



## Borough of Fair Lawn

# Municipal Stormwater Management Plan

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## Introduction

This Municipal Stormwater Management Plan (MSWMP) documents the strategy for the Borough of Fair Lawn (“the Borough”) to address stormwater-related impacts. The creation of this plan is required by N.J.A.C. 7:14A-25 Municipal Stormwater Regulations.

This plan contains all of the required elements described in N.J.A.C. 7:8 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 acre of land. These standards are intended to minimize the adverse impact of stormwater runoff on water quality and water quantity and the loss of groundwater recharge that provides baseflow in receiving water bodies.

The plan describes long-term operation and maintenance measures for existing and future stormwater facilities.

## Goals

The 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.

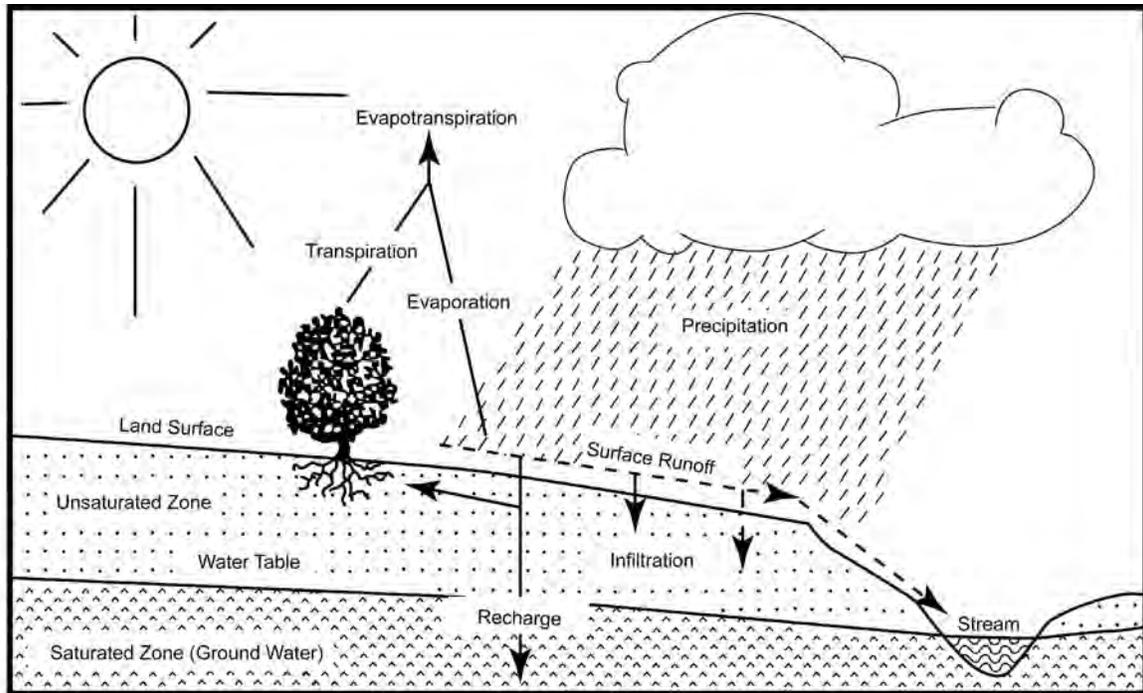
To achieve these goals, this plan outlines specific stormwater design and performance standards for new development. Additionally, the plan proposes stormwater management controls to address impacts from existing development. Preventative and corrective

maintenance strategies are included in the plan to ensure long-term effectiveness of stormwater management facilities. The plan also outlines safety standards for stormwater infrastructure to be implemented to protect public safety.

## Stormwater Discussion

Land development can dramatically alter the hydrologic cycle (See Figure 1) of a site and, ultimately, an entire watershed. Prior to development, native vegetation can either directly intercept precipitation or draw that portion that has infiltrated into the ground and return it to the atmosphere through evapotranspiration. Development can remove this beneficial vegetation and replace it with lawn or impervious cover, reducing the site's evapotranspiration and infiltration rates. Clearing and grading a site can remove depressions that store rainfall. Construction activities may also compact the soil and diminish its infiltration ability, resulting in increased volumes and rates of stormwater runoff from the site. Impervious areas that are connected to each other through gutters, channels, and storm sewers can transport runoff more quickly than natural areas. This shortening of the transport or travel time quickens the rainfall-runoff response of the drainage area, causing flow in downstream waterways to peak faster and higher than natural conditions. These increases can create new and aggravate existing downstream flooding and erosion problems and increase the quantity of sediment in the channel. Filtration of runoff and removal of pollutants by surface and channel vegetation is eliminated by storm sewers that discharge runoff directly into a stream. Increases in impervious area can also decrease opportunities for infiltration which, in turn, reduces 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. Reduced base flows can also negatively impact the hydrology of adjacent wetlands and the health of biological communities that depend on base flows. Finally, erosion and sedimentation can destroy habitat from which some species cannot adapt.

Figure 1: Groundwater Recharge in the Hydrologic Cycle



Source: New Jersey Geological Survey Report GSR-32.

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.

## Background

The Borough encompasses 5.3 square mile area in Bergen County, New Jersey. Basically the Borough is fully developed, with less than one percent of the land being vacant. Therefore after review of the Borough's Master Plan and the limited possibility of growth a build-out analysis is not required at this time. The New Jersey Division of Labor Market and Demographic Research has projected a 3.8% increase in population growth from 2010-2019 and 4.4% growth from 2019-2029 in Bergen County. However, Fair Lawn has just about reached the saturation point for further residential development. Therefore we believe this number to be excessively high. Another factor considered in the Borough's projection is the number of older couples currently living in the Borough will probably move and be replaced by younger families with children. Taking this into account it is likely that we will see some modest growth over the next fifteen years. Population figures were 30,548, 31,637 and 32,457 in the years 1990, 2000 and 2010 respectively. With respect to the future development within the Borough, the development pattern within the Borough will most certainly be up and not out. Therefore no additional runoff is anticipated. The entire Borough lies within the PA-1 (Metropolitan) planning Area. This designation is assigned to the areas that are mostly developed.

The stabilized population and lack of land for potential development has little impact on increasing stormwater runoff volumes and pollutant loads to the receiving waterways within the Borough. Figure # 2 depicts the Borough Boundary and Waterways.

The Borough depends on entirely on a sanitary sewer collection system. The sanitary sewer system is separated from the stormwater sewer system. The Borough does not operate a sanitary sewage treatment facility; all sewage flows are diverted to and is treated by Passaic Valley Sewage Treatment Authority.

The Borough's water supply is from a variety of sources. The NJDEP permits the Borough to operate 16 production wells, sunk about 400 feet into an underground source of water called the New Brunswick Aquifer. On average, the production wells provide fifty-five percent of the Borough's water. These wells are located throughout the Borough. Figure # 3 depicts the Borough's public water supply wells.

The Borough augments its well water supply with the bulk purchase of treated water from the Passaic Valley Water Commission (PVWC) and United Water New Jersey (UWNJ). About thirty-five percent of our water comes from the PVWC. The primary source of water for the PVWC is the Pompton and Passaic Rivers. UWNJ supplies us about ten percent of our water. The primary source of water received from UWNJ come from four reservoirs, the Oradell and Woodcliff Lake reservoirs in New Jersey, and Lake Tappan and Lake Deforest reservoirs in New York. Through a vast regional network of interconnected pipelines, we may receive other treated water supplies from the Wanaque, Monksville and Boonton reservoirs.

The NJDEP is designating an increasing number of streams in the State as Category-1 (C-1) waterways, especially those that provide drinking water and important habitat for threatened and endangered species as well as popular recreation fish such as trout. Streams can be designated as C1 based on their ecological significance, recreational or water supply, or the location within public preserved open space. This designation prevents further degradation of existing water quality. There are no C1 waterways in the Borough. The NJDEP assigns waterways various water classifications. In the Borough all waterways have a classification of FW2-NT indicating a general fresh surface water classification that does not support trout production or maintenance. Additionally the Borough falls within the Watershed Management Area (WMA-4) Lower Passaic, Saddle. The management areas are divided into smaller sub-watersheds assigned a 14 digit number referred to as Hydrologic Unit Codes (HUC-14). The Borough has five different HUC-14's. They are shown in Figure # 4.

The following are the Borough's major watercourses:

Passaic River (FW2-NT – [HUC-14 – 02030103120070 & 02030103120080])

The Passaic River generally flows from north to south along the entire westerly border of the Borough.

Saddle River (FW2-NT- [HUC-14 02030103140060 & 02030103140050])

The Saddle River generally flows from north to south along the entire easterly border of the Borough.

Henderson Brook (FW2 –NT – [HUC-14 – 02030103120070])

The Henderson Brook a tributary to the Passaic River; flows generally from north to south from the northern border of the Borough with Glen Rock to the Passaic River.

Jordan Brook (FW2-NT – [HUC-14 – 02030103140050])

The Jordan Brook a tributary to the Saddle River, beginning within the center of the Borough; generally flows northeasterly to east to the Saddle River.

Beaverdam Brrok (FW2-NT – [HUC-14 – 02030103140050])

The Beaverdam Brook a tributary to the Saddle River; originates within the southeasterly portion of the Borough and generally flows west to east into the Saddle River.

Diamond Brook (FW2-NT- [HUC-14 – 02030103120070])

The Diamond Brook a tributary to the Passaic River; flows generally from north to south from the northern border of the Borough with Glen Rock to the Passaic River.

The NJDEP and other regulatory agencies collect water quality chemical data on streams throughout the State. Since there are no impaired waterways in the borough, no Total Maximum Daily Loads (TMDL) have been established. A TMDL is the amount of a pollutant that can be accepted by the waterbody without causing an exceedance of water quality standards or with interfering with the ability to use the waterbody for their designated uses.

Portions of the Borough contains or lies within wellhead protection areas. A well head protection area is divided into three tiers. Tier 1(2 year), Tier 2(5 year) and Tier 3 (12 year) represent the time of travel, a ground water contaminate in the zones could be expected to reach a municipal potable water supply well. Wellhead protection areas within the Borough are shown in Figure # 5.

## Design and Performance Standards

The Borough has adopted the design and performance standards 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 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 will be submitted to the county for review and approval within [24 months of the effective date of the Stormwater Management Rules.]

During construction, Borough inspectors will observe the construction of the project to ensure that the stormwater management measures are constructed and function as designed. However, the Borough may choose to revise land use and zoning ordinances to prescribe how nonstructural stormwater management measures may be addressed in conformance with all future management rules.

## Plan Consistency

The Borough is not within a Regional Stormwater Management Planning Area and no TMDLs have been developed for waters within the Borough; therefore this plan does not need to be consistent with any regional stormwater management plans (RSWMPs) nor any TMDLs. If any RSWMPs or TMDLs are developed in the future, this Municipal Stormwater Management Plan will be updated to be consistent with any new regulations.

The Municipal Stormwater Management Plan is consistent with the Residential Site Improvement Standards (RSIS) at N.J.A.C. 5:21. The municipality 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 requires all new development and redevelopment plans to comply with New Jersey's Soil Erosion and Sediment Control Standards. During construction, Borough inspectors will observe on-site soil erosion and sediment control measures and report any inconsistencies to the local Soil Conservation District.

## Nonstructural Stormwater Management Strategies

The Borough has reviewed the master plan and ordinances, and has provided a list of the Articles in the Borough land use and zoning ordinances that exist and/or was modified to incorporate nonstructural stormwater management strategies as currently amended.

Article V Stormwater Management – 125-53 the Borough Code, was reviewed with regard to incorporating nonstructural stormwater management strategies. Several changes were made to Article V to incorporate these strategies.

**Article IV, 125-42 : Transition requirements** - requires buffer areas along all lots separating a nonresidential use from either a residential use or residential zoning district line, and along all street lines where loading and storage areas can be seen from the street.

**Curbs and Gutters:** within the Borough of Fair Lawn all streets are curbed or gutter.

**Drainage, Watercourses and Flood Hazard Areas** . The adoption of Article V Stormwater Management – 125-53 addresses this issue

**Driveways:** Maximum width of driveways has been reviewed and recorded in Chapter 125, Section 125-48

**Nonconforming Uses, Structures or Lots** requires a variance for existing single family homes proposing additions that exceed the maximum percent impervious. The homeowner must mitigate the impact of the additional impervious surfaces unless the stormwater management plan for the development provided for these increases in impervious surfaces. This mitigation effort must address water quality, flooding, and groundwater recharge as described in Article V, 125-53

**Off-site and Off-tract Improvements:** Chapter 125 has been reviewed, with the amendments to Article V, Section 152-53, all was found to be in compliance with the new rule. Future amendments based on county or state review shall be incorporated into the ordinance.

**Chapter 125 Section 125-45 Trees:** This ordinance establishes the control of cutting replanting and replacement of trees within any property within the Borough.

**Sidewalks:** sidewalks are required in all new commercial construction as part of Chapter 125. The one exception is within single family residential properties where sidewalks currently do not exist.

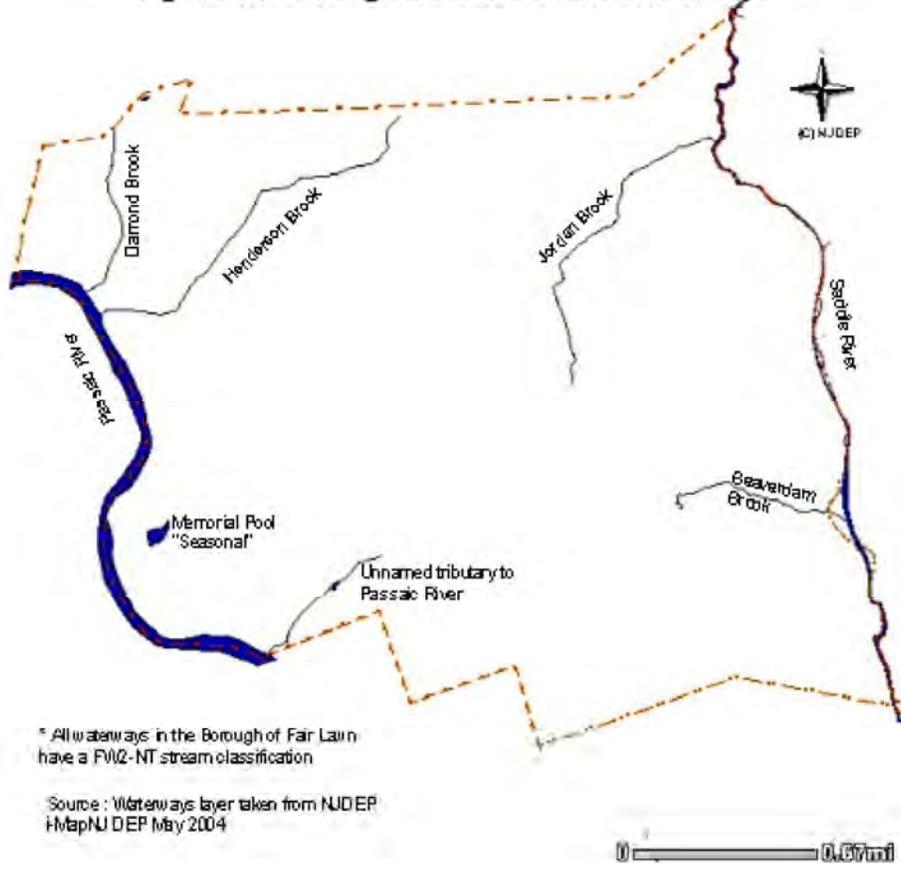
**Soil Erosion and Sediment Control:** Chapter 125 states all state, county and local agencies approvals must be obtained prior to any approval or issuance of any Certificate of Occupancy.

**Stormwater Runoff:** addresses stormwater runoff by referencing Chapter 125, Article V Stormwater Management – 125-53; which was updated to include all requirements outlined in N.J.A.C. 7:8 .

## Mitigation Plan

A mitigation plan is for a proposed development that may seek a variance or exemption from the storm water management design and performance standards. It is the intention of the Borough not to grant any variances or exemptions from the design and performance standards.

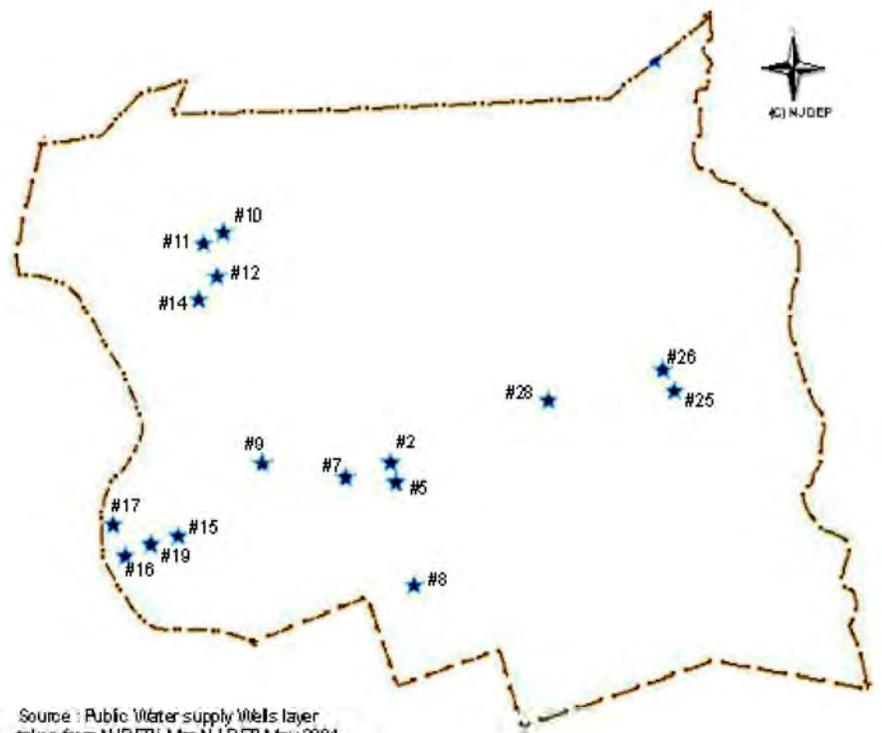
**Figure 2 : Borough Boundries and Waterways**



\* All waterways in the Borough of Fair Lawn have a FVW-NT stream classification

Source : Waterways layer taken from NJDEP I-Map NJ DEP May 2004

**Figure 3 : Borough Public Water Supply Wells**



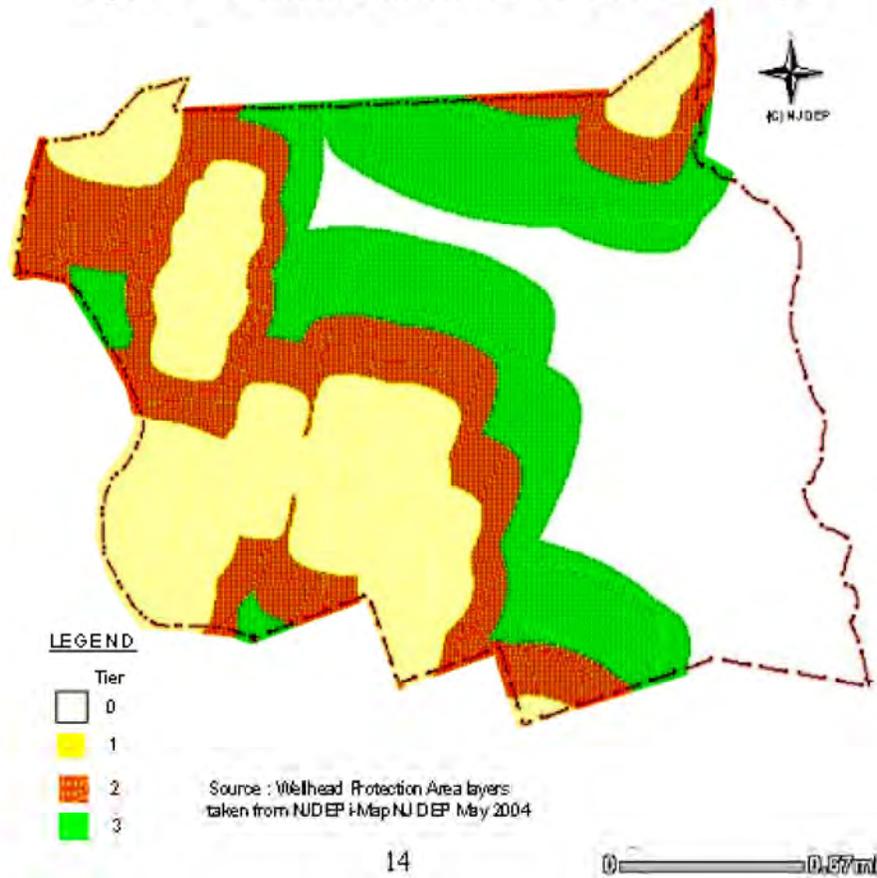
Source : Public Water supply Wells layer taken from NJDEP I-Map NJ DEP May 2004

**Figure 4 : Hydrologic Units (HUC-14)**



Source : HUC-14 layer taken from NJDEP  
i-Map NJ DEP May 2004

**Figure 5 : Wellhead Protection Areas in the Borough**



# ZONING MAP

## Legend

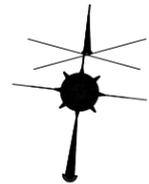
- R-1-1 (10,000 Sq. Ft.)
- R-1-2 (7,500 Sq. Ft.)
- R-1-3 (6,500 Sq. Ft.)
- R-2 Two Family
- R-3-2 Multi-Family
- R-3-1 Multi-Family
- R-4 Reserved
- R-5-1 Townhouses
- R-5-2 Townhouses
- R-5-3 Townhouses
- R-5-4 Inclusionary Townhouse & Multifamily
- R-7 Age-Restricted Affordable Multifamily Residential Overlay District
- CR Combined Residential
- B-1 Restricted Business
- B-2 General Business
- B-3 Business
- B-4 River Road Business
- B-5 River Road Business
- OBS-1 Office & Business Services
- OBS-2 Office & Business Services
- I-1 Restricted Industry
- I-2 Industrial
- CA Commercial Antenna
- R6 Inclusionary Multi-Family Residential
- POS Public Open Space
- MU Mixed-Use Planned Development

## Note

Unless indicated otherwise by dimensions on this map, it is intended that all zone boundaries follow property lines, or connect property corners as shown on the official Tax Atlas of the Borough of Fair Lawn revised to 01/1999. A copy of which is on file in the office of the Borough Engineer.

## Revised

Date	Ord.#
2003	1936-2003
2003	1945-2003
2004	1967-2004
	1989-2004
2007	2070-2007
2010	2172-2010
	2174-2010
	2179-2010
	2181-2010
	2193-2010
2012	2236-2012
2013	2272-2013
2015	2354-2015
2016	2370-2016
	2383-2016
2017	2418-2017



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