

# **Tookany/Tacony-Frankford Integrated Watershed Management Plan (TTFIWMP) 5-Year Implementation Plan 2006 – 2011 PWD commitment \$18,000,000**

This Implementation Plan (IP) builds upon an already significant body of work developed by the Philadelphia Water Department in cooperation with the Tookany/Tacony-Frankford Watershed Partnership. The Tookany/Tacony-Frankford Integrated Watershed Management Plan (TTFIWMP) was completed in the winter of 2005. This planning effort incorporated both regulatory and non-regulatory programs including the Phase I and Phase II stormwater regulations, the PA Act 537 sewage facilities planning program, the PA Act 167 stormwater management program, EPA's Combined Sewer Overflow (CSO) Control Policy and PA DCNR's River Conservation Planning program while also combining the ideas and concerns of watershed stakeholders in order to create a comprehensive vision for restoring this region.

The TTFIWMP included guidelines for implementing the management options identified by our watershed partners for areas outside the City of Philadelphia over the upcoming 20 year planning horizon. Implementation projects and initiatives within the guidelines have undergone intensive screening to determine that they are both cost-effective and feasible under the specific conditions found in the Tookany/Tacony-Frankford Creek watershed.

This implementation plan is designed to provide a more detailed blueprint for implementation of projects within the City of Philadelphia during the initial five-year period (2006-2011), though many projects have already been initiated. This plan represents the first steps in the simultaneous implementation of projects related to Targets A, B, and C. These environmental targets were established to guide the overall implementation strategies while always keeping our eyes on the long-term goals of the program.

Note that each project being implemented will require a feasibility study, followed by conceptual, preliminary, and final design reports that will provide successively more detail.

# Planning, Outreach & Reporting

## PWD Commitment: \$1,000,000

It is imperative that the existing Tookany/Tacony-Frankford Watershed Partnership not only continue to function as a driving force within the watershed, but that it also evolve into an implementation oriented entity to take on the responsibility of executing many of the projects identified during the integrated planning process. These projects have been identified for implementation over a 20 year period, broken into five-year increments. Progress must be tracked and reported in order to illustrate progression as implementation moves forward.

### P-1. Maintain Watershed Partnership

In the summer of 2005, the Tookany/Tacony-Frankford Watershed Partnership filed incorporation papers with the federal government in order to evolve its organizational structure from that of a loose alliance of stakeholders into a formal, 501(c)3 non-profit organization. The Partnership has a mission focused on implementation of the plan, and is now structurally aligned to do so. PWD will take part in the new organization, as well as move forward with its own implementation plan. PWD will support the newly formed organization in developing and carrying out future implementation efforts.

| Priority Tasks   | Projected Timeline: |
|--|---------------------|
| 1. Establish Permanent 501c3 Watershed Organization:   | End of 2005         |
| 2. Develop and secure funding for project implementation:<br><br>PWD will assist the TTF Partnership in the pursuit of funding for individual project implementation   | Begin in 2006       |
| 3. Identify and incorporate high-priority/"Marketing" messages from the TTFIWMP<br><br>Produce a document containing a short list of high-priority messages (e.g., litter and dumping, good housekeeping practices for homes and businesses, etc.) to be included in all community relations work to help support the goals of the plan. (Should include a plan for distribution of the messages, including targeted groups and means of distribution) | 2006                |
| 4. Incorporate high-priority/"Marketing" messages in all outreach activities:<br><br>Work interdepartmentally with PWD to incorporate messages in outreach materials. Additionally work with TTF Partnership to achieve the goals for distribution   | 2006 - 2011         |

### **P-2. Track WMP programs and progress**

Develop and maintain a performance tracking system for plan progress. This system would track projects and monitored improvements using the indicators from the TTFIWMP.

| <b>Priority Tasks</b>  | <b>Projected Timeline:</b> |
|--|----------------------------|
| 1. Inventory all TTF projects and initiatives related to TTFIWMP implementation, create database of information:             | Begin in 2006              |
| 2. Utilize database as the clearinghouse for implementation project related information (budget, lead contact, status etc.): | 2006-2011                  |
| 3. Utilize for annual reporting purposes:  | Begin in 2007              |

### **P-3. Annual report**

CDM and OOW staff will collaborate to produce an annual report at the end of each fiscal year.

| <b>Priority Tasks</b>  | <b>Projected Timeline:</b> |
|--|----------------------------|
| 1. Update status of each task proposed in this implementation plan:                            | Annually, begin 2007       |
| (a) Write recommendations for moving each task forward in the following year:                  | Annually, begin 2007       |
| 2. Initiate Watershed Indicator Status Update:   | Biannually, begin 2008     |
| (a) Evaluate all 21 Watershed Indicators, document any changes:                                | Biannually, begin 2008     |
| (b) Write memo documenting status changes for sharing with watershed partners:                 | Biannually, begin 2008     |
| 3. Update the list of projects proposed, in progress, or completed in the given year:          | Annually, begin 2007       |
| 4. Monitor status and results for any projects that have been completed within the given year: | Annually, begin 2007       |

**P-4. Update WMP and supporting technical documentation**

The TTFIWMP will be updated at the end of the permit cycle. Information in the annual reports will be consolidated, progress will be assessed, and a new 5-year implementation plan will be produced.

| <b>Priority Tasks</b>  | <b>Projected Timeline:</b> |
|--|----------------------------|
| 1. Evaluate Biological Monitoring Data collected in 2010:<br><br>PWD Biological monitoring program is scheduled to be updated every five years. (Last program update was 2005) | 2011                       |
| 2. Evaluate accomplishments and recommendations of each Annual Report:   | 2010 - 2011                |
| 3. Evaluate Watershed Indicators, update with new information:   | Biannually,<br>begin 2008  |
| 4. Update TTFIWMP with new information:  | 2011                       |

# Target A

## PWD Commitment: \$9,100,000

This target is designed to help achieve water quality standards in the stream during dry weather periods. The focus is on the elimination of sources of sewage discharge during dry weather, as well as trash removal and litter prevention.

### A-1. Sewer Rehabilitation and Maintenance

Sewers must be assessed to identify segments in need of rehabilitation, particularly where leakage is directly flowing into the stream. In separate sewered areas, a detection program for potential cross-connections is needed in order to eliminate dry weather flows.

Maintenance of sewers includes activities required to keep the system functioning as it was originally designed and constructed. Any reinvestment in the system, including routine maintenance, capital improvements for repair or rehabilitation, inspection activities, and monitoring activities are generally classified as maintenance.

| Priority Tasks   | Projected Timeline: |
|--|---------------------|
| 1. Continue PWD Sewer Inspection and Cleaning Program: <ul style="list-style-type: none"><li>a. Identify Sewers in need of Rehabilitation:</li><li>b. Initiate Sewer repairs:</li><li>c. Create a memorandum with map showing all problem areas identified:</li><li>d. Provide information from the stream assessment regarding exposed and/or leaking sewers to sewer maintenance:</li><li>e. Track and document sewer repairs:</li></ul> | 2006 - 2011         |

## A-2. Source Controls

Runoff pollution has severely impacted the stream. Ordinances must be evaluated, updated and enforced in order to ensure the reduction of pollutant sources such as pet waste and dumping. Street sweeping, inlet maintenance and additional NPDES related measures must be enforced.

| Priority Tasks  | Projected Timeline:   |
|---|---|
| 1. Implement 6 Minimum Control Measures for NPDES Stormwater Phase II:  | 2006 - 2011   |
| 2. Continue PWD Inlet Cleaning & Maintenance Program:<br><br>(a) Work with Inlet Maintenance team to develop an ongoing schedule of maintenance for this watershed area:  | 2006 - 2011   |
| 3. Continue City of Philadelphia Street Sweeping Program:<br><br>(a) Meet with Philadelphia Streets Department to gather information regarding current street sweeping programs and scheduling:<br><br>(b) Work with the Philadelphia Streets Department to develop a city-wide schedule of sweeping:                 | 2006 - 2011   |
| 4. Review Enforcement of City of Philadelphia Pet Waste Disposal and Litter/Dumping Related Ordinances:<br><br>(a) Develop recommendations for improvement:<br><br>(b) Discuss changes with implementing agencies:<br><br>(c) Identify access points with the Fairmount Park Commission:<br><br>(d) Monitor progress: | Mid-2006<br><br>2007<br><br>Mid-2007<br><br>2007<br><br>2008 - 2011 |
| 5. Continue and expand upon outreach and assistance programs to other municipalities:<br><br>(a) Outreach to municipalities regarding status of plan implementation:<br><br>(b) Workshops and programs to share information about Stormwater BMPs:  | 2006 - 2011   |
| 6. Continue the efforts of the Philadelphia Inter-Governmental Scrap and Tire Yard Task Force:<br><br>Program response to complaints about operation of scrap metal and auto salvage businesses operating in violation of regulations   | 2006 - 2011   |

### A-3. Stream Clean-up

Target A is also associated with improving the esthetic quality of the stream so that it can be viewed and treasured as a resource. Stream clean-ups are a way to achieve this while also involving residents and volunteers in the process.

The Waterways Restoration Unit was created in order to assist with the removal of litter and heavy debris from streams, maintain habitat improvements (fish ladders, FGM, elimination of plunge pools).

| <b>Priority Tasks</b>   | <b>Projected Timeline:</b> |
|---|----------------------------|
| 1. Continue the efforts of the Waterways Restoration Unit:<br><br>(a) Inspect and assess the condition of sewerage infrastructure along streams:<br><br>(b) Identify, prioritize, & maintain a list of obstructions, aesthetic nuisances, and debris removal needs:<br><br>(c) Develop and maintain a corrective action plan:<br><br>(d) Investigate ROW complaints and update action plan: | 2006 - 2011                |

# Target B

## PWD Commitment: \$2,300,000

This target is focused on improving the in-stream conditions of the Tookany/Tacony-Frankford Creek. Implementation projects are aimed at habitat improvements as well as measures to provide the opportunity for organisms to avoid high velocities during storms. Improvements to the number, health, and diversity of the benthic invertebrate and fish species are anticipated as a result of these measures.

### B-1. Stream Restoration

A high priority is placed on the creation of a restoration master plan for the Tookany/Tacony-Frankford Watershed. The plan will include recommendations from the wetland assessment program, information from the stream assessments, WRU activities, and input from the Fairmount Park Commission. The resulting document could be as simple as a large map showing outlines and key elevations for all the projects together – which would then become a check list for the creation of a detailed design for a given reach. A schedule should be outlined for high priority locations in stream restoration.

| Priority Tasks   | Projected Timeline:   |
|--|-----------------------|
| 1. Develop an FGM-based stream restoration master plan:  | Mid-2006 through 2007 |
| (a) Demonstration Project #1 – Mill Run at 7 <sup>th</sup> and Cheltenham:<br><br>Include bank revetment and channel modifications to the stormwater outfall. The goal is to clear the concrete pad at the outfall and re-grade 90 linear feet of the natural channel bottom and stabilize the stream banks. | 2006                  |
| (b) Demonstration Project #2 – Awbury Arboretum:<br><br>This multi-phased project includes; riparian buffer restoration , wetland restoration, meadow enhancement, stream daylighting, and stormwater diversion  | 2005-2007             |
| (c) Demonstration Project #3 – Whitaker Ave:<br><br>Include stream bank stabilization using soil bioengineering, and natural channel design measures that protect infrastructure and the environment   | 2006-2008             |
| (d) Develop specific projects for large-scale restoration:<br><br>Conceptual design of large scale stream restoration should be developed based on recommendations of FGM study  | 2008 - 2011           |

### **B-2. Wetlands Restoration and Construction**

There are currently several large projects taking place (Riverfront development along the Delaware River, and the Airport expansion) that will require significant mitigation of wetlands and open water. Stream restoration provides an ideal opportunity to provide projects that serve as mitigation for the planned development projects, and that fit within the overall goals of the watershed plan.

| <b>Priority Tasks</b>  | <b>Projected Timeline:</b> |
|--|----------------------------|
| 1. Complete Wetland Master Plan – including prioritization of restoration opportunities:<br><br>(a) Initiate Demonstration Project #1:<br><br>i. Design Demonstration Project #1:<br><br>ii. Construct Demonstration Project #1: | 2006 - 2011                |

### **B-3. Protect & Enhance Riparian Corridors**

It is imperative that PWD and the TTF Watershed Partnership continue to work closely with the Fairmount Park Commission in order to meet the mutual goal of protecting and enhancing the riparian corridor along the Tookany/Tacony-Frankford Creek.

| <b>Priority Tasks</b>   | <b>Projected Timeline:</b> |
|---|----------------------------|
| 1. Assist Fairmount Park Commission with Restoration Projects:<br><br>PWD can offer assistance through project prioritization with the FGM and wetlands assessment data, project design and pursuit of funding                                | 2006 - 2011                |
| 2. Invasive species controls:<br><br>The FPC ES&ED has implemented invasive species control program in Fairmount Park portion of the stream corridor; recommended that initiative be expanded to the remaining natural areas of the corridor. | 2006 - 2011                |
| 3. Assist Fairmount Park Commission with volunteer clean-up programs:<br><br>Work with TTF Partnership to support clean-up efforts  | 2006 - 2011                |

# Target C

## PWD Commitment: \$5,600,000

This target is designed to improve water quality standards in the stream during wet weather periods. These projects are designed to reduce and improve the quality of storm water discharges and to reduce CSOs.

### C-1. CSO Controls

The use of Real Time Control is designed to utilize the maximum in-system storage capacity of the sewer system by using a computer controlled CSO outfall/regulator gate that uses level monitors to control the position of the dry-weather outlet (DWO) gate and tide gate at each location. This allows the capture and delivery to the treatment works of flow at the maximum rate at which it can be treated.

| Priority Tasks                      | Projected Timeline: |
|-------------------------------------|---------------------|
| 1. Real Time Control Implementation | 2006 - 2011         |

### C-2. Stormwater Management Regulations

Act 167 Stormwater Management Planning is currently underway within this watershed area. The resulting model ordinance will allow for watershed-wide management of stormwater runoff. The city of Philadelphia must implement and enforce regulations city-wide to reflect the ordinance adopted by their Montgomery County counterparts in the watershed.

| Priority Tasks  | Projected Timeline: |
|---|---------------------|
| 1. Work with Montgomery County on completion of Act 167 Stormwater Management Planning and creation of model ordinance for the TTF Watershed:   | 2006 - 2008         |
| 2. Enforce new city-wide stormwater regulations:  | 2006 - 2011         |
| 3. Establish review procedures and staff for implementation of Urban Stormwater BMP manual:   | 2006                |
| 4. Complete SW Rate Structure Review and make Recommendations:<br><br>(Cost of stormwater management should be fully reflected in rates charged to homeowners, businesses, and land owners in the form of stormwater fees.) | 2006 - 2010         |
| 5. Begin implementing city-wide SW Rate Structure Improvements:   | 2010                |

### C-3. Stormwater BMP Projects

“Model” Stormwater BMP demonstration projects will be designed and constructed illustrating the various types of on-site stormwater management techniques that can be applied in urban areas. The goal is to provide local examples of BMPs recommended under the new stormwater regulations that reduce the volume of runoff entering the sewer system as well as reduce the pollutant loads within the runoff whenever possible.

Initial load reduction targets for parameters such as stormwater flow, metals, total suspended solids, and bacteria have been set at 20%, with the goal of continuous reassessment of the load reduction target as projects are implemented.

| Priority Tasks   | Projected Timeline: |
|--|---------------------|
| 1. Complete BMP implementation plan, site list & prioritization of projects:   | 2006 - 2008         |
| 2. Demonstration Projects:   |                     |
| (a) Martin Luther King Jr. High School:<br><br>Will result in detaining and/or infiltrating first 1.5 inches of runoff from parking lots, thus diverting nearly 2.5 million gallons of runoff from combined sewer system each year   | 2006 - 2011         |
| (b) Bureau of Laboratory Services Low Impact Development (LID) Retrofit Project:<br><br>This retrofit could include the implementation of multiple BMPs, including an infiltration trench, cisterns, a green roof, and a bioretention system.  | 2006 - 2011         |
| (c) Implement Demonstration Project #3:<br><br>Demonstration projects will include the implementation of BMPs such as median infiltration, porous pavement or green roof technology.   | 2006 - 2011         |
| (d) Implement Demonstration Project #4:  | 2006 - 2011         |
| (e) Implement Demonstration Project #5:  | 2006 - 2011         |
| (f) Implement inlet & roof leader disconnect project (Located at Awbury Arboretum):  | 2006 - 2011         |
| (g) Initiate a Targeted Rain Barrel Program<br><br>PWD and the TTF Partnership have already conducted a Rain Barrel Pilot Project. Based upon successes and lessons learned, a second program would be targeted to an individual sewershed and monitored for the reduction of stormwater contribution. | 2006 - 2011         |

| <b>Priority Tasks</b>  | <b>Projected Timeline:</b> |
|--|----------------------------|
| (h) Initiate and/or invigorate TreeVitalize program in the TTF Watershed         | 2006 - 2007                |
| i. Set 5 year goals for tree planting  | 2007 - 2008                |
| ii. Plant trees  | 2008 - 2011                |
| 3. Initiate incentive grant programs for stormwater BMP implementation city-wide | 2007 - 2010                |