

**CITY OF NORTHFIELD, NJ
RESOLUTION NO. 118-2024**

**A RESOLUTION REFERRING A PROPOSED REHABILITATION AREA
DESIGNATION FOR THE CITY OF NORTHFIELD, COUNTY OF
ATLANTIC TO THE CITY OF NORTHFIELD PLANNING BOARD**

WHEREAS, NJSA 40A:12A-14, authorizes the governing body of any municipality, by Resolution, to determine whether, according to the criteria set forth therein, an area within the municipality is in need of rehabilitation, and that a program of rehabilitation, as defined in N.J.S.A. 40A:12A-3 may be expected to prevent further deterioration and promote overall development of the community; and

WHEREAS, pursuant to NJSA 40A:12A-14(a), the Governing Body must refer the proposed Resolution to the Planning Board for the Board's recommendation regarding the proposed declaration as an area in need of rehabilitation.

NOW THEREFORE BE IT RESOLVED by the Council for the City of Northfield, County of Atlantic that:

1. The attached proposed resolution entitled "RESOLUTION DESIGNATING THE CITY OF NORTHFIELD, COUNTY OF ATLANTIC AS AN AREA IN NEED OF REHABILITATION" is hereby referred to the City of Northfield Planning Board for its statutory review pursuant to NJSA 40A:12A-14(a).
2. The Planning Board is further directed to provide its recommendation within the statutorily mandated 45-day period.
3. This Resolution shall take effect immediately.

I, MARY CANESI, RMC, Municipal Clerk of the City of Northfield, do hereby certify that the foregoing Resolution was duly adopted at a regular meeting of the City Council of Northfield, held this 21st day of May 2024.


Mary Canesi, RMC, Municipal Clerk

Roll Call:

Aye: Bucci, Carfagno, Dewees, Polistina, Notaro, Smith, Leeds

Nay:

Abstain:

Absent:

**REHABILITATION DESIGNATION
MUNICIPAL WIDE
CITY OF NORTHFIELD, ATLANTIC COUNTY**



May 16, 2024

As recommended by the Planning Board by Resolution _____ on _____;
Adopted by the Governing Body by Resolution _____ on _____.

Prepared By:

Tiffany A. Morrissey, AICP, PP#5533

The original of this document was signed and
sealed in accordance with NJAC 13:41-1.3.b

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**REHABILITATION DESIGNATION
MUNICIPAL WIDE
CITY OF NORTHFIELD, ATLANTIC COUNTY**

MAYOR

Erland Chau

COUNCIL MEMBERS

Eric Leeds, Council President
Greg Dewees, Council President Pro Tempore
Carolyn Bucci
Renee Carfagno
David Notaro
Tom Polistina
Brian Smith

Mary Canesi, Registered Municipal Clerk

PLANNING BOARD

Dr. Richard Levitt, Chairman
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Daniel Reardon, Alt. #4

Joel Fleishman, Solicitor
Matt Doran Professional Engineer
Robin Atlas, Secretary

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INTRODUCTION

The following study has been prepared for the Governing Body of the City of Northfield to determine whether the City of Northfield qualifies as an “Area in Need of Rehabilitation” in accordance with the New Jersey Local Redevelopment and Housing Law (LRHL) at N.J.S.A. 40A:12A-1 et seq.

On May 21, 2024 the Northfield City Council by Resolution # _____ directed the Land Use Board to provide a recommendation as to whether or not the entire City met the criteria as an “Area in Need of Rehabilitation” in accordance with the LRHL. The primary purpose for this effort is to help strengthen the City’s economic base by improving the conditions and redevelopment opportunities on property suited for such development.

As provided for in the Local Redevelopment and Housing Law, the City must gather and evaluate existing conditions of the study area in order to conclude if the area warrants a finding that the property meets the criteria of an area in need of rehabilitation. Such a designation permits the city to undertake a number of activities to help revitalize and redevelop the Area, activities that would not be possible otherwise. These include the preparation of a Redevelopment Plan which enables the leasing or selling of property without public bidding, contracts with private entities, the use of various tax abatement programs and other actions in conjunction with the adopted redevelopment plan.

The LRHL specifies a process which must be followed in designating a rehabilitation area. This is a four-step process as follows:

1. The Governing Body prepares a proposed resolution with any supporting report attached, which would declare identified properties as an area in need of rehabilitation and refers that proposed resolution and any report attached to the Planning Board for its review.
2. Within 45 days of the receipt of the proposed resolution, the Planning Board submits its recommendations, including any modifications recommended, to the Governing Body for its consideration. The Governing Body is not bound by the Planning Board’s recommendations and may adopt a resolution with or without modifications. If the Planning Board does not submit recommendations within 45 days, the Governing Body may adopt the resolution with or without modification.
3. The Governing Body adopts the proposed resolution, with or without modification, designating the proposed area as an Area in Need of Rehabilitation.
4. The Rehabilitation Designation is required to be sent to the NJ Commissioner of Community Affairs for review.

STUDY AREA

The Study Area includes the entire City, all blocks, and lots. Included in the Appendix is the City Zoning Map showing the extent of the city and all properties within the municipality. Northfield is located in the eastern portion of Atlantic County, consisting of 3.45 square miles. The city is bounded to the south by the City of Linwood, to the north by the City of Pleasantville, and to the east and west by the Township of Egg Harbor. The City of Northfield was incorporated in 1905 after separating from Egg Harbor Township.

Northfield is a small community with several commercial establishments and professional offices generally along Tilton Road and Route 9. The majority of the land within the city consists of Residential land uses and Residential zoning classifications. Commercial development is focused on the two main roadways transecting the city from north to south along New Road (Route 9) and extending east into the center of the City along Tilton Road. The city has a population of 8,434 according to the 2020 Census, this is a decrease of 190 persons since 2010, or 2.2%. The City's 2010 Census population was reported at 8,624 persons.

The City of Northfield is within a Metropolitan Planning Area (PA1) under the New Jersey State Development and Redevelopment Plan. The State Planning goals for PA1 Planning Areas include revitalizing cities and towns, to stabilize older suburbs and protect the character of existing stable communities. The City of Northfield has undertaken this Study to further the revitalization of the local area, consistent with the goals of the State Plan.

STATUTORY REQUIREMENTS

The first part of this document consists of the Study which is a gathering and evaluation of existing conditions in order to conclude if they warrant a finding that the area is in Need of Rehabilitation under the statutory requirements. In accordance with the Local Redevelopment and Housing Law (N.J.S.A. 40A:12A-14) an area can be determined to be in Need of Rehabilitation if it is determined that a program of rehabilitation may be expected to prevent further deterioration and promote the overall development of the community. It must also be found that any of the following conditions exist in the area:

1. A significant portion of the structures therein are in a deteriorated or substandard condition;
2. More than half the housing stock in the delineated area is at least 50 years old;
3. There is a pattern of vacancy, abandonment or underutilization of the properties in the area;
4. There is a persistent arrearage of property tax payments on the properties in the area;
5. Environmental contamination is discouraging improvements and investment in properties in the area; or
6. A majority of the water and sewer infrastructure in the delineated area is at least 50 years old and is in need of repair or substantial maintenance.

Where warranted by consideration of the overall conditions and requirements of the community, a finding for rehabilitation may extend to the entire area of a municipality.

The LRHL defines Rehabilitation to mean “an undertaking, by means of extensive repair, reconstruction or renovation of existing structures, with or without the introduction of new construction or the enlargement of existing structures, in an area that has been determined to be in need of rehabilitation or redevelopment, to eliminate substandard structural or housing conditions and arrest the deterioration of that area.” If any of the above criteria are met then it must also be found that a program of rehabilitation, as defined herein, may be expected to prevent further deterioration and promote the overall development of the community.

FINDINGS

Where there exists conditions of deterioration of land uses and services and an improper, or lack of proper development, the legislature has adopted the LRHL to aide local governments to help reverse these conditions. This statute was adopted by the legislature to aide local governments in “promoting the physical development that will be most conducive to the social and economic improvement of the State and its several municipalities.” (N.J.S.A. 40A:12A-2a & c)

An investigation of the City was completed which included a review of the existing housing stock, the physical condition of the sewer infrastructure, and other similar items. The investigation concluded that the Study Area meets the required criteria of an area in need of rehabilitation as defined by the LRHL.

***N.J.S.A. 40A:12A-14.2 –
More than half the housing stock in the delineated area is at least 50 years old;***

It is clear from this analysis that the City has an aging housing stock. A review of the local tax assessment records indicates that there are a total of 3,178 residential single-family dwelling units. The tax records include the dates the housing units were constructed. A total of 2,335 housing units were constructed in 1974 or earlier. Any housing unit constructed in 1974 or earlier is over 50 years of age. The total percentage of the housing units over 50 years of age is 73.47%.

Total Housing Units	Housing Units Built 1974 or Earlier	Percentage of Total Housing Stock
3,178	2,335	73.47%
Based on 2024 Tax Assessment Records. Housing Units include Property Class 2 and Class 15F		

To further support the local tax records, the following table utilizes Census Data from the 2022 American Community Survey 5-year estimates for the year housing structures were built. Note that the total number of housing units is different than tax records, this is due to the estimates and data sets used by the ACS. This data is provided to demonstrate that the tax data is substantially consistent in terms of age of housing stock.

This table estimates a total of 3,291 housing units. Any unit built prior to 1974 would be 50 years or older. The categories do not provide for a year-by-year basis, only a ten-year period. The regulations require a finding that 50% or more of the units be at least 50 years of age or older. That would require a minimum of 1,646 housing units to be at least 50 years of age or older. Using the table below and summarizing from 1969 and earlier there are an estimated 2,068 units, 62.83% of the total housing units reported, which are 55 years of age and older. Therefore, it can be reasonably concluded that this criterion is satisfied.

Year Built	Estimate Number	% of Total
2020 or later	0	--
2010 to 2019	38	1.15%
2000 to 2009	283	8.59%
1990 to 1999	302	9.17%
1980 to 1989	333	10.12%
1970 to 1979	267	8.11%
1960 to 1969	765	23.24%
1950 to 1959	739	22.46%
1940 to 1949	153	4.65%
1939 or earlier	411	12.49%
Total Housing Units	3,291	100%

This analysis demonstrates that there exists an aging housing stock in the City. A program of rehabilitation may be expected to encourage investment back into the local housing stock and community which would promote the overall development of the community.

N.J.S.A. 40A:12A-14.6 –

A majority of the water and sewer infrastructure in the delineated area is at least 50 years old and is in need of repair or substantial maintenance;

The City of Northfield had completed a “Sanitary Sewer System Asset Management Plan” prepared by Schaeffer Nassar Scheidegg Consulting Engineers. This report reviewed the City’s sewer infrastructure. The City of Northfield is serviced by a sewage collection system, the majority of which was installed around 1970. There exists within the city over 200,705 linear feet of sanitary sewer collection piping. Over the years the city has completed a few system upgrades, however most of the system piping dates back to the time of original construction, over 50 years ago. The existing collection system consists of mostly vitrified clay sewer main, currently 96% of the total sewer piping is vitrified clay pipe.

The Asset Management Plan assessed the system components including the manholes, pumpstations, pipes and laterals. The report made the following recommendations:

1. Annual slip lining program, the pervious lining project performed showed a major reduction in the sewer flow to the ACUA, which resulted in reduction of the annual sanitary sewer treatment charges, therefore the Municipality should budget for an annual slip lining project, which will reserve the existing system and reduce the ground water infiltration, which in turns saves of the cost of the sewer treatment by minimizing the ground water infiltration. The slip lining budget should be around \$200,000 annually.
2. Annual deep manhole inspection to ensure that the minimal ground water infiltration at the pipe connection is in not getting worse, the budget for this should be around \$25,000 annually.
3. A solution to eliminate the existing sewer line under the marsh area between Revere Avenue and Bay Drive would be by constructing a new pump station at the end of Revere Avenue and abandoning the existing gravity main. The budget for the new pump station and the force main is around \$300,000.
4. The existing sanitary sewer plans must be updated to reflect all existing sanitary sewer system and lateral location and Rosedale II pump station and force main. The exiting Sanitary sewer plans are missing all the new developments which were built in the past 35-40 years, and the Rosedale II pump station and force main location, the budget for this work should be around \$35,000.

5. The municipality purchased a pipe crawler camera, and the Sewer Department should implement a program to systematically video the existing sanitary sewer main, this work could be implemented as a sewer department policy.
6. A few sanitary sewer cleanouts are missing, and location of few laterals are unknown, the Sewer Department should utilize the camera to locate these laterals and replace the missing cleanouts. This could be a liability for the municipality in utility mark out situation.
7. Forms should be created to keep track of all inspections mentioned above, and notes should be kept on file at the Municipal Public Works Department, for any modifications or any problems observed.

Based upon the above findings it is clear that the City's sewer infrastructure was constructed over 50 years ago and is in need of repair, and in some instances substantial maintenance. A program of rehabilitation would assist with future investment into the city and promote the overall development of the community. The referenced report is included as an Appendix to this document.

CONCLUSION

The City of Northfield is an older suburban community with an older housing stock and aging infrastructure. A program of rehabilitation, as provided for by law, would result in the future investment back into the City and its infrastructure and prevent further deterioration of these conditions and promote the overall development of the community.

Based upon the above findings, the Study Area meets the criteria of the Local Redevelopment and Housing Law as an area in need of rehabilitation under N.J.S.A. 40A:14. It is therefore recommended that the Governing Body and Land Use Board take the action necessary to make that determination according to law.

- **APPENDIX I – Governing Body Resolution**
- **APPENDIX II – Planning Board Resolution**
- **APPENDIX III – Zoning Map**
- **APPENDIX IV – Sanitary Sewer System Report**

APPENDIX I

**CITY OF NORTHFIELD, NJ
RESOLUTION NO. ____-2024**

**RESOLUTION DESIGNATING THE CITY OF NORTHFIELD,
COUNTY OF ATLANTIC AS AN AREA IN NEED OF
REHABILITATION**

WHEREAS, N.J.S.A. 40A:12A-14, authorizes the governing body of any municipality, by Resolution, to determine whether, according to the criteria set forth therein, an area within the municipality is in need of rehabilitation, and that a program of rehabilitation, as defined in N.J.S.A. 40A:12A-3, may be expected to prevent further deterioration and promote overall development of the community; and

WHEREAS, pursuant to N.J.S.A. 40A:12A-14(a), the Council for the City of Northfield has referred this Resolution to the City of Northfield Planning Board and has received the Board's favorable recommendation to declare the City of Northfield an area in need of rehabilitation.

NOW, THEREFORE, BE IT RESOLVED by the Council for the City of Northfield, County of Atlantic that:

1. The City of Northfield meets one or more of the requirements of N.J.S.A. 40A:12A-14 to be deemed an Area in Need of Rehabilitation as set-forth in a report prepared by the Township Planner, Tiffany A. Morrissey, PP, AICP dated May 16, 2024; and
2. The City of Northfield meets the requirements of N.J.S.A. 40A:12A-14 to be deemed an Area in Need of Rehabilitation. Specifically, more than half of the housing stock in the Township is at least 50 years old; and

3. A program of rehabilitation, as defined in N.J.S.A. 40A:12A-3, may be expected to prevent further deterioration and promote overall development of the community; and
4. The City of Northfield Planning Board has provided a favorable recommendation to the Council for the City of Northfield for designation of the City of Northfield as an area in need of rehabilitation; and
5. The City of Northfield is hereby designated as an area in need of rehabilitation according to the criteria of N.J.S.A. 40A:12A-14.

I, MARY CANESI, RMC, Municipal Clerk of the City of Northfield, do hereby certify that the foregoing Resolution was duly adopted at a regular meeting of the City Council of Northfield, held this ____ day of _____, 2024.

Mary Canesi, RMC, Municipal Clerk

Appendix 2

RESOLUTION OF THE CITY OF NORTHFIELD PLANNING BOARD RECOMMENDING THE CITY OF NORTHFIELD AS AN AREA IN NEED OF REHABILITATION

RESOLUTION #__ - 2024

WHEREAS, N.J.S.A. 40A:12A-14, authorizes the governing body of any municipality, by Resolution, to determine whether, according to the criteria set forth therein, any area of the municipality is an area in need of rehabilitation, and that, where warranted by consideration of the overall conditions and requirements of the community, the finding of need for rehabilitation may extend to the entire area of the municipality; and

WHEREAS, N.J.S.A. 40A:12A-14(a) requires the governing body to refer its proposed Resolution designating an area, or areas, of the municipality in need of rehabilitation to the municipal planning board for its consideration and the Governing Body has submitted such proposed Resolution, attached hereto; and

WHEREAS, pursuant to N.J.S.A. 40A:12A-14, the City of Northfield Planning Board has reviewed and considered the proposed Resolution designating an area, or areas, of the municipality in need of rehabilitation as well as considered the evidence presented to the Planning Board regarding satisfaction of the criteria set forth in N.J.S.A. 40A:12A-14; and

WHEREAS, the proposed Resolution finds that the City of Northfield satisfies one or more of the criteria set forth in N.J.S.A. 40A:12A-14 because (2) more than half of the housing stock in the Township is at least 50 years old; and

WHEREAS, the proposed Resolution finds that a program of rehabilitation as defined in N.J.S.A. 40A:12A-3 may be expected to prevent further deterioration and promote overall development of the community: and

WHEREAS, the Planning Board is in accord with the proposed Resolution's determination that the City of Northfield satisfies one, or more, of the criteria set forth in N.J.S.A. 40A:12A-14.

NOW, THEREFORE, BE IT RESOLVED by the Planning Board of the City of Northfield, that it recommends that the Governing Body declare the entire area of the City of Northfield to be an area in need of rehabilitation via adoption of a resolution as required by N.J.S.A. 40A:12A-14, specifically that (2) more than half of the housing stock in the Township is at least 50 years old, and a program of rehabilitation, as defined in N.J.S.A. 40A:12A-3, may be expected to prevent further deterioration and promote the overall development of the site and the community

City of Northfield Planning Board

, Chairman

Approved this _____ day
of _____, 2024

, Secretary

APPENDIX III

LEGEND

MUNICIPAL BOUNDARY

R-1 SINGLE FAMILY 3-4 DU/AC

R-1A SINGLE FAMILY 3-4 DU/AC-VARIABLE LOT SIZE

R-2 SINGLE FAMILY 4-5 DU/AC

R-3 SINGLE FAMILY 6-7 DU/AC

R-4 SINGLE FAMILY

AH ADULT HOUSING 15 DU/AC - AGE RESTRICTED, INDEPENDENT LIVING, OR CONGREGATE CARE / ASSISTED LIVING

AH1-AR AFFORDABLE HOUSING 1 - AGE RESTRICTED 12 DU/AC

N-B NEIGHBORHOOD BUSINESS

C-B COMMUNITY BUSINESS

R-C REGIONAL COMMERCIAL

R-C REGIONAL COMMERCIAL - AFFORDABLE HOUSING MIXED USE IS PERMITTED WITH CERTAIN RESTRICTIONS (BLOCK 16.01 LOTS 52 & 57)*

O-P OFFICE PROFESSIONAL

O-PB OFFICE PROF. BUSINESS

C-C COUNTRY CLUB

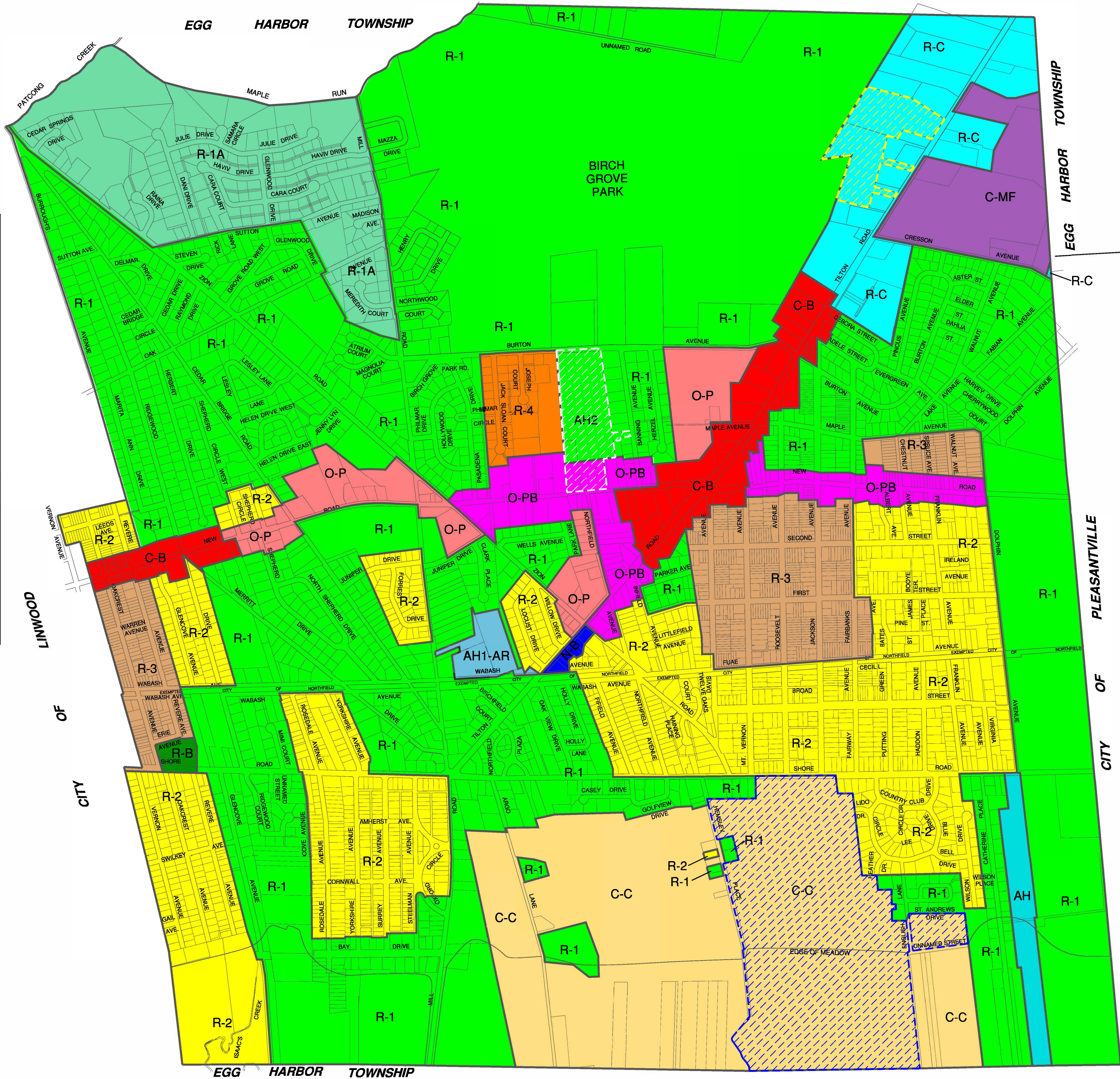
C-C COUNTRY CLUB - TOWNHOUSES PERMITTED SUBJECT TO CERTAIN CONDITIONS (BLOCK 175, PORTION OF LOT 48 & BLOCK 179.01, LOT 1.01)*

R-B RESIDENTIAL BUSINESS

C-MF COMMERCIAL MULTI-FAMILY

AH2 OVERLAY ZONE ADULT HOUSING - AGE RESTRICTED, INDEPENDENT LIVING, OR CONGREGATE CARE / ASSISTED LIVING (BLOCK 40, LOTS 28, 29, & 40)*

* PER ORDINANCE #7-2018 ADOPTED SEPT. 25, 2018



NOTE: ZONE MAP IS BASED ON DORAN ENGINEERING, PA
ZONE MAP DATED 9-22-10, LAST REVISED 1-2-15

PLANS FOR PERMIT PURPOSES ONLY

Schaeffer Nassar Scheidegg
CONSULTING ENGINEERS, LLC
Surveyors • Environmentalists • Planners
1425 Cantillon Boulevard • Maye Landing • New Jersey
Telephone: (609) 625-7400 • Fax: (609) 909-0253
Certificate of Authorization #24GA28103900

THIS PLAN IS VALID AND FOR THE USE OF THE CITY OF NORTHFIELD ONLY. IT IS NOT TO BE USED FOR ANY OTHER PURPOSES WITHOUT THE WRITTEN CONSENT OF THE ENGINEER.

RAMI N. NASSAR
PROFESSIONAL ENGINEER
NEW JERSEY LIC. NO. 34902
DATE

ZONING MAP FOR:
CITY OF NORTHFIELD
1600 SHORE ROAD
ATLANTIC COUNTY
NEW JERSEY

DATE 9-22-10
SCALE N.T.S.
BY E.K.
CHECKED R.N.N.
SHEET NO. 1
1 OF 1
FILE# NF13-02

REV #	DATE	BY	REVISION DESCRIPTION
2	11/18/19	SNS	REVISED PER ORDINANCE
1	9/18/19	SNS	REVISED PER ORDINANCE

APPENDIX IV



SANITARY SEWER SYSTEM ASSET MANAGEMENT PLAN

Prepared for:
City of Northfield
1600 Shore Road
Northfield, NJ 08225

Prepared by:
Schaeffer Nassar Scheidegg
Consulting Engineers, LLC
1425 Cantillon Blvd
Mays Landing, NJ 08225

Project # NF13-43



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1. Executive Summary

This sanitary sewer asset management plan (AMP) is intended to provide an assessment of routine maintenance staffing requirements and to provide an opinion of asset conditions and future needs. Operating, maintenance and replacement costs are reviewed for all system assets, to provide a defined level of services for the utility system.

The goal of an asset management plan is to use system wide information to determine the lowest life cycle cost for maintenance, repair and replacements to maintain that level of service. By performing pre-emptive maintenance on the system and timing repairs before they become emergencies, the City can make the most of their limited funds over the long term. Maps of the City's sanitary sewer system are found at the end of this report under the Sewer System As-Built section.

A summary of sanitary sewer system assets is listed in Table 1.1 below:

Table 1.1: System Asset Summary		
Total Gravity Sewer	193,183	LF
Total Force-Main Sewer	12,760	LF
Total Manholes	699	EA
Laterals	2,737	EA
Pump Stations	8	EA

The Breakdown of sizing for the piping for the system is shown in Table 1.2:

Table 1.2: Sanitary Gravity Sewer Sizing Breakdown				
Pipe Diameter	Gravity Sewer Length		Force-Main Sewer Length	
2"		LF	720	LF
4"		LF	926	LF
6"		LF	850	LF
8"	179,881	LF		LF
10"	7,185	LF	4,130	LF
12"	1,841	LF	6,124	LF
15"	2,975	LF		LF
18"	1,301	LF		LF
Totals	193,183	LF	12,760	LF

The city does not have any undersized sewer main. Typically, new mains are constructed with smaller than 8-inch pipes due to the propensity for plugging issues and regulatory rules and regulations require sewer mains to be at least 8-inch in diameter.

**Sanitary Sewer System
Asset Management Plan
City of Northfield**

Table 1.3 indicates the quantity of each material making up the City's sanitary sewer system:

Table 1.3: Sanitary Sewer Material Breakdown				
Pipe Material	Gravity Sewer Length		Force-Main Sewer Length	
Vitrified Clay Pipe (VCP)	193,183	LF	12,760	LF
Slipped Lined (2021 & 2023)	7,887	LF		

As part of the sanitary sewer system study, a risk assessment was performed for each of the system assets. This risk assessment was completed using a combination of the asset's condition, asset's criticality, or consequence of failure. This number will vary between 1 and 5 with 1 being a minor defect grade and 5 being the most significant defect grade. The resulting condition rating allows the City to prioritize those items where both condition and consequence make it expedient to perform proactive maintenance of the asset. Condition assessments were performed where possible by manual and televising inspections and ratings were performed. For those assets which were not televised or not reachable from the surface, assessments of probable condition were made based on material, age, and history of the asset, or assigned the same ratings as adjacent assets that could be assessed. Table 1.4 summarizes the condition range of system assets.

Table 1.4: Condition Ratings – System Assets					
Asset Type	Rated Condition				
	1	2	3	4	5
Sanitary Sewer (LF)	148,969	22,485	8,811	9,670	3,248
Manholes	529	121	29	12	8
Laterals	2,099	431	101	98	8
Force Main (LF)	550 (2")	6,124 (12")	2,175 (10") & 850 (6")	926 (4")	1,955 (10")

As the table above shows, the majority of the City's sewer system assets are in average to above average condition. There are some assets listed above that have been rated at 4 and 5 which will be the focus of the city over the next 20 years to address and included in the City's 20-year Capital Improvements Plan which is discussed further in Section 6.

2. Introduction and Background

In 2019 the City of Northfield applied to New Jersey Department of Environmental Protection (NJDEP) and New Jersey Environmental Infrastructure Trust for the financing of a clean water project involving the upgrading and improvement of one (1) sanitary sewer pump station, a sanitary sewer system asset management plan and the purchase of equipment to maintain the sanitary sewer system under the New Jersey Environmental Infrastructure Trust Financing Program. The City was approved to finance \$450,000.00 to be utilized for the upgrade and improvement of Zion Road Pump Station, a sanitary sewer system asset management plan and the purchase of equipment to maintain the sanitary sewer system. Work associated with financing was broken out into the following categories and the results of the investigations are presented in this report.

- 1. Inventory:**
 - Perform Site Data Collection on each of the system components to create an inventory to determine / confirm size, material, age and condition throughout the City.
- 2. Condition Assessment:**
 - Perform condition assessments on each of the system's assets and assign condition ratings based on the evaluations completed.
- 3. Modeling:**
 - Identify any unique flow characteristics within the City and use anticipated flows and consequences of failure to prepare a criticality rating and consequence of failure for each of the system assets.
- 4. GIS:**
 - Use information gathered during the inventory and condition assessments to allow the creation, updating and maintaining of a geographic information system (GIS) database including mapping, storage and organization of system information.
- 5. Cleaning & Televising:**
 - Perform system cleaning as necessary and televising on sewer piping older than 40 years with known issues or visible pavement settlement in order to assign condition ratings to all sewer mains.
- 6. Level of Service:**
 - Define what the City's level of service is for the sewer system and determine the service life remaining for each of the City's assets.

7. Rate Structure Development Costs:

- Review the City's revenue structure to develop budgets and proposed capital and operational & maintenance costs that will be necessary to maintain the proposed level of service necessary to keep the City's Sewer fund self-sufficient.

This AMP is a long-range planning document used to provide an understanding of the City's existing system and to document the sewer system assets the City owns and operates as well as the service level it provides, risks it faces and financial investments it requires.

3. Sewer System Description

3.1 History

The City of Northfield is located in Atlantic County, New Jersey in the south-eastern portion of the State. The City of Northfield can be generally described as small populated with several commercial establishments and professional offices. According to the 2020 Census the population of Northfield was 8088. The City of Northfield is serviced by a sewage collection system, most of which was installed around 1970. The City has completed few system upgrades to the collection system, however most of the system piping dates back to the time of original construction. The sewage from the City is treated at the Atlantic County Sewer Authority (ACUA) sewer treatment plant.

The components that make up the sanitary sewer collection system are described in detail in the following sections. Sewer As-Built Maps of the City's sanitary sewer system are attached to this report.

3.2 Collection System

The City's existing collection system consists of mostly vitrified clay sewer main. In 2020 the City awarded a bid to En-Tech also in 2022 the City awarded a bid to Insituform Technologies, LLC to slip line a portion of the mains in place.

Table 3.2.1 below summarizes the type and approximate amount of sewer collection piping currently in the City's sanitary collection system. Appendix A shows the layout of the City's Sanitary Sewer Collection System and its major components.

Table 3.2.1: Existing Sanitary Sewer Collection Piping		
Size	Vitrified Clay Pipe (LF)	Slip-Lined (LF)
8"	179,881.50	4,065
10"	7,185	645
12"	1,841	724
15"	2,975	2,239
18"	935	214
Totals	192,817.50	7,887

3.2.1 Pump Stations

The City has seven pump stations which are very similar in design, with submersible pumps. All the pump stations, except Zion Road Pump Station, have been upgraded within the last 10 years and little to no work is required at this time. Zion Road pump station is scheduled to be upgraded with the work completed by 2023.

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Hemsley Pump Station: The Hemsley Pump Station is in Hemsley Place in the middle of the Atlantic City Country Club. This pump station contains two (2) “Barnes” submersible pumps 1 horsepower each, 1,750 RPM. The force main is 2” in diameter and has a flow capacity of 220 GPM.

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Rosedale Pump Station: The Rosedale Pump Station is located at the end of Steelman Avenue at the intersection of Bay Drive. In 2016 this pump station was upgraded to a duplex submersible pump station.

There are two (2) Flygt submersible pumps 7.5 horsepower each with 878 rpm motors. They can pump up to 4" solids and have a flow capacity of 650 GPM. This station uses a "Chatterbox" automatic dialing remote monitoring system, which allows operators to view pump status, runtimes, pump faults and other conditions from the City Public Works Department.



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Rosedale II Pump Station: The Rosedale II Pump Station is located at the intersection of Wabash Avenue and West Rosedale Avenue within the paved portion of Wabash Avenue. The Rosedale II Pump Station receives flows from approximately 290 homes, places of worship with approximately 500 seats and 70,000 square feet of commercial space.

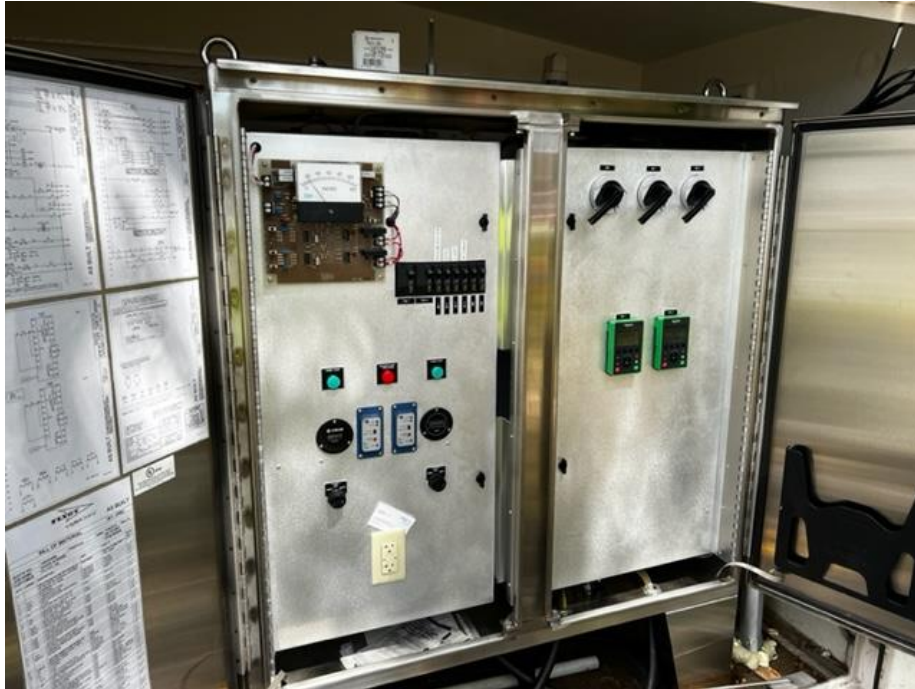
There are two (2) Flygt submersible pumps 3.75 horsepower each. This station uses a “Chatterbox” automatic dialing remote monitoring system which allows operators to view pump status, runtimes, pump faults and other conditions from the City Public Works Department.



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Davis Avenue Pump Station: The Davis Ave. Pump Station is located at the end of Second Street near the intersection of Davis Avenue. The Davis Ave Pump Station received flows from approximately 956 homes and 1,481,500 square feet of commercial space. In 2018, this pump station was upgraded. The project was self-financed by the Municipality.

This pump station has 2 submersible pumps 5 horsepower each with 878 rpm motors. They can pump up to 4" solids and have a flow capacity of 650 GPM.



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Burroughs Ave Pump Station: Burrough's Ave Pump Station is located at the intersection Burrough's Ave, Cedar Bridge Road, Zion Road and Cedar Springs Drive. The flow from this station connects to the Gravity sewer main in Zion Road and ends up at the Zion Road Pump Station, which pumps the flow to the County Transmission line located on Shore Road.

There are two (2) Flygt submersible pumps 3 horsepower each. This also uses a "Chatterbox" automatic dialing remote monitoring system which allows operators to view pump status, runtimes, pump faults and other conditions from the City Public Works Department.



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Oak Road Pump Station: The Oak Avenue Pump Station is located at the intersection of Oak Avenue and Cedar Bridge Road. The flows from this station run to the Zion Road Pump Station, then to the County Transmission line located on Shore Road.

There are two (2) Flygt submersible pumps 7.5 horsepower each with 878 rpm motors. They can pump up to 4" solids and have a design capacity of 650 GPM. This station uses a "Chatterbox" automatic dialing remote monitoring system which allows operators to view pump status, runtimes, pump faults and other conditions from the City Public Works Department.



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Birch Grove Park Pump Station: The Birch Grove Park Pump Station is located inside Birch Grove Park. This pump station services recreation fields and snack bar. The flows from this station run to the gravity sewer main in Burton Avenue which will end up at the Zion Road Pump Station, then pumped to the County Transmission line located on Shore Road.

This pump station was installed in 2013 utilizing two (2) “E/One Extreme” model number WH482 submersible pumps 1 horsepower each with 1,725 RPM motors. They have a design capacity that can pump 15 GPM. This also uses a “Chatterbox” automatic dialing remote monitoring system which allows operators to view pump status, runtimes, pump faults and other conditions from the City Public Works Department.



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Zion Road Pump Station: The Zion Road pump station is located at the intersections of Mill Road and Zion Road. The Zion Road pump station receives flows from approximately 1,044 homes, The Northfield Community School (960+ students and school staff), numerous medical offices, retail and personal service establishments. In addition, the flows from Burroughs Aves, Oak Ave and Birch Grove Park Pump Stations go through this pump station to the County Main transmission line located on Shore Road.

This pump station is being rehabilitated and will be self-financed by the Municipality. The rehabilitation is to be completed in 2024. The rehabilitated pump station will be designed utilizing two submersible pumps generating 1,055 GPM each, like the Davis Avenue and Rosedale pump stations.



3.2.2 Pump Station Condition Assessment Rating

The City's pump stations were evaluated to identify the major components and condition of each lift station. Evaluations consisted of a review of operations and maintenance information and records and visual inspection of the physical condition.

Table 3.2.2 – Condition Assessment Ratings			
Location	Rating	Issue	Time Frame
Hemsley Place	1	No Issues	
Rosedale	1	No Issues	
Rosedale II	2	Rail needs fixing	2 Years
Davis Avenue	1	No Issues	
Burroughs Ave	2	No Issues	
Oak Avenue	3	Need repairs	5 Years
Birch Grove Park	1	No Issues	
Zion Road	3	In Process of being upgraded	

- 1 New or Excellent Condition – Only Normal Maintenance required.
- 2 Minor Deterioration – minor maintenance required (5%)
- 3 Moderate deterioration – significant maintenance required (10-20%)
- 4 Significant deterioration – significant renewal / upgrade required (20-40%)
- 5 Asset Unserviceable – Over 50% of the asset requires replacement.

3.3 Sewage Treatment

Atlantic County Utilities Authority Treatment Plant: The Atlantic County Utilities Authority Treatment Plant (ACUA) is located in Atlantic City and treats all the wastewater that is created by the City of Northfield. The county transmission line in Northfield is located along Shore Road and flows easterly. The ACUA treatment plant was constructed in 1978.

4. Service Areas

4.1 Existing Service Area

The Existing service area of the City's Sanitary Sewer System encompasses the City limits of the entire City of Northfield which is approximately 3.62 square miles.

4.2 Population Growth

The City of Northfield's Sanitary Sewer System Service Area can be characterized as developed older residential and commercial areas.

4.2.1 Population Trends and Projections	
Year	Est. Population
1990	7,305
2000	7,725
2010	8,624
2020	8,434

4.3 Future Service Areas

The City of Northfield's Sanitary Sewer System currently serves nearly all the City's Corporate Limits and will accommodate any future expansion with minor system upgrades.

5. Sanitary Sewer System Maintenance

5.1 Staff

The Sanitary Sewer System is serviced by the City's Public Works Department, which employs six full time employees, a supervisor, and a superintendent of Public Works.

General and Emergency repairs and construction are contracted every 2 years to the lowest qualified bidder. Mathis Construction was awarded the contract from January 1, 2024 until December 31, 2025.

5.2 Equipment

The City's Department of Public Works is responsible for the operation and maintenance of the Sanitary Sewer System. To effectively maintain the system, the City has various equipment that is used in system maintenance. In Aug of 2020 the City purchased a new camera for pipe inspection and minor repairs. Also, in 2022 the City purchased a Jet Vacuum truck to help clean the sanitary sewer system.

List equipment they have or plan to buy.

Since the Department of Public Works also maintains the City's streets, drainage system and other areas of the City's. For day-to-day operations, few pieces of same equipment are used for the maintenance of other City properties.

6. Inventory and Assessment of Fixed Assets

6.1 Summary of Inventory:

A system wide inventory and condition assessment of most components of the City's Sanitary Sewer System was conducted to gather information on the assets of the system. These assets are broken down into four categories: manholes, pipes, laterals and pump stations.

Infra Structure Assessment, LLC was hired to investigate the manholes and pumps stations and prepare a cost analysis for future maintenance. Also the existing system was tabulated based on pipe size and depth, this work was done based on field inspections and utilized the existing sewer as-built plans.

North American Pipe, LLC and General Sewer Services, Inc. were contracted to video pipe certain sections of the sewer main (approximately 10,132LF.) to check for cracks or breaks in the system. Video of each of the televised sections of pipe were reviewed by SNSCE. This process took approximately 2 weeks in the field for this work to be completed, the crew worked 2 nights along Tilton and Mill Roads.

6.2 Manhole Inventory:

Infrastructure Assessment, LLC identified, and field inspected 170 manholes. When a manhole inspection is performed, it was ranked based on the inspector's overall evaluation of the manhole, all inspected manholes were in fair conditions, but the deep manholes 12' plus, had some sort of infiltration where the pipe enters the manhole, slip lining in some areas would minimize the ground water infiltration. Also, pavement settlements were observed at around few manholes, which indicates ground water infiltration.

6.3 Condition Assessment:

The existing sewer main are in a fair to good condition based on the system age 50 years plus, we found the following major issues that needs addressed:

1. One sewer lateral along Oak Avenue by 2127 Oak Ave. settled and cracked the main.
2. The Manhole at Oak Avenue and Marritta Ann Drive has settled approximately 6".
3. The Manhole along Cedar Bridge Road by 2542 Cedar Bridge has settled approximately 6-8 inches.
4. The Manhole along Cedar Bridge Road by 2415 Cedar Bridge has settled and the Sewer main from the New Road Manhole is sheared.

5. The main under the marsh area between East Revere Avenue and Bay Drive, could not be slipped lined due to the smooth surface of the pipe, during the video inspection of this pipe it was observed that this pipe was moving with the tied.
6. Pavement settlement was observed around the following manholes: E-5, O-E5.1.3, O-E1, O-E2, O-E5, O-N5, O-S1.1.2, O-S1.1.3, O-S1.1.4, O-S1.1.7.1, O-S1.8.1, O-S1.1.01, O-S1.2, O-N3.2.3, O-N3.4, O-N3.2, O-O, O-W1, O-W3, O-W5 AND O-N5.
7. Davis Avenue pump station and Rosedale pump station were upgraded and in good working conditions, Zion Road pump station is in the process of being upgraded.
8. Rosedale II pump station will need to upgrade the rail and a few internal parts, the remaining pump stations will require regular maintenance. All this work could be funded by the yearly sanitary sewer maintenance budget.
9. The limited video we performed showed minor crack throughout the area we have investigated, which is normal due to the age of the system.

The video piping uncovered 2 major problems, the sewer pipe at the intersection of Zion and Mill Roads was cracked and major water infiltration was occurring at this location, and another major crack was found at the intersection of Burton Avenue and Tilton Road. At Mill Road and Zion Road, the section of pipe extending to Philmar Drive was slipped lined and the cracked pipe at Tilton Road and Burton Avenue had to be excavated and the section of the terracotta pipe was replaced with PVC pipe.

Other crakes and points of infiltration were observed were slip lined (Phase I), starting at Tilton Road and Jackson Avenue and terminating at the Davis Avenue pump station, and a portion of the existing sewer main near the marsh area between E. Vernon and Revere avenues. Under Phase II of the slip lining project, the sewer line starting Midway along Banning Avenue and terminating at the intersection of Davis Avenue and Fuae Avenue was slip lined.

6.3 Recommendations:

The following are the minimal requirements for maintaining the existing system:

1. Annual slip lining program, the pervious lining project performed showed a major reduction in the sewer flow to the ACUA, which resulted in reduction of the annual sanitary sewer treatment charges, therefore the Municipality should budget for an annual slip lining project, which will reserve the existing system and reduce the ground water infiltration, which in turns saves of the cost of the sewer treatment by minimizing the ground water infiltration. The slip lining budget should be around \$200,000 annually.
2. Annual deep manhole inspection to ensure that the minimal ground water infiltration at the pipe connection is in not getting worse, the budget for this should be around \$25,000 annually.

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3. A solution to eliminate the existing sewer line under the marsh area between Revere Avenue and Bay Drive would be by constructing a new pump station at the end of Revere Avenue and abandoning the existing gravity main. The budget for the new pump station and the force main is around \$300,000.
4. The existing sanitary sewer plans must be updated to reflect all existing sanitary sewer system and lateral location and Rosedale II pump station and force main. The exiting Sanitary sewer plans are missing all the new developments which were built in the past 35-40 years, and the Rosedale II pump station and force main location, the budget for this work should be around \$35,000.
5. The municipality purchased a pipe crawler camera, and the Sewer Department should implement a program to systematically video the existing sanitary sewer main, this work could be implemented as a sewer department policy.
6. A few sanitary sewer cleanouts are missing, and location of few laterals are unknown, the Sewer Department should utilize the camera to locate these laterals and replace the missing cleanouts. This could be a liability for the municipality in utility mark out situation.
7. Forms should be created to keep track of all inspections mentioned above, and notes should be kept on file at the Municipal Public Works Department, for any modifications or any problems observed.