the National Objective of Low-Moderate Income Area (LMI) Benefit (24 CFR Part 570.208(a) (1)). An LMI Area Benefit is "An activity, the benefits of which are available to all the residents in a particular area, where at least 51 percent of the residents are low-income and moderate-income persons. This objective is met based on the Low-Moderate Income percentage in census tract 3686. The Low-Moderate Income total percentage is 51.738%

Attachment A



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Northeast Regional Office • 205B Lowell Street, Wilmington MA 01887 • 978-694-3200

Charles D. Baker
Governor

Matthew A. Beaton
Secretary

Karyn E. Polito
Lieutenant Governor

Martin Suuberg
Commissioner

JUL - 5 2016

Amanda Mason
Assistant Director, Planning Department
City of Waltham, Government Center
119 School Street
Waltham, Massachusetts 02451

Re: WALTHAM – Solid Waste Management/COR
Waltham Landfill
Woerd Avenue
FMF #39834
BWP SW45 / Any Facility – Alternative Review
Transmittal Number: X269729
Proposed CAAA Scope of Work and Supplemental Environmental Sampling Program
CONDITIONAL APPROVAL

Dear Ms. Mason:

The Massachusetts Department of Environmental Protection, Northeast Regional Office, Bureau of Air and Waste, Solid Waste Management Section ("MassDEP") has reviewed your application, category BWP SW45 *Alternative Review*, Transmittal Number: X269729 (the "Application"), for the Waltham Landfill located on Woerd Avenue in Waltham, Massachusetts (the "Landfill"). Tighe & Bond of Portsmouth, New Hampshire ("Tighe & Bond"), prepared and submitted the Application to MassDEP on behalf of the City of Waltham (the "City").

Based on discussions at a meeting held at MassDEP's offices on December 15, 2015, the City submitted the Application in order to resume the assessment and closure process at the Landfill. The Application outlines a scope of work for preparing a Corrective Action Alternatives Analysis ("CAAA") for the Landfill in accordance with MassDEP's Solid Waste Management Regulations (310 CMR 19.000) and MassDEP's Landfill Technical Guidance Manual, dated May 1997. The CAAA will focus on the following areas:

- potential corrective actions related to the appropriate final cap for the Landfill;
- remediation activities in the area of Cram's Cove near the Landfill; and
- alternatives to address historic detections of subsurface landfill gas in monitoring well LFG-1.

The Application also outlines a proposed supplemental environmental sampling program for groundwater in existing monitoring wells, landfill gas in existing monitoring wells, wetland sediments in Cram's Cove adjacent to the Landfill and a review of information on the historic assessment and remediation activities on abutting properties. The results of the supplemental environmental sampling program are proposed to be submitted to MassDEP per the requirements of 310 CMR 19.000.

As proposed in the Application, the supplemental environmental sampling program will proceed immediately upon receipt of MassDEP approval and the CAA permit application will follow within 60 days of the submission of the report on the supplemental environmental sampling.

DECISION

MassDEP has reviewed the Application pursuant to 310 CMR 19.000, the Solid Waste Management Regulations, and for consistency with MassDEP's Landfill Technical Guidance Manual (DEP Publication No. SWMID: 001-91-G, Rev 5/97). MassDEP approves the Application, subject to the City's compliance with the conditions of this decision imposed by MassDEP pursuant to 310 CMR 19.043(1), *Items Subject to Conditions*.

This decision is issued by MassDEP pursuant to M.G.L. Chapter 111, § 150A and the implementing regulations thereunder at 310 CMR 19.000, the Solid Waste Management Regulations. This decision does not relieve the City, or any other person, of the responsibility to comply with all other applicable federal, state and local statutes, regulations and requirements.

CONDITIONS

1. The City shall comply with this permit and the requirements of 310 CMR 19.000, including, but not limited to, the requirements established at 310 CMR 19.043(5), *Standard Conditions*.
2. The City shall comply with 310 CMR 40.0000, the Massachusetts Contingency Plan, including but limited to section 310 CMR 40.0114: Solid Waste Management Facilities.
3. The City shall conduct all environmental monitoring at the Landfill, and report all monitoring results to MassDEP, in accordance with the requirements of 310 CMR 19.000, including, without limitation, the reporting and notification requirements of 310 CMR 19.132: Environmental Monitoring Requirements.
4. Within 60 days of MassDEP's receipt of a letter report summarizing the results of the supplemental environmental sampling program, the City shall submit to MassDEP for review and approval, a proposed Interim Environmental Monitoring Plan, together with a permit application, category BWP SW45 *Alternative Review*. The Interim Environmental Monitoring Plan shall include any new monitoring locations as well as replacement or repair of any existing monitoring locations that are damaged and cannot be sampled. Within 45 days of MassDEP's approval of the Interim Monitoring Plan, the City shall begin implementation of the Interim Plan, as approved.
5. Within 60 days of MassDEP's receipt of a letter report summarizing the results of the supplemental environmental sampling program, the City shall submit to MassDEP for review and

approval, a Corrective Action Alternatives Analysis report for the Landfill, together with a permit application, category BWP SW 24 *Corrective Action Alternatives Analysis*.

NOTICE OF RIGHT TO APPEAL

The City of Waltham (the "City") is hereby notified that it may within twenty-one (21) days of the date of issuance of this decision file a request that this decision be deemed a provisional decision under 310 CMR 19.033(4)(b), by submitting a written statement of the basis on which the City believes it is aggrieved, together with any supplemental materials. Upon timely filing of such a request, the decision shall be deemed a provisional decision with an effective date twenty-one (21) days after the MassDEP's receipt of the request. Such a request shall reopen the administrative record, and the MassDEP may rescind, supplement, modify, or reaffirm its decision. Failure by the City to exercise the right provided in this section shall constitute a waiver of the City's right to appeal.

Appeal. Any person aggrieved by the issuance of this decision may file an appeal for judicial review of said decision in accordance with the provisions of M.G.L. c. 111, s. 150A, and M.G.L. c. 30A, not later than thirty (30) days following the date of issuance of the final decision. The standing of a person to file an appeal and the procedures for filing such appeal shall be governed by the provisions of M.G.L. c. 30A. Unless the person requesting an appeal requests and is granted a stay of the terms and conditions of the decision by a court of competent jurisdiction, the decision shall remain effective.

Notice of Action. Any aggrieved person intending to appeal this decision to the Superior Court shall first provide notice to the MassDEP of their intention to commence such action. Said notice of intention shall include the MassDEP's file number and shall identify with particularity the issues and reasons why it is believed the decision was not proper. Such notice shall be provided to the Office of General Counsel of the MassDEP and the Regional Director for the regional office which processed the application at least five (5) days prior to the filing of an appeal. The appropriate addresses to which to send such notices are:

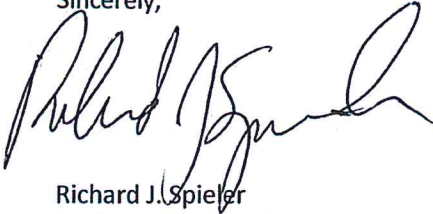
General Counsel
Massachusetts Department of Environmental Protection
One Winter Street – 3rd Floor
Boston, MA 02108

Eric Worrall, Regional Director
Massachusetts Department of Environmental Protection
Northeast Regional Office
205B Lowell Street
Wilmington, MA 01887

No allegation shall be made in any judicial appeal of this decision unless the matter complained of was raised at the appropriate point in the administrative review procedures established in those regulations, provided that a matter may be raised upon a showing that it is material and that it was not reasonably possible with due diligence to have been raised during such procedures or that matter sought to be raised is of critical importance to the environmental impact of the permitted activity.

Should you have any questions relative to this approval, please contact Richard Spieler at phone number 978-694-3317.

Sincerely,



Richard J. Spieler
Environmental Engineer
Solid Waste Management

Sincerely,



Mark G. Fairbrother
Section Chief
Solid Waste Management

MGF/RJS/rjs

cc:

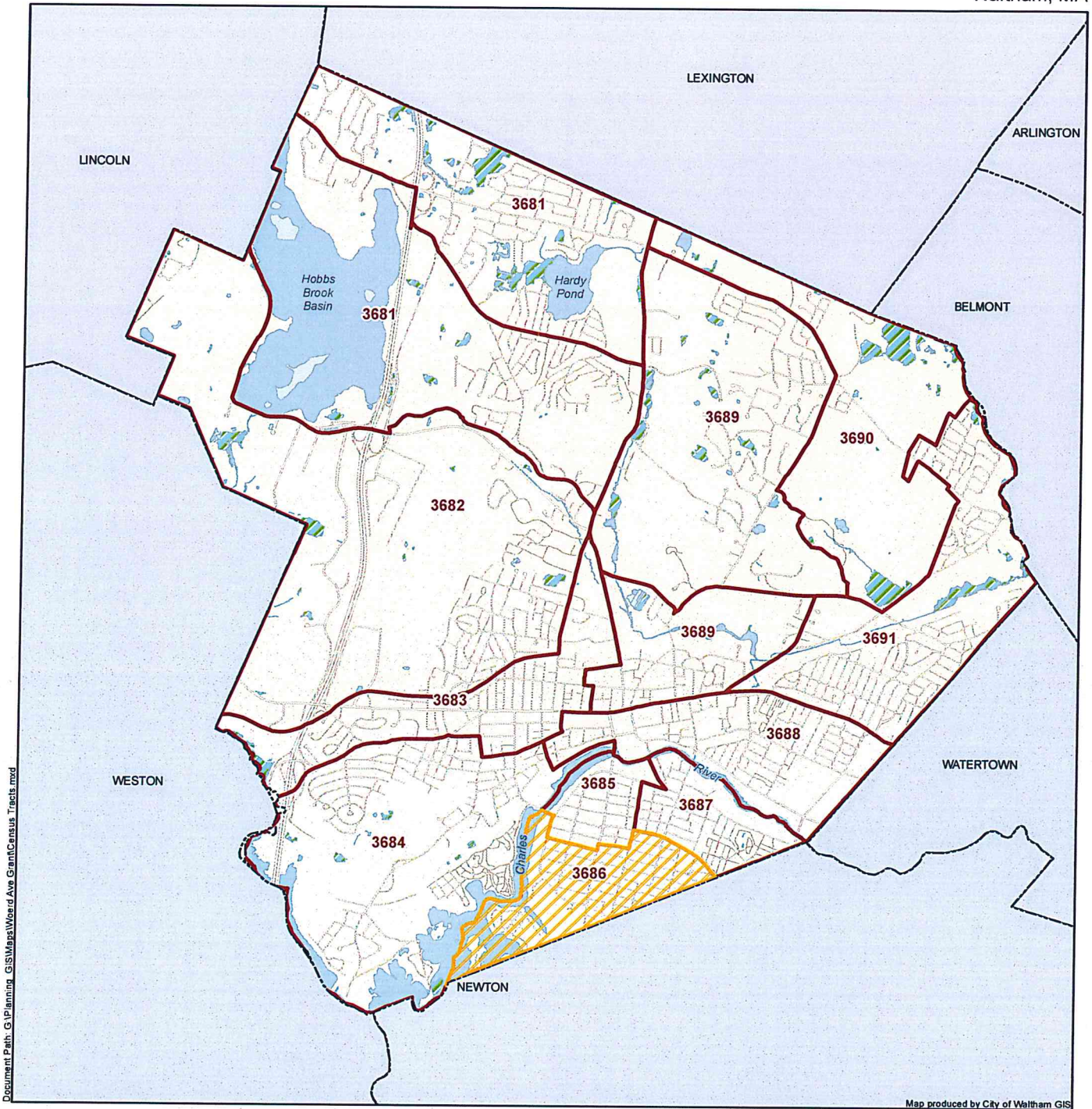
Waltham Board of Health
119 School Street
Waltham, MA 02451
Attn: John P. Zuppe, Director of Public Health

David A. Murphy, P.E.
Tighe & Bond
177 Corporate Drive
Portsmouth, NH 03801

Attachment B

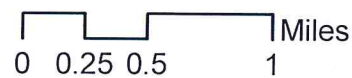
Census Tracts

Waltham, MA



Legend

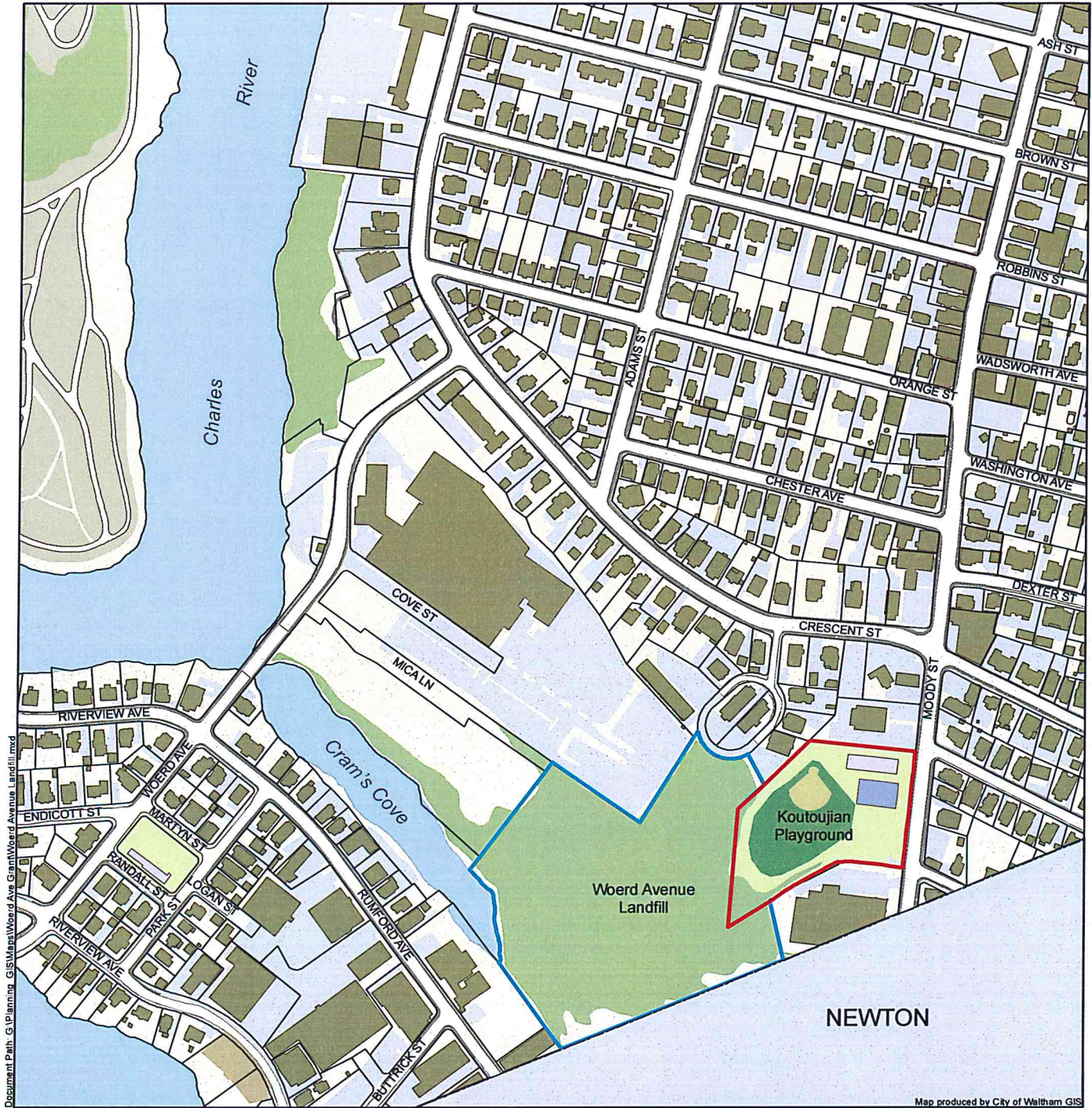
- | | |
|---|--|
|  Census Tract 3686 |  Water Bodies |
|  City Boundary |  Upland |
|  Census Tract Boundaries |  Wetland Area |
| |  Streets |



Attachment C

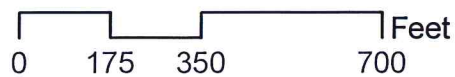
Woerd Avenue Landfill

Waltham, MA



Legend

- | | |
|-----------------------|------------------|
| Park Boundary | Cemetery |
| Woerd Avenue Landfill | Park |
| Parcel Lines | Basketball Court |
| Building Footprints | Infield |
| Paved Area | Grass |
| Unpaved Area | Playground |
| Water Bodies | City Boundary |
| Vegetated Area | |



Attachment D

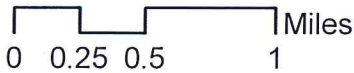
Charles River Reservation

Waltham, MA



Legend

Charles River Reservation	Cemetery
Woerd Avenue Landfill	Park
Water Bodies	City Boundary
Upland	
Wetland Area	
Vegetated Area	



Attachment E

Woerd Ave Landfill Closure Project Budgeting

TO: Robert Waters, Planning Department
FROM: Jaclyn M. Caceci, PE and David A. Murphy, PE
DATE: April 13, 2017

It is our understanding that the City of Waltham (City) would like a budgetary estimate to complete the Woerd Ave Landfill Project for planning purposes. Below is a brief summary of the anticipated tasks and associated costs necessary to close and cap the Woerd Ave Landfill and construct a passive recreation park on the site. As with any landfill in Massachusetts, the site will need continued monitoring for a post-closure period after the site is capped. There is an estimate of these ongoing monitoring costs included in this memorandum as well as the permitting and construction.

Massachusetts Department of Environmental Protection (MassDEP) has a four step permitting process to properly assess and close landfill sites. This process starts with an Initial Site Assessment (ISA), followed by a Comprehensive Site Assessment (CSA), a Corrective Actions Alternatives Analysis (CAAA) and a Corrective Action Design (CAD). Currently, we are at the 3rd step (and under contract) of preparing the CAAA to be submitted to MassDEP for review and approval. The CAAA evaluates different alternatives for closing the landfill, weighs the costs and benefits of different alternatives, and recommends one of the alternatives to pursue. As required by the approved CAAA scope, we are also preparing a proposed environmental monitoring program for the site.

Among the recommendations included in the CAAA is the excavation of test pits in select areas to further delineate the approximate limits of the landfill, and installation of six groundwater monitoring wells and ten landfill gas monitoring wells. The proposed monitoring plan will include quarterly landfill gas monitoring and semiannual groundwater and surface water monitoring in Cram's Cove. The effort for the above test pits, monitoring well installation and initial year of quarterly and semi-annual monitoring would be approximately \$90,000. In order to keep costs for the City to a minimum, this estimate assumes that the City would be able to provide equipment, operator(s) and laborers for the proposed test pit excavation. It is also assumed that the City would obtain the necessary permissions for test pits to be conducted on adjacent properties where the waste limits may extend onto, as necessary. Note that this estimate includes the first year of monitoring. The monitoring will have to continue for the post-closure period determined by MassDEP (typically 30 years).

Once MassDEP approves the CAAA, the project can proceed to design of the closure, followed by construction and then project closeout, including a Construction Completion Permit Application required to be submitted to MassDEP.

It is anticipated that the CAAA permit application will be submitted to MassDEP during Spring of 2017. Once the City receives approval of the CAAA, preparation of the CAD, or closure design, can commence. This can likely be submitted to MassDEP in Fall of 2017 and would be an approximately \$70,000 effort.

The CAD submittal includes permit application forms, a report detailing the closure design, design drawings, technical specifications and a QA/QC plan. The design drawings submitted to MassDEP will be permit level plans. It is anticipated that the design drawings will include an estimated 8 sheets inclusive of a cover sheet, existing conditions, site preparation, gas

mitigation, final closure, and three detail sheets. Technical specifications will be prepared to complement the design drawings and supplement the CAD submittal.

As previously discussed with the City, there are two ways that this project can be carried out. Under a conventional approach, closure construction would be completed, followed by design and construction of the proposed park. A more cost effective alternative would be to design the park and have the construction of the park take place simultaneous to the closure. This would be beneficial because there are limitations put on the activities and loading that can occur on a landfill cap, and if the end use is accounted for during the closure design it would ensure that the City would get the final product that they are looking for and any necessary protection measures could be incorporated into the design.

For the reasons stated above, it is suggested that a Post Closure Use Permit (PCUP) Application be submitted to MassDEP simultaneous to the CAD permit application. This permit is required if the site owner intends to use a closed landfill site for another use, such as the proposed use of the Site as a passive recreation park. The design of the park will have to be submitted with this application, however, the design is not an included item. This PCUP would be an approximately \$20,000 effort.

The park design will be done with the assistance of a landscape architect and the effort can vary significantly depending on the amenities and features that the City envisions. We have not included a budget for this component at this time.

Due to the proximity of this site to Cram's Cove, designated as jurisdictional wetlands, a Notice of Intent (NOI) will also have to be filed with the City of Waltham Conservation Commission to complete the closure of the landfill. The scope of the wetlands permitting includes resource area delineation, preparation and filing of the NOI, attendance at one site walk and attendance at one public hearing. The wetlands permitting would be approximately a \$15,000 effort.

For projects with such a significant community impact, holding charrettes and conducting neighborhood outreach events can be a key contributing factor to the overall success of the project. These activities are designed to engage the community, raise awareness of project goals and schedule, and encourage stakeholder input into the park concepts and design. We have put a placeholder budget of \$15,000 in for this effort assuming up to two charrettes.

It is assumed that local permitting for this project will be necessary. We suggest that there be a meeting or discussion with the City of Waltham Zoning Officer early in the design process to confirm the permitting pathway (i.e. Site Plan Approval and/or Special Permit) that will be necessary. If one local permit is necessary, we suggest a budget of \$20,000 for this effort.

After permitting the closure, Tighe & Bond can assist with the bidding phase services, including preparation of bid documents. Assuming that the City would provide the front end of the contract, Tighe & Bond would assist with the preparation of the technical specifications, any modifications that would be necessary to bring the permit level plans to construction documents, a bid tab, and attendance at a prebid meeting. Tighe & Bond can also assist the City with evaluating the bid results and recommending a contract award. This effort would be approximately \$12,000.

This site is about 6.7 acres, most of which is landfill. For a standard landfill closure, the construction costs are typically about \$200,000 per acre. Additionally, this site is currently wooded and would have to be cleared and destumped prior to the cap construction, at an estimated cost of up to \$10,000 per acre. Given the costs above and an approximately 7 acre site, an estimated budget of \$1,460,000 is suggested for closure construction at the site.

Construction phase services include:

- Part and full time construction oversight
 - Typically, MassDEP requires full time construction observation for capping construction, as well as any construction on top of a capped landfill.
- Review of shop drawings, material submittals, RFIs, source and conformance test results before and during construction
- Review of construction topography submittals for subgrade and subsequent cap layers to verify conformance with design plans
- Correspondence with project team including City of Waltham, contractor, geosynthetic contractor, and MassDEP regarding project related issues before and during construction.
- Attendance at the pre-construction meeting, liner pre-installation meeting, and weekly construction progress meetings to discuss construction progress, and address project issues, as well as record, draft, finalize and distribute meeting minutes after each meeting

Assuming that construction observation will not be required during the clearing, grading, and shaping phase of this project, and that the construction phase of the closure will be 3 months (13 weeks) in duration, this effort would be approximately \$145,000. This effort is dependent on the hours and duration of construction and may need to be modified to reflect actual hours and project duration if different than estimated herein. This task also includes a project management component during construction activities. Project management includes correspondence between the construction observer and the project engineer in the office, in addition to working through construction issues that may occur from time to time in the field.

The construction of the park on the landfill will increase the estimate from above. This cost is dependent on the level of amenities, plantings, shrubs and trees that the City is looking for. Depending on the plantings desired the depth of the loam and substrate layers could change and change the capping/park construction costs significantly. Park construction could range from \$200,000 to over \$2,000,000 depending on what the City wants.

Following construction, a Construction Completion permit application will have to be submitted to MassDEP. The submittal will include a cover letter, transmittal form, MassDEP permit application form and narrative summarizing the construction and necessary QA/QC testing completed. Accompanying the Construction Completion permit application are appendices containing material source and conformance testing, shop drawings, submittals, MQC and CQC testing of the cap system provided by the contractor and geosynthetics contractor and record drawings supplied by the contractor. \$16,000 should be budgeted for this effort.

It is important to note that the estimates above assumes that MassDEP will not require dredging or special efforts in and around the Cram's Cove area. If such activities are required there would be additional permitting and construction costs associated with this project such as Army Corps of Engineers, MEPA and Section 401 permitting. The estimated permitting costs also assume a conventional permitting schedule without extensions/appeals.

Budget Summary Table

Groundwater / Landfill Gas Monitoring Well Installation and First year of Environmental Monitoring	\$	90,000
CAD Permit	\$	70,000
Conservation Commission NOI	\$	15,000
Public Charrettes and Neighborhood Outreach	\$	15,000
Local Permitting (*Assumed 1 local permit)	\$	20,000
Post Closure Use Permit	\$	20,000
Bidding Assistance	\$	12,000
Capping Construction	\$	1,460,000
Park Design, Construction & Oversight	\$	2,000,000
Construction Phase Services (Capping) (Engineering)	\$	145,000
Construction Completion Report	\$	16,000
 Subtotal	\$	 3,863,000
10% Contingency	\$	386,300
 Total	\$	 4,249,300