Washington Township Master Plan

Utilities Element

May 2004

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(The original of this report has been signed and sealed in accordance with the law

PPK #6214.04

Executive Summary

One of the principal functions of municipal government is to provide a variety of services to its constituents. These services range from trash collection and snow removal to recreation and emergency services. Washington Township is no exception. These types of services are provided throughout the community by way of inter-governmental cooperative agreements -- including the Washington Township Municipal Utilities Authority and the Gloucester County Utilities Authority.

The Utilities Element is provides specific information relative to Washington Township's current needs and anticipated future needs. At present, the Township has the capacity to meet the needs for water, sewer service, and other utilities and has additional available capacity should the need arise.

Goals and Objectives

- Provide adequate sewer and water services to meet the demands of the proposed economic development opportunities.
- Improve roads, intersections, and storm water management through effective infrastructure, maintenance and replacement.
- The Township should develop a plan that incorporates the current Storm Sewer system as-builts. As this plan expands or changes, such should be incorporated within the plan.
- Any proposed new development should be connected to the existing water, wastewater management, and stormwater management facilities.

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I. Introduction

The Utilities Element is an integral part of the Master Plan and has profound ramifications on many other Master Plan elements. The availability of utilities can dictate where certain land uses will be located and can be used as a tool to implement the land use and housing plans.

The Municipal Land Use Law in N.J.A.C. 40:55D-28b(5) describes the requirements of the utility services plan element as follows:

> A utility service plan element analyzing the need for and showing the future general location of water supply and distribution facilities, drainage and flood control facilities, sewerage and waste treatment, solid waste disposal and provision for other related utilities, and including any storm water management plan required pursuant to the provisions of P.L.1981, c 32 (C.40:55D-93 et seq.);

This report will identify current utilities and facilities operated by Washington Township as well as identify planned and proposed improvements to water and sewer facilities throughout the Township.

II. Existing Utilities and Infrastructure

A. Water

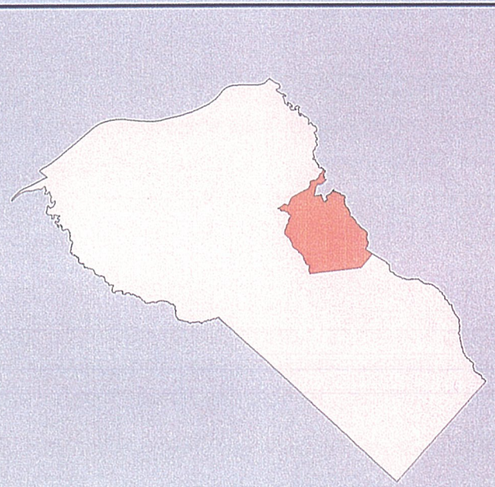
Washington Township, through its Municipal Utilities Authority (MUA), supplies water to its residents and businesses. Figure 1, Existing Public Water Facilities, Washington Township, Gloucester County, New Jersey is a map showing the water system of Washington Township. This map includes storage tanks, elevated tanks and wells utilized to provide a potable water supply.

As this map shows, Washington Township's water supply comes from 15 wells that pump groundwater from the Mt. Laurel-Wenonah, Cohansey and Raritan Aquifers. Wells #2 – 5, 8 – 9, 15 & 20 withdraw from the Raritan Aquifer, wells # 10, 11, 16, 18 and 19 withdraw groundwater from the Cohansey Aquifer and wells # 14 and 17 withdraw from the Mt. Laurel-Wenonah Aquifer. A listing of the wells and storage tanks owned and operated by the M.U.A. are identified in Figure 2 Washington Township M.U.A. Wells and Storage Tanks.

The MUA also owns, maintains and operates 3 storage tanks with a combined capacity of 695,000 gallons and 4 elevated tanks with a combined capacity of 9,400,000 gallons. The location of these tanks is shown on Figure 2.

Washington Township is permitted to withdraw 37.2 million gallons/month from the Mt. Laurel-Wenonah Aquifer, 102 million gallons/month from the Cohansey Aquifer and 109 million gallons/month from the Raritan Aquifer. The MUA has the capacity to treat 12 million gallons of water per day.

Figure 1
Washington Township
Wells
and
Storage Tanks



Well Location

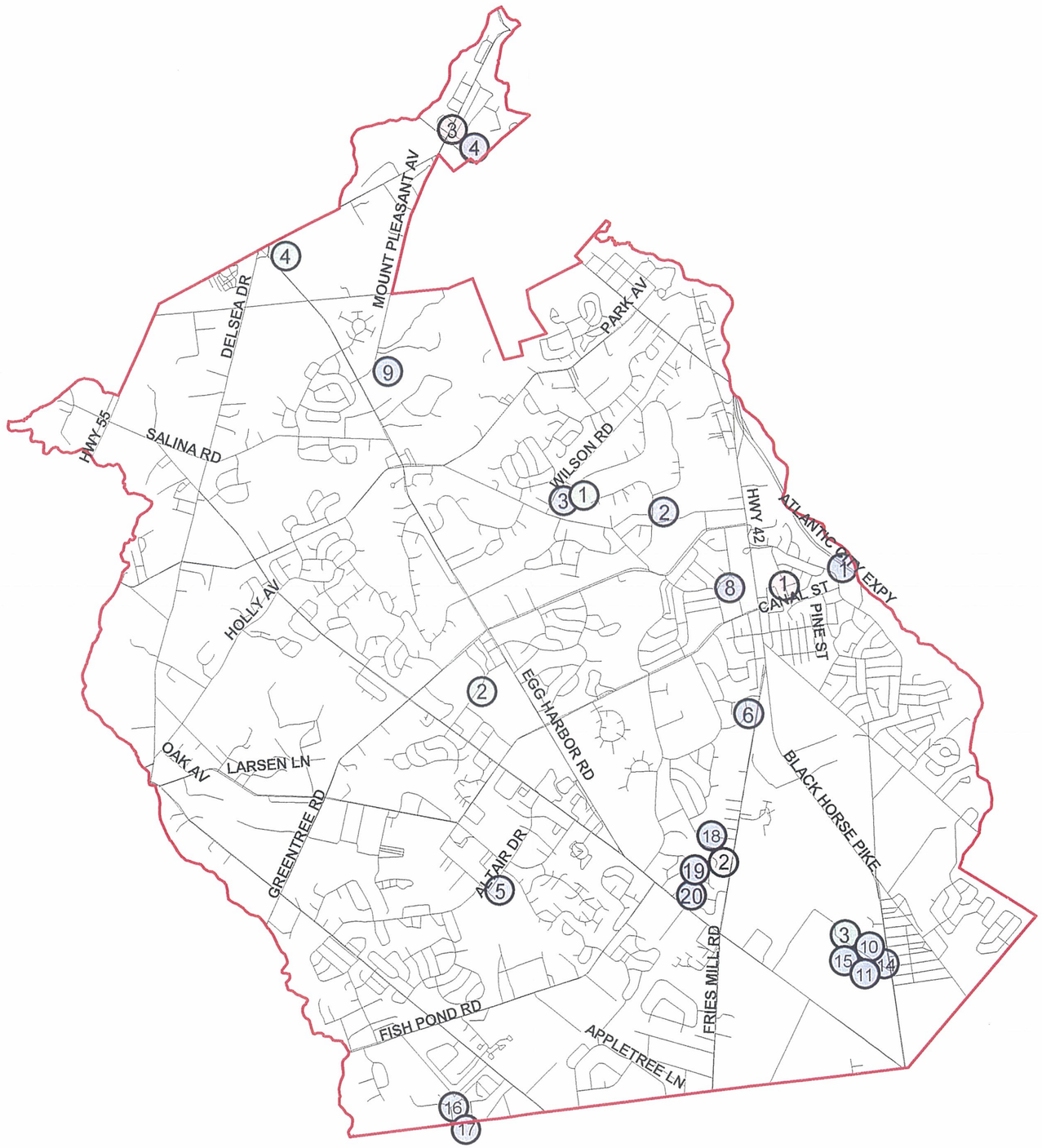
#1 Whitman Square
#2 Wedgewood
#3 Bryant & Wilson Roads
#4 Nob Hill
#5 Birches West
#6 Birches-Fries Mill Road
#8 Bells Lake-Barclay Drive
#9 Saddlebrook
#10 Cross Keys - Rt. 555
#11 Cross Keys - Rt. 555
#14 Cross Keys - Rt. 555
#15 Cross Keys - Rt. 555
#16 Glassboro Cross Keys
#17 Glassboro Cross Keys
#18 Fries Mill Road
#19 Hurffville - Cross Keys
#20 Hurffville - Cross Keys

Storage Tank Location

#1 Whitman Square
#2 Birches-Fries Mill Road
#3 Nob Hill

Elevated Tank Location

#1 Wedgewood
#2 Egg Harbor Road
#3 Rt. 555
#4 5 Points



Washington Township
Gloucester County
New Jersey

2000 0 2000 4000 Feet

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May 2004 (R.O.04)

Source: Washington Township Municipal Utilities Authority, 2001
Q:\PPKINC4\2002\Washington\Master Plan\6214.08(6)

Figure 2
Washington Township M.U.A. Wells and Storage Tanks

Wells

Well Location	Depth (Feet)	G.P.M.	Date	Aquifer	
#1 Whitman Square	616	300	1959	Raritan	(Sealed)
#2 Wedgewood	577	231	1963	Raritan	
#3 Bryant & Wilson Roads	642	1000	1971	Raritan	
#4 Nob Hill	421	400	1972	Raritan	
#5 Birches West	650	1000	1972	Raritan	
#6 Birches-Fries Mill Rd.	654	600	1964	Raritan	(Sealed)
#8 Bells Lake-Barclay Dr	623	600	1966	Raritan	
#9 Saddlebrook	552	1000	1981	Raritan	
#10 Cross Keys-Rt 555	103	1000	1993	Cohansey	
#11 Cross Keys-Rt 555	102	700	1989	Cohansey	
#14 Cross Keys-Rt 555	381	300	1993	Mt Laurel Wenonah	
#15 Cross Keys-Rt 555	712	1000	1993	Raritan	
#16 Glassboro Cross Keys	112	250	1993	Cohansey	
#17 Glassboro Cross Keys	342	350	1993	Mt Laurel Wenonah	
#18 Fries Mill Road	93	700	1999	Cohansey	
#19 Hurffville-Cross Keys	100	583	2002	Cohansey	
#20 Hurffville-Cross Keys	711	850	2002	Raritan	

Storage Tanks

Tank Location	Capacity(Gal)	Height (Feet)	Date	Rehab Or Painted
#1 Whitman Square	235,000	100	1959	1980
#2 Birches-Fries Mill Rd	225,000	95'10"	1967	1992
#3 Nob Hill	235,000	100	1972	1987

Elevated Tanks

#1 Wedgewood	400,000	85	1968	1992
#2 Egg Harbor Road	3,000,000	100	1978	1999 (inside)
#3 Rt 555	3,000,000	109'8"	1989	1989
#4 5 Points	3,000,000	140	1998	New

Source: Washington Township Municipal Utilities Authority, 2001 & 2004

The average residential demand for potable water is 4 million gallons/day and the average commercial demand is 1 million gallons per day, for a total average demand of 5 million gallons per day. With a capacity to treat 12 million gallons of water per day the MUA has more than sufficient capacity to treat all of the water supplied to its customers.[1]

B. Wastewater

Sanitary wastewater generated within Washington Township is collected through the Washington Township's MUA system of gravity sewers, force mains and pump stations located throughout the Township. The sewer collection system with all the pump stations are mapped in Figure 3 . Existing Sanitary Sewer System Facilities, Washington Township, Gloucester County, New Jersey.

Washington Township does not treat the sewage as it is all sent to the Gloucester County Utilities Authority (UA) for treatment. On an average Washington Township collects and pumps 24 million gallons/day of wastewater to the Gloucester County MUA.

The Wastewater Management Planning Agency for Washington Township is the Gloucester County Utilities Authority. The Wastewater Management Plan for Gloucester County Utilities Authority identifies Washington Township within a future sewer service area of the Gloucester County Utilities Authority Wastewater Treatment Plant. The WMP also identifies Washington Township as the largest growth area within the county with anticipated increases in wastewater flows being generated to the Gloucester County Utilities Authority Wastewater Treatment Plant.

With estimated existing flows of 18.20 mgd and projected flows of 25.18 mgd the WMP states that the existing treatment plant, with some modifications, will be able to treat the flows projected for the year 2010. There is sufficient capacity at the Gloucester County Utilities Authority Wastewater Treatment Plant to serve the existing and projected wastewater flows of Washington Township.

[1] Washington Township MUA Office, 20 March 2004

Figure 3

Map of
Existing Sanitary Sewer Systems

See attached map.

III. Recommendations

A. Maintenance, Repair and Replacement

1. Water

   The water distribution system will continue to grow as the Township grows. With a treatment capacity of 12 mgd and an average demand of 5 mgd, treatment capacity is currently not a problem nor will it be in the foreseeable future.

   In order to continue to provide an adequate supply of potable water to the Township, the MUA should continue to plan for the maintenance, repair and replacement of the existing water distribution system. The emphasis should be on the older portions of the system especially the older water mains and wells that the Township owns and operates. The MUA has a program to replace 10 fire hydrants per year and is looking to build an additional 2 million gallon storage tank.

2. Wastewater

   The MUA needs to continue to provide for the collection of wastewater for the existing and future growth of the Township. There is sufficient capacity at the Gloucester County Utilities Authority Wastewater Treatment Plant to serve the existing and projected wastewater flows of Washington Township.

   In order to provide for the adequate collection of wastewater, the MUA should continue to plan and budget for the maintenance, repair and replacement of the existing wastewater distribution system. The upgrade and replacement of equipment at pump stations and the replacement of sewer lines in the older portions of the system should be a priority.

B. Water Supply and Conservation

1. Ground water aquifers are particularly susceptible to contamination from releases of chemicals and from failing septic systems. The Washington Township MUA has worked with the Washington Township Environmental Commission to develop a Wellhead Protection Plan. The Wellhead Protection Plan has identified specific land uses that should be zoned around a public well to protect it from contamination.

   This Wellhead Protection Plan is noted within the Land Use Element of this Master Plan.

2. In light of the recent Governor's Water Emergency for the State of New Jersey and the Township's reliance on groundwater supplies, consideration should be given to water conservation measures, both within the conveyance system and the user location. Requirements for the installation of water saving devices may be incorporated into the land use regulations and/or building codes.

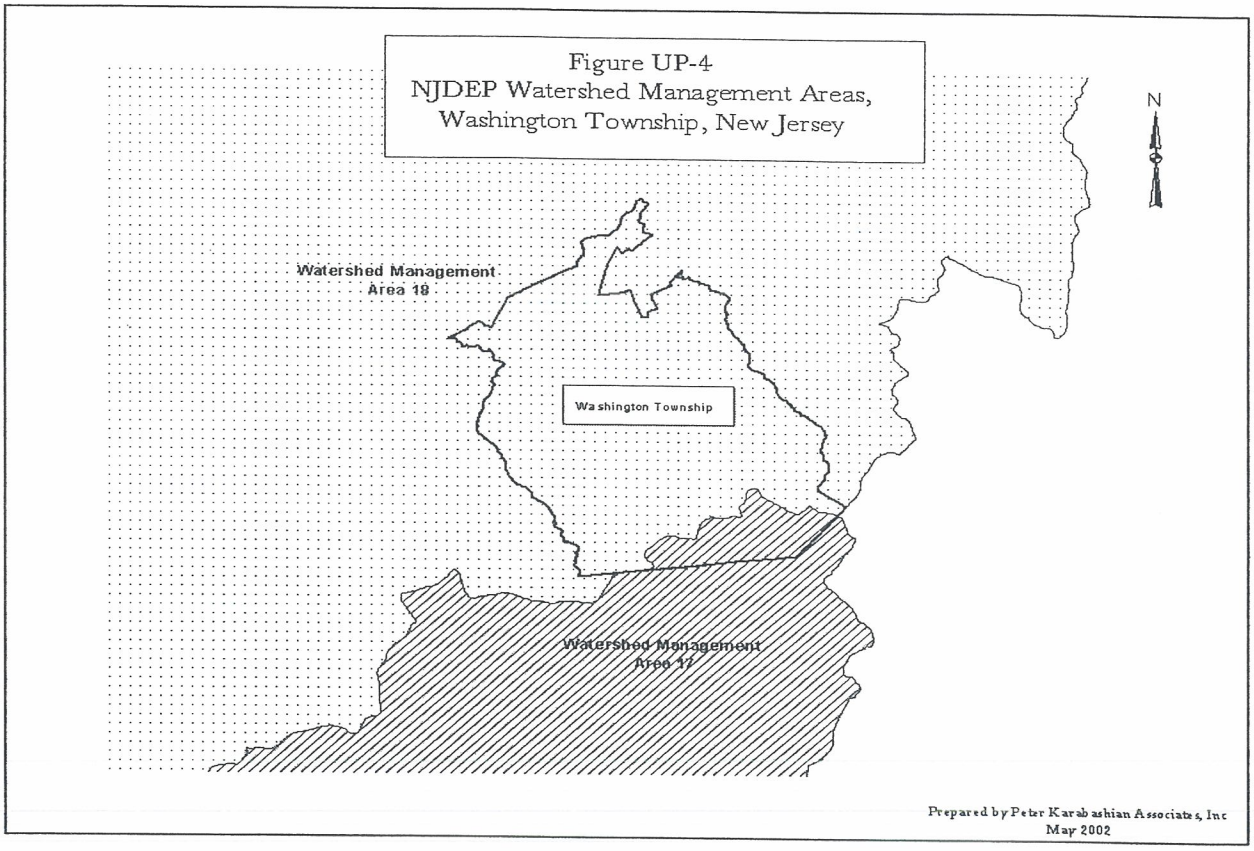
In addition the MUA should continue to educate the public on water conservation measures they can implement in their homes and places of business.

C. Watershed Management Planning

1. Recent efforts to protect the quality of New Jersey's waters has been through a watershed management planning effort. The New Jersey Department of Environmental Protection has divided the state into 20 watershed management areas and is compiling comprehensive management plans for each. The issues of nonpoint source pollution, headwaters destruction and habitat degradation will be addressed in these plans. Nonpoint pollution sources include contaminated runoff from paved surfaces, lawns and farm fields.

   Washington Township is divided into two (2) watersheds as designated by the NJDEP. These boundaries do not follow political boundaries but are determined by existing topography which defines a watershed boundary. As shown in Figure 4, Washington Township is located within Watershed Management Area 18 – Lower Delaware Region and Watershed Management Area 17 – Rancocas Region.

   Steering Committees and Focus Groups are set up to gather input from all stakeholders that are part of the watershed. Washington Township should stay active in the process of the development of the watershed plan for both Watershed Management Area 17 & 18. The watershed committees and groups will compile issues and make recommendations that will be included in the Plan for the watershed. They will include issues such as wastewater collection and treatment and water supply. It is recommended that a representative from the Washington Township MUA be involved with the watershed management process.


Figure UP-4
NJDEP Watershed Management Areas,
Washington Township, New Jersey
N
Watershed Management
Area 18
Washington Township
Watershed Management
Area 17
Prepared by Peter Karabashian Associates, Inc
May 2002