



# **Franklin Borough**

## **MUNICIPAL STORMWATER MANAGEMENT PLAN**



Prepared by

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### Owner and Operating Entity:

Franklin Borough  
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## **I. Introduction**

As result of the U. S. Environmental Protection Agency's (USEPA) Phase II rules published in December 1999, the New Jersey Department of Environmental Protection (Department) has developed the Municipal Stormwater Regulation Program. This program addresses pollutants entering New Jersey waters from certain storm drainage systems owned or operated by local, county, state, interstate, or federal government agencies. USEPA regulations refer to these systems as "municipal separate storm sewer systems" (MS4s). As a result of USEPA's new Phase II rules, the Department's Municipal Stormwater Regulation Program has issued New Jersey Pollutant Discharge Elimination System (NJPDES) permits to municipalities throughout the state, as well as public complexes, and highway agencies. Franklin Borough is one of the Tier B municipalities included in this program, having received its General Permit effectively on April 1, 2004.

It is widely understood that stormwater/nonpoint sources are the largest remaining major source of pollutants in our waters. It is estimated that up to 60 percent of our existing water pollution problems are attributable to stormwater/nonpoint pollution. The quality of our surface and ground waters is directly related to the health of our ecosystems and the quality of our lives. Impaired water quality impacts shellfish production, tourism at beaches and coastal communities, and increases drinking water treatment costs. Stormwater/nonpoint pollution can often be linked to our daily activities and lifestyles. The way we plan communities, build shopping centers, commute, and maintain lawns all impact stormwater quality. Many times people do not know or understand that there are alternatives. For example, homeowners can have a green lawn without massive doses of fertilizers and pesticides; pet owners should deposit pet waste in the trash or in the toilet and not leave it at the curb. Often there is a lack of public awareness. People are unaware that storm drains often discharge directly to water bodies. When people allow motor oil, trash, and their pet's waste to enter the storm sewer in their street, they don't realize that it may end up in the lake, down the block, or many miles away. Individually these acts may seem insignificant, but the cumulative impacts of these activities contribute to stormwater/nonpoint source pollution and reduce water quality. USEPA, the State of New Jersey and Franklin Borough realize the critical importance of substantially reducing stormwater/nonpoint pollution entering into the waters of the state.

This Municipal Stormwater Management Plan (MSWMP) documents the strategy for Franklin Borough to address stormwater-related impacts. The creation of this plan is required by N.J.A.C. 7:14A-25 Municipal Stormwater Regulations, and contains all of the required elements described in the Stormwater Management Rules. The plan addresses groundwater recharge, stormwater quantity, and stormwater quality impacts by incorporating stormwater design and performance standards for new major development, defined as projects that disturb one or more acres of land. These standards are intended to minimize the adverse impact of stormwater runoff on water quality and quantity, and the loss of groundwater recharge that provides base flow in receiving water bodies. The plan describes long-term operation and maintenance measures for existing and future stormwater facilities.

The plan also addresses the review and update of existing ordinances, the Borough Master Plan, and other planning documents to allow for project designs that include low impact development techniques. The final component of this plan is a mitigation strategy for when a variance or exemption of the design and performance standards is sought. As part of the mitigation section of the stormwater plan, generic stormwater management measures are identified to lessen the impact of existing development.

## **II. Definitions**

1. “BMP” means best management practices.
2. “EDPA” means Effective Date of Permit Authorization.
3. “LID” means limited impact development.
4. “MS4” means a municipal separate storm sewer system.
5. “MSWMP” means Municipal Stormwater Management Plan.
6. “N.J.A.C.” means New Jersey Administrative Code.
7. “RSWMP” means Regional Stormwater Management Plan.
8. “SPPP” means Stormwater Pollution Prevention Plan
9. “WHPA” means a Well Head Protection Area.

## **III. Goals of the SWM Plan**

This section identifies general goals and principles applicable to the stormwater management plan and the stormwater control ordinance, including the goals of stormwater management planning. The primary goals of this MSWMP are to:

- Reduce flood damage, including damage to life and property;
- Minimize, to the extent practical, any increase in stormwater runoff from any new development;

- Reduce soil erosion from any development or construction project;
- Assure the adequacy of existing and proposed culverts and bridges, and other in-stream structures;
- Maintain groundwater recharge;
- Prevent, to the greatest extent feasible, an increase in nonpoint pollution;
- Maintain the integrity of stream channels for their biological functions, as well as for drainage;
- Minimize pollutants in stormwater runoff from new and existing development to restore, enhance, and maintain the chemical, physical, and biological integrity of the waters of the state, to protect public health, to safeguard fish and aquatic life and scenic and ecological values, and to enhance the domestic, municipal, recreational, industrial, and other uses of water; and
- Protect public safety through the proper design and operation of stormwater basins.

To achieve these goals, this plan recommends specific design and performance standards that prevent or minimize water quality impacts. Franklin Borough should develop, implement, and enforce a program to address stormwater runoff from new development and redevelopment projects (including projects operated by the municipality itself) that disturb one acre or more. This includes projects less than one acre that are part of a larger common plan of development or sale that discharge into the municipality's small MS4's. As part of this plan development, the plan recommends that the Borough:

1. Adopt this MSWMP in accordance with N.J.A.C. 7:8-4.
2. Adopt and implement a municipal stormwater control ordinance or ordinances in accordance with N.J.A.C. 7:8-4. The ordinance(s) will control stormwater from nonresidential development and redevelopment projects.
3. Ensure that any residential development and redevelopment projects that are subject to the Residential Site Improvement Standards for stormwater management (N.J.A.C.5:21-7) comply with those standards (including any exception, waiver, or special area standard that was approved under N.J.A.C. 5:21-3).
4. Where necessary to implement the municipal stormwater management plan, the municipal stormwater control ordinance(s) will also:
  - a. Control aspects of residential development and redevelopment projects that are not pre-empted by the Residential Site Improvement Standards (RSIS); and
  - b. Set forth special area standards that are consistent with the RSIS for residential development or redevelopment projects.
5. Ensure adequate long-term operation and maintenance of BMPs.
6. Develop a post-construction program that requires compliance with standards set forth in Attachment A of the general permit to control passage of solid and floatable materials through storm drain inlets.

7. This post-construction program shall require compliance with the applicable design and performance standards established under N.J.A.C. 7:8 for major development, unless:
  - a. Those standards do not apply because of a variance or exemption granted under N.J.A.C. 7:8; or
  - b. Alternative standards are applicable under an adopted area wide or Statewide Water Quality Management Plan adopted in accordance with N.J.A.C. 7:15.

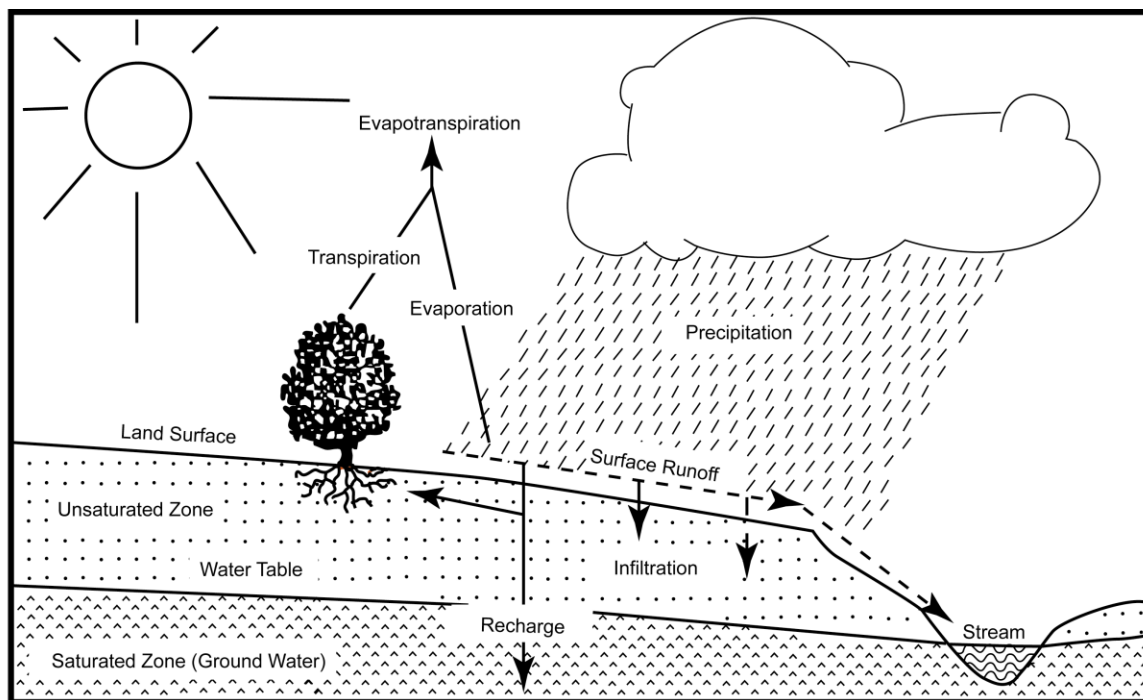
## **IV. Stormwater & the Hydraulic Cycle**

Development can dramatically alter the hydrologic response (See Figure SWM-1) of an area and, ultimately, an entire watershed. Prior to development, native vegetation can either directly intercept precipitation or evapotranspire that portion that has infiltrated into the ground back into the atmosphere. Development can remove this beneficial vegetation and replace it with turf grass lawns and impervious roofs, driveways, parking lots, and roads, thereby reducing the site's pre-developed evapotranspiration and infiltration rates. In addition, clearing and grading can remove surface depressions that store rainfall. Construction activities may also compact the soil and diminish its infiltration rate, resulting in increased rates and volumes of stormwater runoff from the development site.

Impervious areas directly connected to gutters, channels, and storm sewers can transport runoff more quickly than natural, vegetated conveyances. This shortening of the transport or travel time quickens the rainfall-runoff response of the site, causing flow in downstream waterways to peak faster and higher than under natural or pre-developed site conditions. These increases can create new, and aggravate existing, downstream flooding and erosion problems and can increase the quantity of sediment and other pollutants in the waterways. Filtration of runoff and removal of pollutants by natural surface and channel vegetation is eliminated by storm sewers that discharge runoff directly into waterways.

Increases in impervious area can also decrease opportunities for infiltration and reduce stream base flow and groundwater recharge. Reduced base flows and increased peak flows produce greater fluctuations between normal and storm flow rates, which can increase channel erosion and adversely impact aquatic organisms and habitats. Reduced base flows can negatively impact the hydrology of adjacent wetlands and the health of biological communities that depend on these base flows. Finally, erosion and sedimentation can destroy habitat from which some species cannot adapt.

**Figure SWM-1: Groundwater Recharge in the Hydrologic Cycle**



Source: New Jersey Geological Survey Report GSR-32.

To address these impacts, planners, engineers, reviewers, and other participants in the design of stormwater management measures are rethinking traditional approaches to both land development itself and the environmental problems it can cause. New approaches that minimize development impacts are being considered. For example, nonstructural stormwater management principles provide a prevent-minimize-mitigate approach that is preferred by the NJDEP Stormwater Management Rules. Under these Rules, nonstructural stormwater management techniques are a requirement for new land development projects. Nonstructural stormwater management measures, also known as Low Impact Development Best Management Practices (LID-BMPs), include reduction of impervious cover, maintenance of natural vegetation, and reduction of nutrient inputs. LID-BMP techniques can significantly reduce and even prevent the negative effects of land development on stormwater runoff described above.

During heavy rainfall, many land developments increase the rate or volume of stormwater runoff, even those with well-designed LID techniques. Historically, this increased runoff was managed through state and/or local regulations that required peak runoff rates leaving a site after development to be equal to those that existed prior to development. It was believed that if the peak rate of runoff was maintained, the downstream waterways could assimilate the runoff in the same manner as before development. This control was accomplished using detention and retention basins that store and then gradually release the runoff. However, this control

methodology failed to account for the increased volume of runoff caused by land development. Watershed studies in New Jersey have demonstrated that this additional volume resulted in extended peak rates and increases in non-peak flows that increased flooding and erosion problems downstream. These same watershed studies determined that, by reducing peak post-development site runoff to rates less than pre-developed site conditions throughout the watershed, the volume of post-development runoff was redistributed and pre-development peaks were maintained or reduced throughout the watershed.

In addition to increases in runoff peaks, volumes, and loss of groundwater recharge, land development often results in the accumulation of pollutants on the land surface that runoff can mobilize and transport to streams. New impervious surfaces and cleared areas created by development can accumulate a variety of pollutants from the atmosphere, fertilizers, animal wastes, and leakage and wear from vehicles. Pollutants can include metals, suspended solids, hydrocarbons, pathogens, and nutrients.

In addition to increased pollutant loading, land development can adversely affect water quality and stream biota in more subtle ways. For example, stormwater falling on impervious surfaces or stored in detention or retention basins can become heated and raise the temperature of the downstream waterway, adversely affecting cold water fish species such as trout. Development can remove trees along stream banks that normally provide shading, stabilization, and leaf litter that falls into streams and becomes food for the aquatic community.

This plan intends to minimize the adverse impacts, described above, that unmanaged land development can have on groundwater recharge and stormwater runoff quality and quantity both at and downstream of a development site. In addition, the plan reinforces the fundamental requirements of the new NJDEP Stormwater Management Rules, which have been developed to directly address these adverse impacts. The implementation of this plan will increase the general public's understanding of the positive benefits gained by the structural and non-structural measures mandated by the Rules' groundwater recharge, stormwater quality, and stormwater quantity requirements.

## **V. Overview of the Borough**

The Borough of Franklin, located in Sussex County (See Fig. SWM-2), is a rural community encompassing 2,857 acres in area. The main development is centrally located with less developed, environmentally constrained outlying areas. These areas include geologic formations that contain over 150 minerals, many of them fluorescent and 25 of which are not found anywhere else on earth.

By the early 1800's, zinc deposits were commercially mined with the local population rising to 500 in 1897. With the onset of the industrial revolution, zinc became an essential mineral and by 1913 the population swelled to 3,000 and subsequently was incorporated as the Borough of Franklin. Throughout the ensuing years Franklin became the home to many industries based on the extraction of mineral resources (See Fig. SWM-3 for Historic Mine Locations). Mining offered many jobs and by 1990 the population reached 4,977. At this point a fair amount of the Borough was built out and the by the year 2000, the population increased to a 5,160, representing an increase of 183 people over a ten year period. The impact of the population surge results in increased runoff volumes and pollutant loads to the waterways of the Borough (See Fig. SWM-4). Although some growth is expected, much of the community is either built out, or contains environmentally constrained lands (See Fig. SWM-5). With the existing development and the constrained lands, there is less than 640 acres of developable land remaining in the Borough.

The New Jersey Department of Environmental Protection (NJDEP) has established an Ambient Biomonitoring Network (AMNET) to document the health of the state's waterways. There are over 800 monitoring sites throughout the state of New Jersey. These sites are sampled for benthic macroinvertebrates by NJDEP on a five-year cycle. Streams are classified as non-impaired, moderately impaired, or severely impaired based on the data. The data is used to generate a New Jersey Impairment Score (NJIS), which is based on a number of biometrics related to benthic macroinvertebrate community dynamics. The main watercourse in Franklin Borough (See Fig. SWM-4) is the Wallkill River. According to the NJDEP/USGS Metal Recon data, the Wallkill is identified as exceeding the allowable limits for Arsenic. Furthermore, the NJDEP and other regulatory agencies collect water quality chemical data on the streams in the state. These data show that the fecal coliform concentrations of Wallkill River frequently exceed the state's criteria. This means that the river is impaired and the NJDEP is required to develop a Total Maximum Daily Load (TMDL) for these pollutants for each waterway.

A TMDL is the amount of a pollutant that can be accepted by a water body without causing an exceedance of water quality standards or interfering with the ability to use a water body for one or more of its designated uses. The allowable load is allocated to the various sources of the pollutant, such as stormwater and wastewater discharges, which require an NJPDES permit to discharge, and nonpoint source, which includes stormwater runoff from agricultural areas and residential areas, along with a margin of safety. As the imperviousness increased in the Borough, the peak and volumes of stream flows also increased. The high imperviousness of the Borough has significantly decreased groundwater recharge, decreasing base flows in streams during dry weather periods. Lower base flows can have a negative impact on instream habitat during the summer months. A map of the groundwater recharge areas is shown in Figure SWM-6. Provisions may also be made for future sources in the form of reserve capacity. An



implementation plan is developed to identify how the various sources will be reduced to the designated allocations. Implementation strategies may include improved stormwater treatment plants, adoption of ordinances, reforestation of stream corridors, retrofitting stormwater systems, and other BMPs.

The New Jersey Integrated Water Quality Monitoring and Assessment Report (305(b) and 303(d)) is required by the federal Clean Water Act to be prepared biennially and is a valuable source of water quality information. This combined report presents the extent to which New Jersey waters are attaining water quality standards, and identifies waters that are impaired. Sublist 5 of the Integrated List constitutes the list of waters impaired or threatened by pollutants, for which one or more TMDLs are needed. The Wallkill is identified on this list for fecal coliform and arsenic.

A Well Head Protection Area is defined as an area calculated around a Public Community Water Supply well that delineates the horizontal extent of ground water captured by a well pumping at a specific rate over a two, five, and twelve-year period of time. The Safe Drinking Water Act Amendments of 1996 established the need for each State to have a Source Water Assessment Program. Ground water is vulnerable to contamination and is difficult and costly to clean up.

The WHPA's in Franklin Borough are located in the southern section of the Borough (See Fig. SWM-7) along the boundary with the Borough of Ogdensburg and the Township of Hardyston. Franklin Pond is also located within the limits of the twelve-year delineation tier of the WHPA. The WHPA locations should be monitored to ensure that the new stormwater quality and recharge regulations are strictly enforced.

## **VI. Design and Performance Standards**

The Borough should adopt a design and performance standard for stormwater management measures as presented in N.J.A.C. 7:8-5 to minimize the adverse impact of stormwater runoff on water quality and water quantity and loss of groundwater recharge in receiving water bodies. The design and performance standards shall include the language for maintenance of stormwater management measures consistent with the stormwater management rules at N.J.A.C. 7:8-5.8 Maintenance Requirements, and language for safety standards consistent with N.J.A.C. 7:8-6 Safety Standards for Stormwater Management Basins. The ordinances shall include language regarding long-term maintenance, compliance and enforcement. The adopted ordinances will be submitted to the county for review and approval within 24 months of the EDPA.

During construction, Borough inspectors will observe the construction of the project to ensure that the stormwater management measures are constructed as designed.

## **VII. Nonstructural Stormwater Management Strategies**

The Stormwater Management Rules require the maximum practical use of nonstructural stormwater management strategies before structural stormwater management measures are considered. Nonstructural stormwater management strategies can be grouped into the following types of low impact development (LID) techniques:

### Vegetation and Landscaping

Best Management Practices (BMPs) include preserving existing vegetated areas, creating vegetative filters and buffers, providing low-maintenance landscaping that encourages retention, planting native vegetation, minimizing the use of lawns, fertilizers and pesticides, etc.

### Minimizing Site Disturbance

BMPs include limiting clearing and grading, minimizing construction areas, access roads and storage areas, minimizing soil compaction, concentrating development on soils with lower permeability rates to minimize increase in runoff and retain high permeability areas for groundwater recharge, preserving existing runoff storage areas, etc.

### Impervious Area Management

BMPs include disconnecting impervious areas, minimizing pavement or roadway widths consistent with safety and traffic standards, providing vegetated or landscaped medians and islands, utilizing pervious paving material and sidewalks, locating parking beneath buildings, etc.

### Time of Concentration Modification

BMPs include increasing surface roughness by preserving existing native vegetation, using native plants to restore disturbed areas providing vegetated open-channel conveyance systems discharging into and through stable vegetated areas rather than piped conveyance systems, providing additional travel time by reducing slopes in graded areas, increasing travel paths, etc.

### Pollutant Source Control

BMPs include preventing or minimizing the use or exposure of pollutants, preventing accumulation of trash and debris in drainage systems, regular sweeping, addressing yard and pet waste, spill prevention and control, etc.

Municipalities are required to evaluate their master plan and ordinances to determine what adjustments may be needed to allow implementation of nonstructural stormwater management techniques. The Borough Master Plan and Borough Land Use Code have been reviewed. The Municipal Regulations Checklist from The New Jersey Stormwater Best Management Practices Manual was utilized during this review. Some of the ordinances that were identified for reconsideration are identified, but not limited to, the items below. Once the ordinance texts are reviewed, completed and adopted, (as required) they will be submitted to the county review agency for review and approval.

The following sections of Chapter 161, Land Development, Borough of Franklin, should be reviewed and recommended for modification, if applicable:

### **Article IV**

#### **161-23. General design standards**

- Design & Building Layout
- Environmental Considerations
- Landscaping
- Buffering
- Open Space

#### **161-24. Specific design standards**

- General Buffers
- Landscaping
- General principles and restrictions
- Off-street parking
- Slope plantings

#### **161-25. Environmentally sensitive areas**

### **Article IX**

#### **161-46. Standards for stormwater runoff and control**

#### **161-47. Design frequency**

#### **161-49. Design standards**

#### **161-50. Off-site and off-tract drainage facilities**

### **Article IX**

#### **161-51. Enforcement**

## **VIII. Plan Consistency**

The Wallkill River in Franklin Borough is identified as a stream segment with a TMDL for fecal coliform and arsenic. The State has identified the TMDL requirements for the Wallkill River to emulate those found in the design and performance standards identified in N.J.A.C. 7:8-5. Franklin's SWM Plan recommends that the Borough contribute to the regional TMDL initiatives for fecal coliform by introducing pet waste and wildlife feeding ordinances.

With regard to the potential for arsenic, a specific TMDL was introduced in 2004 to address these issues based on existing data. The USGS is currently conducting an in depth study to determine whether the actual levels of arsenic are consistent with the old data. Once the accuracy of the existing data, and the data currently being collected is confirmed, the Wallkill River management stakeholders will propose a TMDL to address any contaminants.

Franklin has been proactive in its approach to stormwater management. In the Master Plan that was adopted in 2003, a new set of design standards was proposed that would guide new development. The existing one-acre (R-1) and Planned Development zones were recommended for re-zoning to the 3-acre density Residential Zone. Building envelopes would be chosen that exclude; steep slopes, wetlands, flood plains, areas of mine subsidence, rare and endangered species habitat, and priority habitat. New development will require forested buffers between the building envelope and the public right-of-way or priority habitat. The State will monitor the level of the various contaminants for each TMDL to determine the effectiveness of the Stormwater Management Plan. As previously stated, the State has implemented a monitoring program to identify the source of arsenic and will develop a remediation plan once the source is identified.

Franklin Borough's Municipal Stormwater Management Plan recommends consistency with the Residential Site Improvement Standards (RSIS) at N.J.A.C. 5:21. The Borough will utilize the most current update of the RSIS in the stormwater management review of residential areas. This Municipal Stormwater Management Plan will be updated to be consistent with any future updates to the RSIS.

The Borough's Stormwater Management Ordinance should require all new development and redevelopment plans to comply with New Jersey's Soil Erosion and Sediment Control Standards. During construction, Township inspectors will observe on-site soil erosion and sediment control measures and report any inconsistencies to the local Soil Conservation District.

At present, Sussex County is developing a Stormwater Pollution Prevention Plan (SPPP). The Borough has actively participated with the County on other regional plans and will contribute, as needed, to the SPPP. Once completed, Franklin Borough should review that plan and consider any recommendations that may be appropriate for the Borough.

### **IX. Mitigation Plans**

This mitigation plan is recommended for proposed development that is granted a variance or exemption from the stormwater management design and performance standards. Presented is a hierarchy of options that the developer may consider. These options are subject to the feasibility review of the Borough Engineer.

#### Mitigation Project Criteria:

1. The mitigation project must be implemented in the same drainage area as the proposed development. For the purposed of this plan, drainage area shall be defined as being in the same HUC-14 as the development (See Fig. 8), or the overall watershed as deemed appropriate for the specific mitigation. The project must provide additional groundwater recharge benefits, or protection from stormwater runoff quality and quantity from previously developed property that does not currently meet the design and performance standards outlined in the Municipal Stormwater Management Plan. The developer must ensure the long-term maintenance of the project, including the maintenance requirements under Chapters 8 and 9 of the NJDEP Stormwater BMP Manual.

The applicant can select one of the sites listed in Figure SWM-9 to compensate for the deficit from the equivalent performance standard resulting from the proposed project. For example, if the project cannot achieve the required groundwater recharge, the developer may select a compensating site for groundwater recharge. Not all sites are appropriate for all mitigation categories and must be approved by the Borough Engineer as an appropriate mitigation option. (Specific options to be determined by 4/1/06)

#### Groundwater Recharge Options:

- Replace existing deteriorated parking areas with a permeable paving material.
- Retrofit existing basins to allow clean recharge.
- Provide recharge measures for existing roof drain systems that are not recharged.

#### Water Quality Options:

- Retrofit existing stormwater management facilities to provide for the removal of 80 percent of total suspended solids from impervious runoff.
- Retrofit existing impervious areas to provide for the removal of 80 percent of total suspended solids. Site constraints may dictate the use of above ground or below ground BMP's.
- Re-establish vegetative buffers at approved locations that filter water that enters streams and lakes.

- Provide goose management or pet waste measures, or other measures including public education seminars that advance the goals of the stormwater management plan.

### Water Quantity Options:

- Install stormwater management measures in open space to reduce the peak flow from existing development for the 2, 10, and 100-year storms.
2. If a suitable site cannot be located in the same drainage area as the proposed development, as discussed in Option 1, the Borough would evaluate, on an individual basis, mitigation projects that provide mitigation that is not equivalent to the impacts for which the variance or exemption is sought, but that addresses the same issue. For example, if a variance is given because the 80 percent TSS requirement is not met, the selected project may address water quality impacts due to a fecal impairment.

The Borough may allow a developer to provide funding or partial funding to the municipality for an environmental enhancement project that has been identified in a Municipal Stormwater Management Plan, or towards the development of a Regional Stormwater Management Plan. The funding must be equal to or greater than the cost to implement the mitigation outlined above, including costs associated with purchasing the property or easement for mitigation, and the cost associated with the long-term maintenance requirements of the mitigation measure.

## **X. Land Use/Build-Out Analysis**

As previously stated, the remaining undeveloped land within the Borough consists mainly of historic or constrained lands (See Fig. SWM-5) and open Space (See Fig. SWM-10). Based on an overall analysis of the 2,857 acres that was conducted for the County Strategic Growth Plan, there are 543 acres, or less than one square mile of developable lands remaining. As such, this plan does not require a complete build-out analysis of the Borough.

The remaining undeveloped land lies almost entirely within the limits of one HUC-14 (See Fig. SWM-8). Figure SWM-11 shows the existing zoning designations within the Borough.

## **XI. Summary**

Franklin Borough considers stormwater management to be an integral element of community development and has taken a proactive approach to implementing stormwater guidelines. The Borough Master Plan has language imbedded in its vision statement that specifically identifies water quality and quantity as being protected through a combination of zoning requirements and

open space acquisition. The Plan promotes Smart Growth by encouraging development along the existing commercial corridors. Main Street revitalization and the reuse of vacant non-residential buildings are strongly encouraged. Other considerations or recommendations outlined in the Master Plan include:

1. The use of all available tools to protect and preserve environmentally sensitive natural resources of the Borough.
2. Establish constraints surrounding the wellhead protection areas located in the southern portion of Franklin.
3. Promote Smart Growth principles for development and redevelopment.
4. Encourage the redevelopment of the disturbed areas of the zinc mine.
5. Establish an open market area on the zinc mine site to minimize impervious surfaces.
6. Utilize utility plans as a growth management tool by extending infrastructure only in areas intended for growth.

By recommending new design standards, re-zoning one-acre zoning districts to three-acre zones, and adding open space, Franklin Borough will continue to advance the goals of stormwater management as identified above.

Franklin Borough is currently implementing a Public Education Program that includes a display booth at the Borough's summer festival and the distribution of various educational materials. The Municipal Calendar for 2005 includes a page on "Solutions to Stormwater Pollution" (See Fig. SWM-12) and has been distributed to all residents.

A phasing plan for storm drain labeling is currently being developed. The first phase of the labeling program is scheduled to begin following the summer festival. The Borough will meet the labeling schedule identified in the Tier B permit requirements.

The Annual Report and Certification that is due July 1 of each year will include a complete update to the progress of the Public Education Programs and the Inlet Labeling Program. The report will confirm Franklin Borough's commitment to the goals outlined above. The report shall certify that Franklin has developed, implemented, and is actively enforcing its programs for new development and redevelopment projects that discharge into the Borough's small MS4's in accordance with the minimum standard.

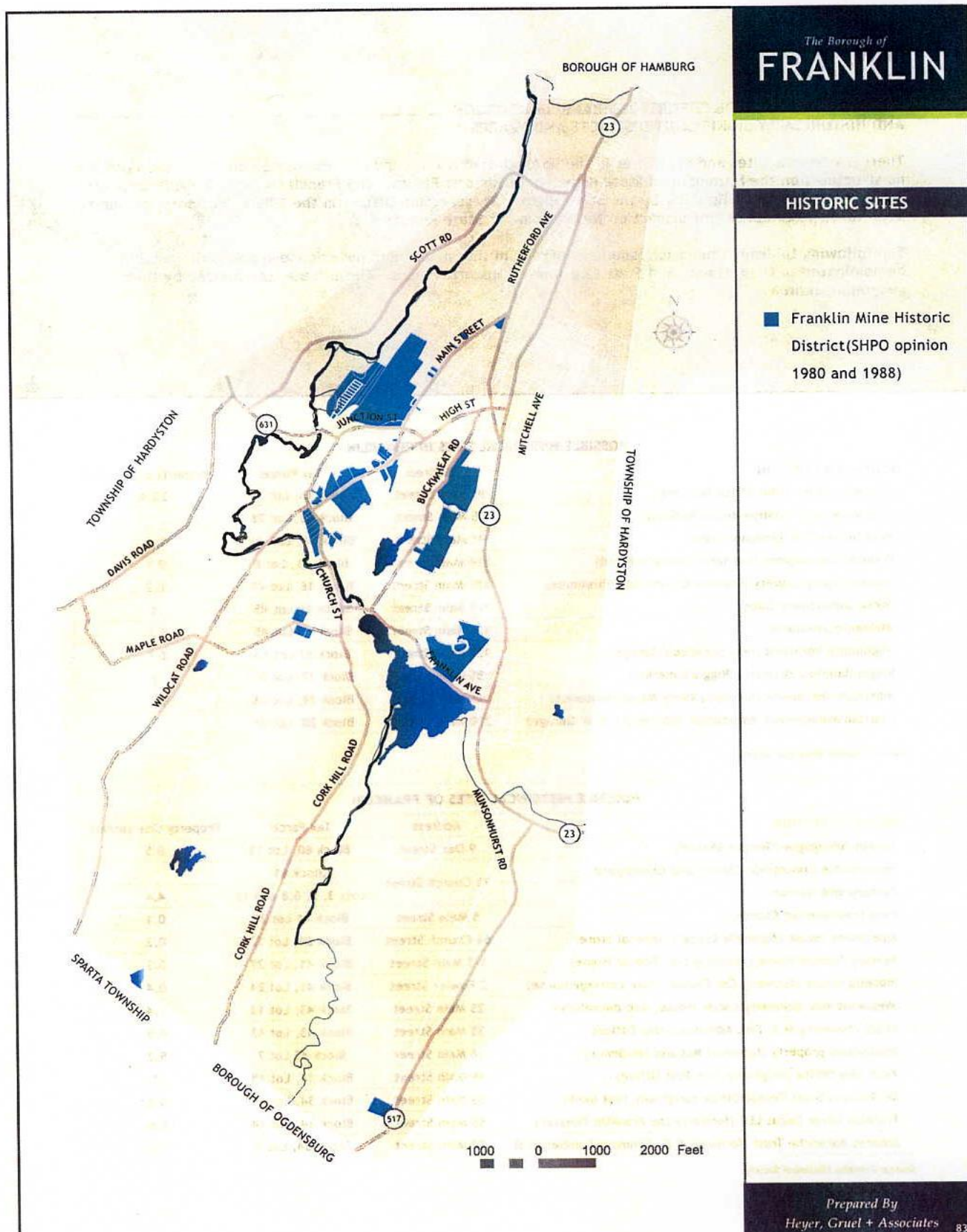
# **Franklin Borough**

**Figures 2 thru 12**







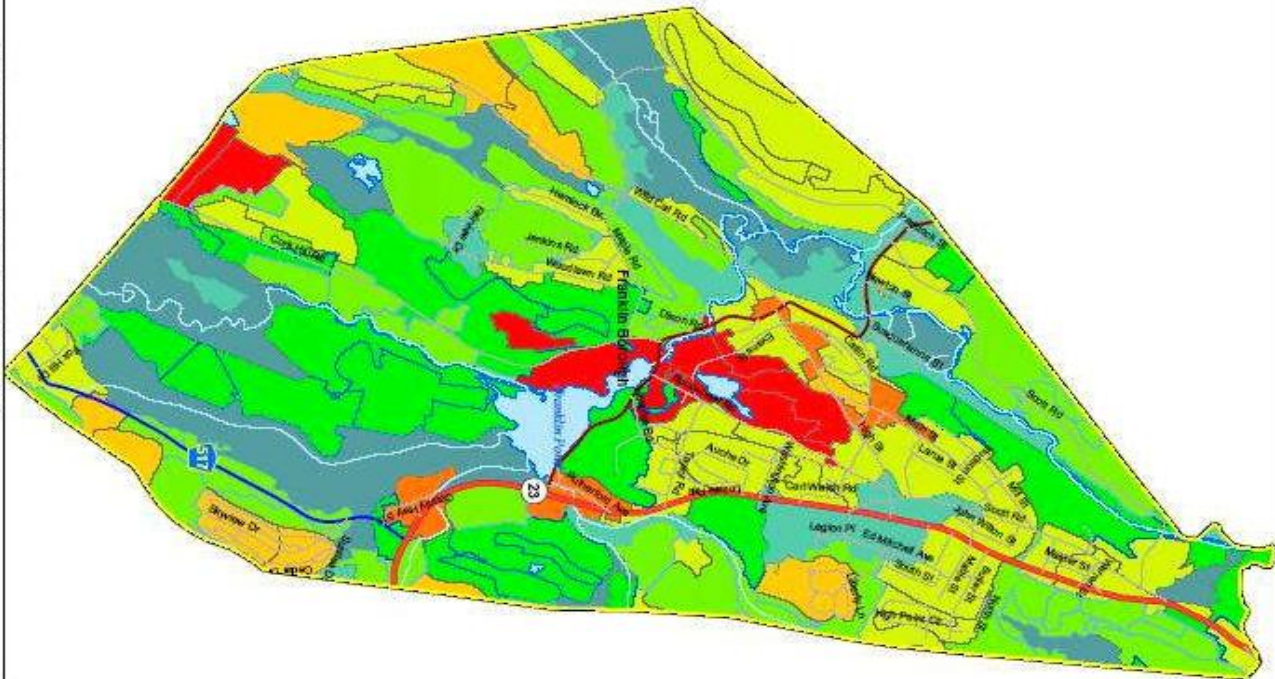


### Lakes/Rivers/Streams

This map illustrates the water features within a specific geographic area. The central feature is Lake Umbagog, a large body of water. To its north and east are several smaller lakes and ponds, including Lake Umbagog Pond, Lake Umbagog, and Lake Umbagog. A network of roads, including Route 1 and Route 102, is shown. The map also depicts various streams and rivers, such as the Umbagog River and the Umbagog Stream. The area is bounded by a yellow line, and the water bodies are colored in shades of blue.

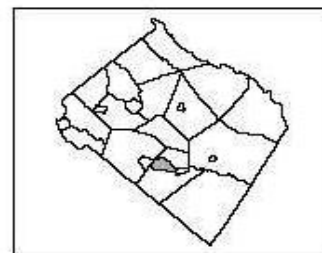
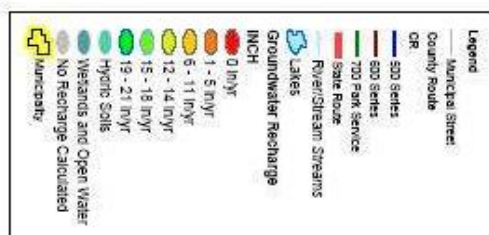


### Groundwater Recharge

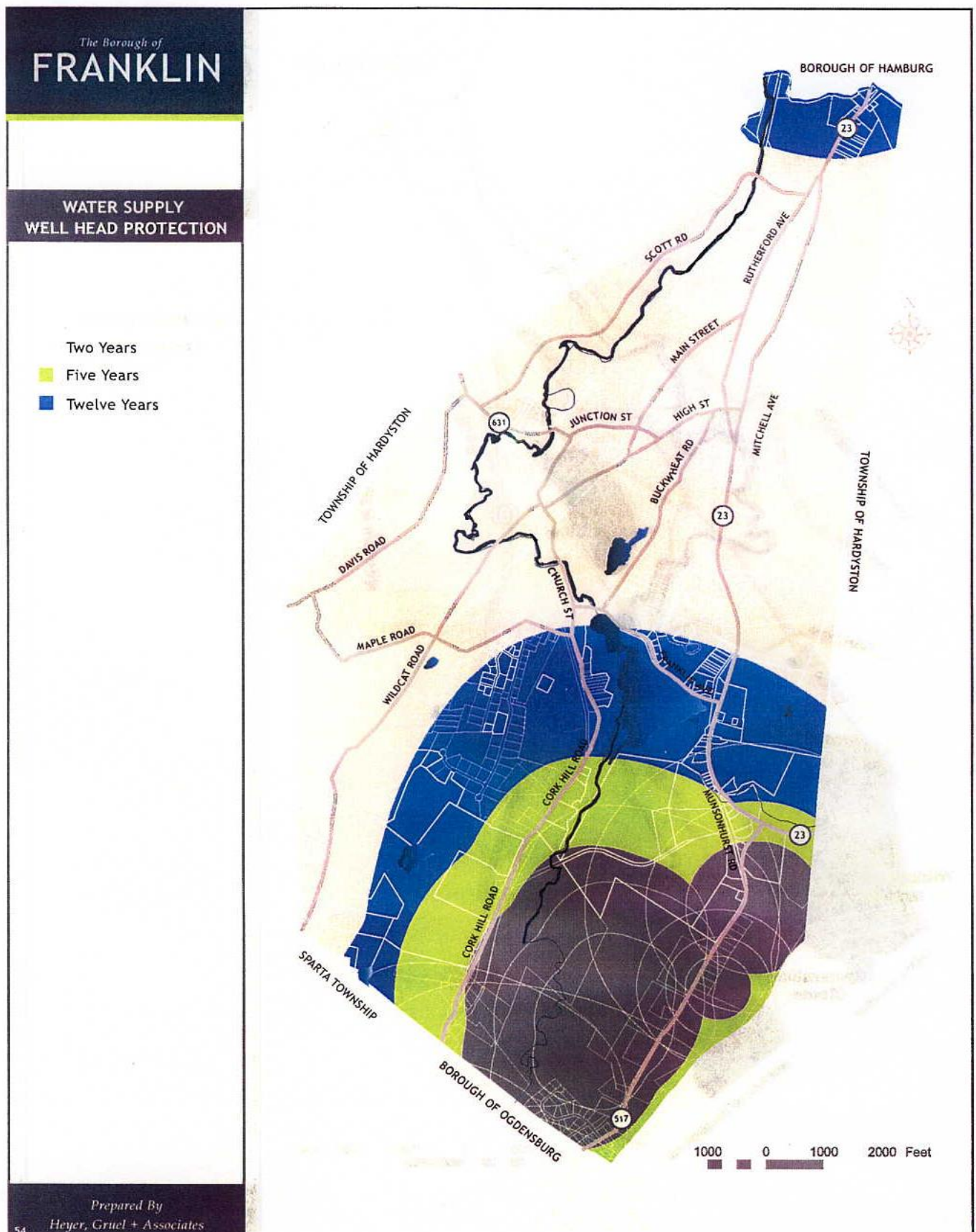


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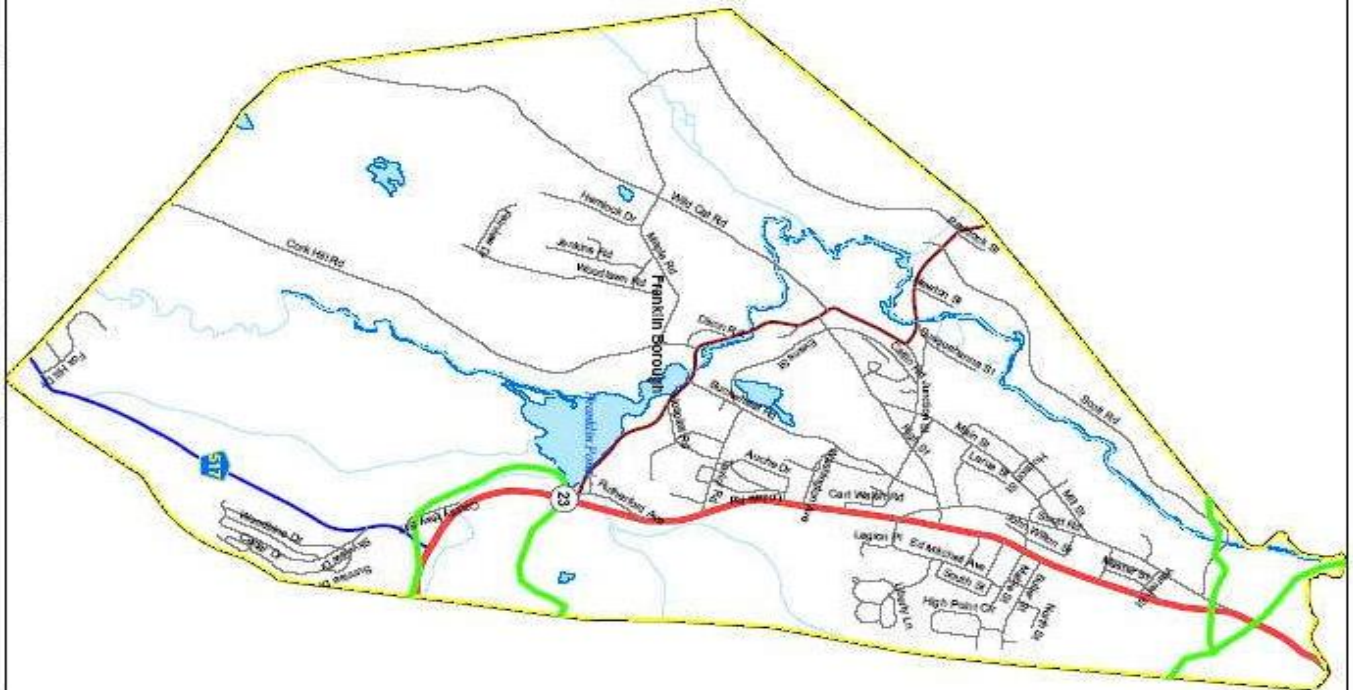
Office of GIS Management  
Division of Engineering  
Department of Engineering and Planning



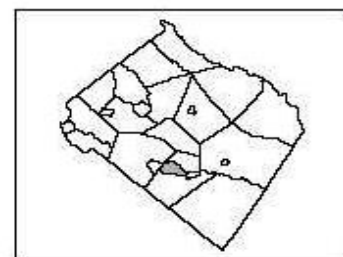
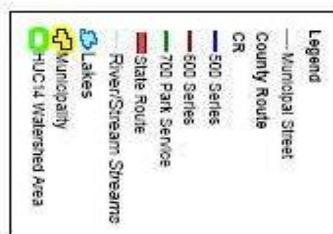




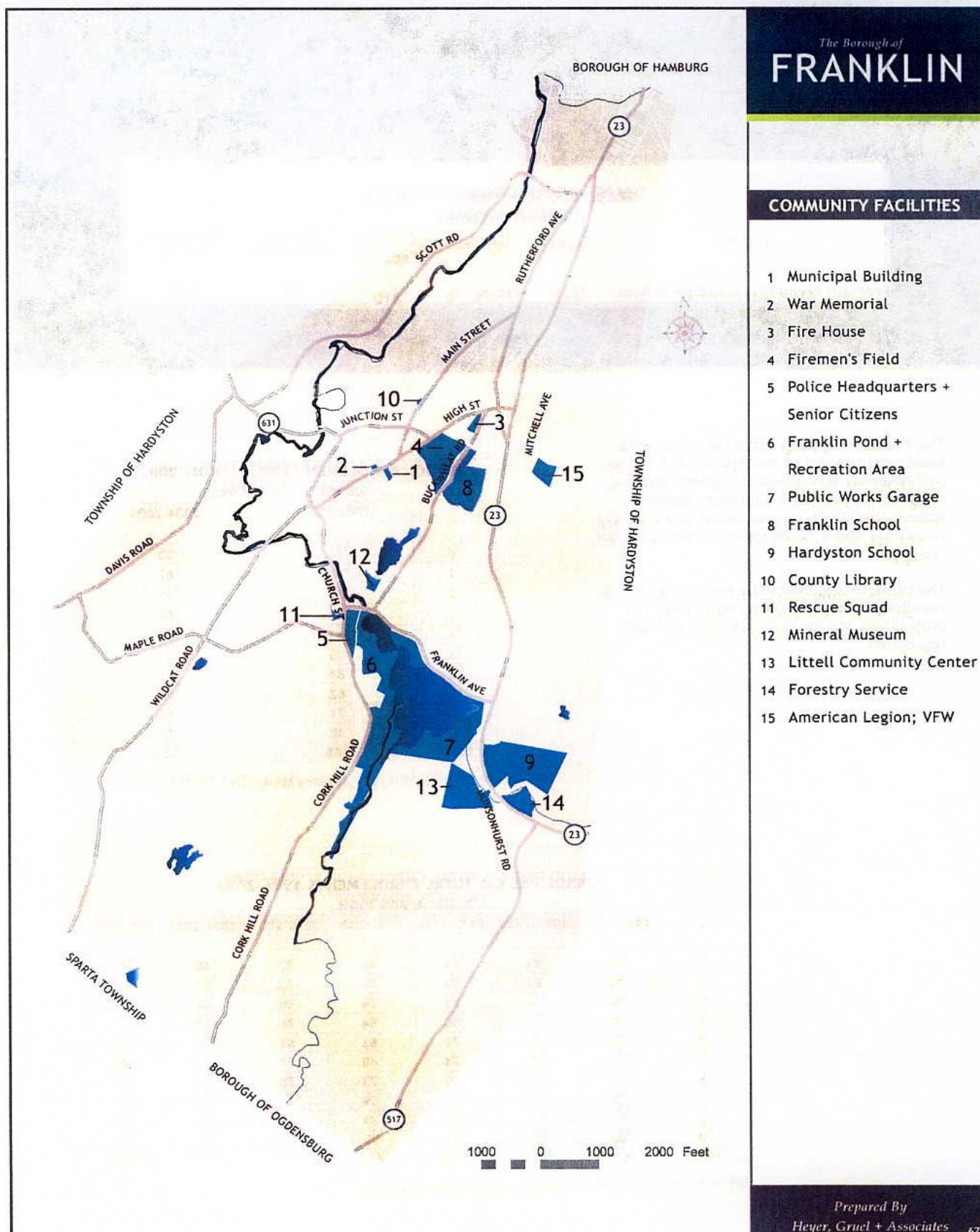
### HUC-14 Watershed Area



Office of GIS Management  
Division of Engineering  
Department of Engineering and Planning

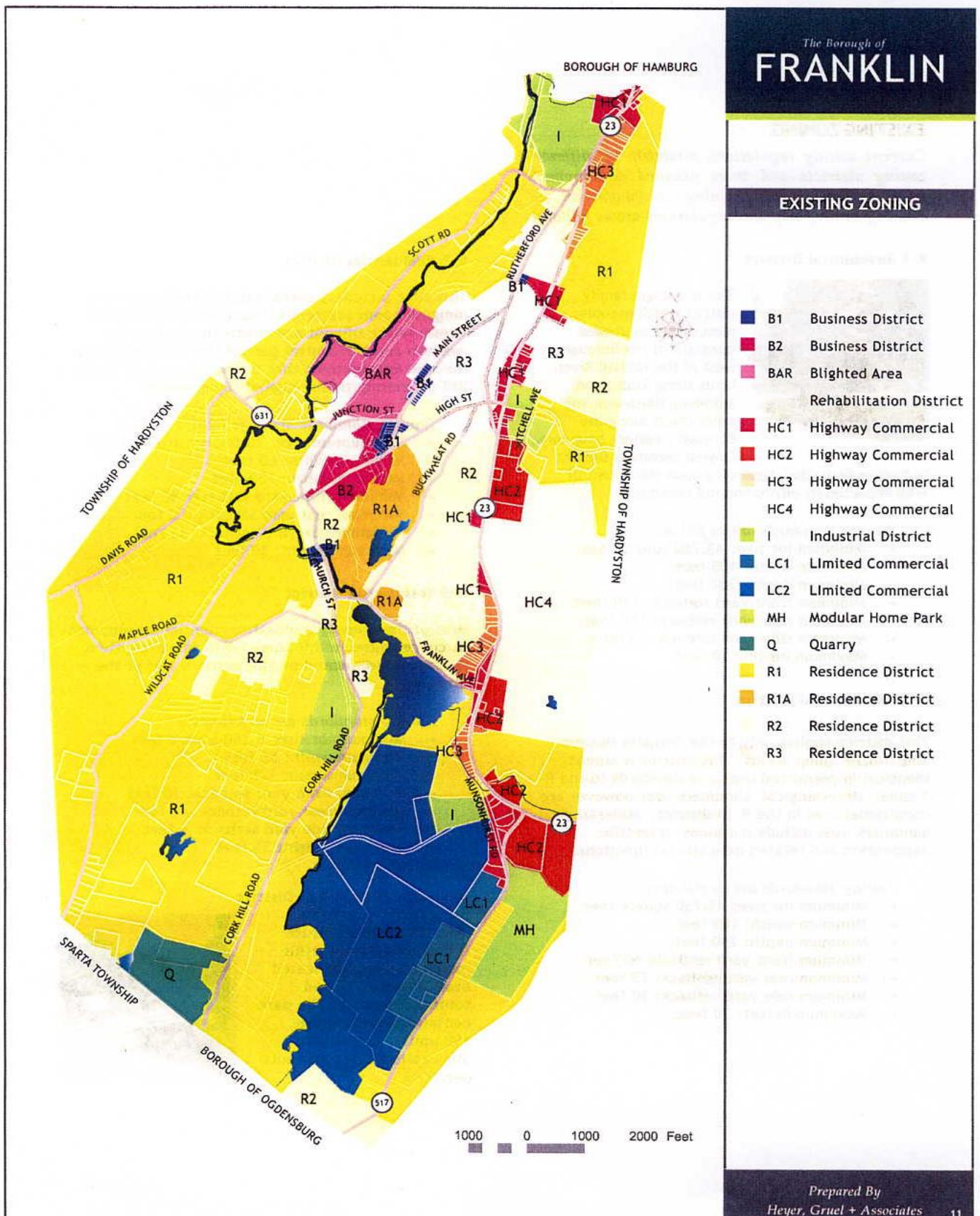


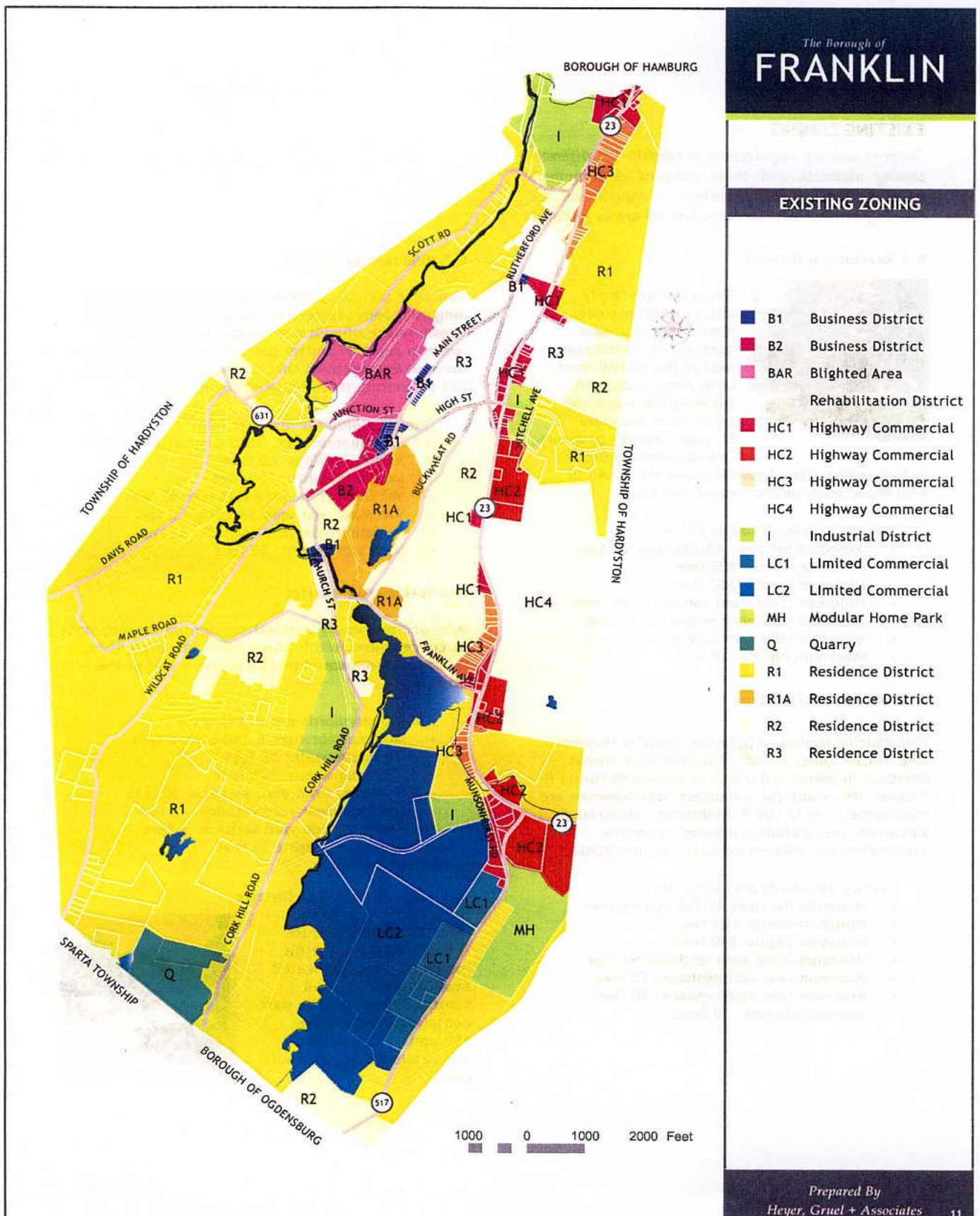




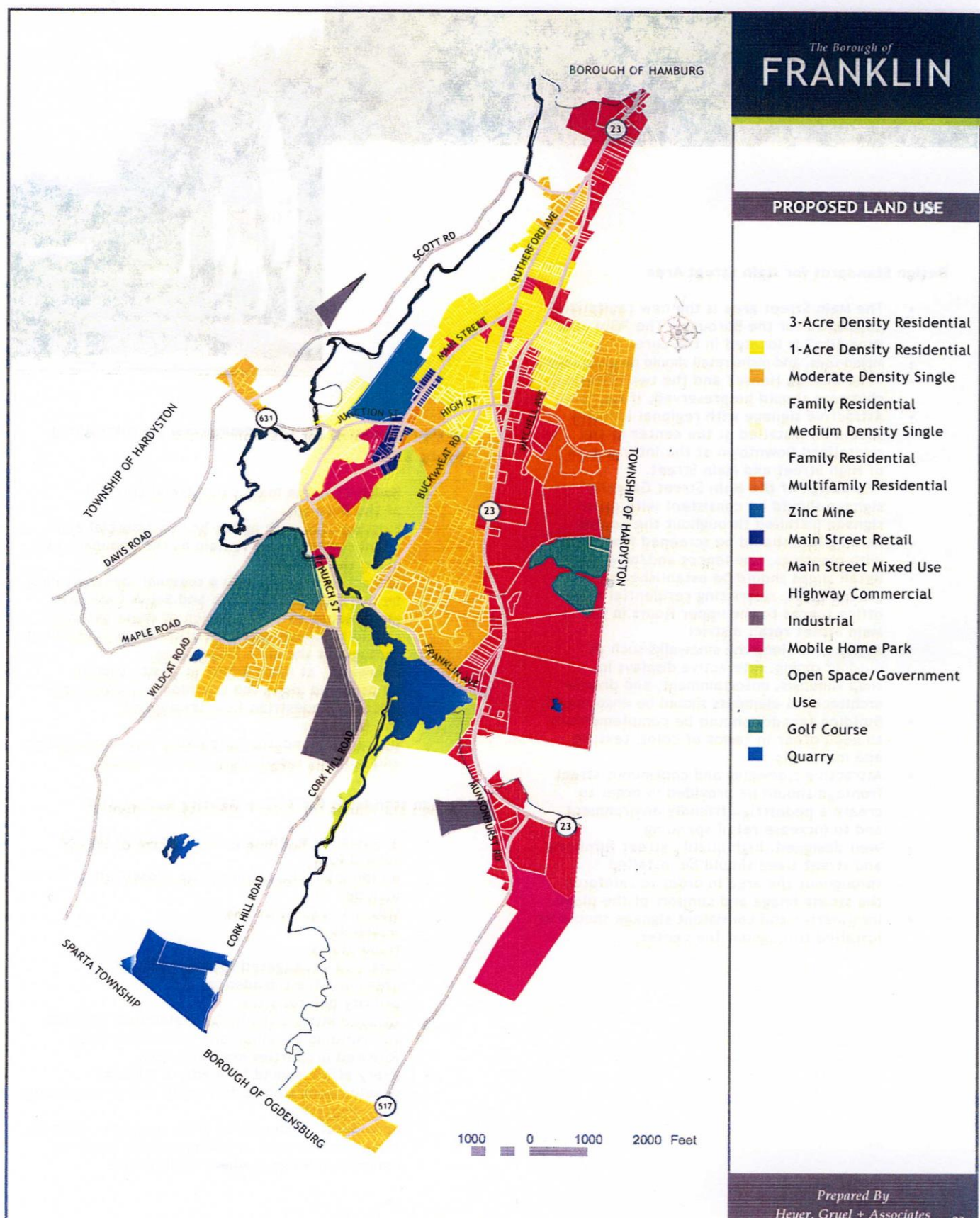












# Solutions to Stormwater Pollution

## Easy Things You Can Do Every Day To Protect Our Water

### A Guide to Healthy Habits for Cleaner Water

**P**ollution on streets, parking lots and lawns is washed by rain into storm drains, then directly to our drinking water supplies and the ocean and lakes our children play in. Fertilizer, oil, pesticides, detergents, pet waste, grass clippings: You name it and it ends up in our water.

Stormwater pollution is one of New Jersey's greatest threats to clean and plentiful water, and that's why we're all doing something about it.

By sharing the responsibility and making small, easy changes in our daily lives, we can keep common pollutants out of stormwater. It all adds up to cleaner water, and it saves the high cost of cleaning up once it's dirty.

As part of New Jersey's initiative to keep our water clean and plentiful and to meet federal requirements, many municipalities and other public agencies including colleges and military bases must adopt ordinances or other rules prohibiting various activities that contribute to stormwater pollution. Breaking these rules can result in fines or other penalties.



**As a resident, business, or other member of the New Jersey community, it is important to know these easy things you can do every day to protect our water.**

### Limit your use of fertilizers and pesticides

- Do a soil test to see if you need a fertilizer.
- Do not apply fertilizers if heavy rain is predicted.
- Look into alternatives for pesticides.
- Maintain a small lawn and keep the rest of your property or yard in a natural state with trees and other native vegetation that requires little or no fertilizer.
- If you use fertilizers and pesticides, follow the instructions on the label on how to correctly apply it.

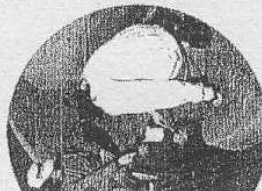


Make sure you properly store or discard any unused portions.

### Properly use and dispose of hazardous products

- Hazardous products include some household or commercial cleaning products, lawn and garden care products, motor oil, antifreeze, and paints.
- Do not pour any hazardous products down a storm drain because storm drains are usually connected to local waterbodies and the water is not treated.

- If you have hazardous products in your home or workplace, make sure you store or dispose of them properly. Read the label for guidance.
- Use natural or less toxic alternatives when possible.
- Recycle used motor oil.
- Contact your municipality, county or facility management office for the locations of hazardous-waste disposal facilities.



### Keep pollution out of storm drains

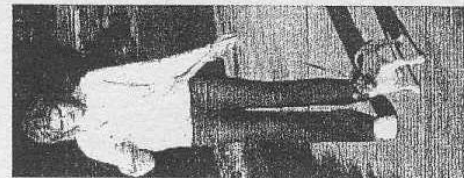
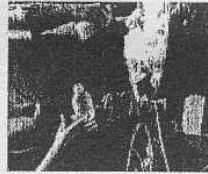
- Municipalities and many other public agencies are required to mark certain storm drain inlets with messages reminding people that storm drains are connected to local waterbodies.
- Do not let sewage or other wastes flow into a stormwater system.

### Clean up after your pet

- Many municipalities and public agencies must enact and enforce local pet-waste rules.
- An example is requiring pet owners or their keepers to pick up and properly dispose of pet waste dropped on public or other people's property.
- Make sure you know your town's or agency's requirements and comply with them. It's the law. And remember to:
  - Use newspaper, bags or pooper-scoopers to pick up wastes.

### Don't litter

- Place litter in trash receptacles.
- Recycle. Recycle. Recycle.
- Participate in community cleanups.



### Dispose of yard waste properly

- Keep leaves and grass out of storm drains.
- If your municipality or agency has yard waste collection rules, follow them.
- Use leaves and grass clippings as a resource for compost.
- Use a mulching mower that recycles grass clippings into the lawn.

### Contact information

For more information on stormwater related topics, visit [www.njstormwater.org](http://www.njstormwater.org) or [www.nonpointsource.org](http://www.nonpointsource.org)

Additional information is also available at U. S. Environmental Protection Agency Web sites [www.epa.gov/npdes/stormwater](http://www.epa.gov/npdes/stormwater) or [www.epa.gov/nps](http://www.epa.gov/nps)

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