III.H: Utilities

H. Utilities

1. Existing Conditions

a. Water Supply

The City of Yonkers obtains its water from the New York City Reservoir System, an unfiltered surface water supply that originates from the Catskill and Delaware watershed areas, located 100 miles northwest of Yonkers in upstate New York. Approximately 10.6 billion gallons of water were used by the City of Yonkers from the New York City water supply system during 2005. This yielded an average daily citywide consumption of 28.9 million gallons per day with an average daily per capita usage of approximately 147.3 gallons. A series of water storage tanks located throughout the City maintain the pressure within the systems and serves approximately 196,086 residents of the City of Yonkers, per the 2000 Census.

Under normal operation conditions, water is obtained from one connection to the Westchester County Water District #1 and three separate connections to the New York City Reservoir System, before discharging into the New York City Hillview Reservoir located in southeast Yonkers. From these four connections, the City is served via high and low service pressure mains within their water distribution system.¹

Under emergency conditions, the City is permitted to draw water from the Grassy Sprain Reservoir without filtration or treatment. Although the reservoir is still classified as a water supply reservoir, it is no longer used as a source of normal water supply.

Water that enters the City of Yonkers water distribution system is treated with the addition of chlorine so as to comply with New York State and Federal disinfection requirements. Fluoride is added to the New York City water supply before it enters the Yonkers water system to aid in the prevention of tooth decay. Further, orthophosphate is added to water entering the City of Yonkers water distribution system to meet New York State and Federal Corrosion Control Regulations.²

b. City of Yonkers Water Distribution

The City maintains high and low service (elevation) pressure zones to accommodate the varying topography within the City of Yonkers. Water from the City of Yonkers and Westchester County intake systems is pumped or piped to the different systems with hydraulic grade lines³ between elevations 490 and 440 for the high service pressure zone and elevations 260 and 290 for the low service pressure zone. The Project sites are located in the low service pressure zone, with a hydraulic grade line of approximately 290 feet. Although the sites are in the low service pressure zone, the area is supported by the high service pressure zone through a pressure regulating

¹ See letter from City Department of Public Work to Divney Tung Schwalbe dated 01/11/08 in DEIS Appendix 3H.

² Water supply information from City of Yonkers 2005 Annual Water Report

³ Hydraulic grade line (HGL) is the sum of the pressures and gravitational head, and contributes to the amount of available water pressure in a distribution system.

valve⁴. This pressure regulating valve is located at Odell Avenue and maintains pressure in the Warburton Avenue corridor (north and south of Odell Avenue). During times of heavy demand in the low service system it is not uncommon to have the valve remain open which causes the water level in the elevated water tank at the Southern Westchester Executive Park to drop⁵.

As shown on Table III.H-1 below, water mains exist in all streets in the vicinity of the Project. The Project sites are in the vicinity of two existing large water mains in Riverdale Avenue and Nepperhan Avenue. A 24-inch water main is available at the corner of Elm Street and Nepperhan Avenue (see Exhibit III.H-1).

Location	Diameter (inches)			Location	Diameter (inches)		
River Park Center/Government Center	Main 1	Main 2		Cacace Center	Main 1	Main 2	
Nepperhan Avenue	12	-		South Broadway	12	-	
South Broadway	12	-		Terrace Place	8	-	
School Street	12	6		Guion Street	12	-	
Waverly Street	6	-					
Elm Street	12	-					
John Street	6	4	Location Diameter		r (inches)		
Engine Place	4	-		Larkin Plaza	Main 1	Main 2	
James Street	6	-		Main Street	12	-	
New Main Street	12	-		Riverdale Avenue	20	12	
Palisade Avenue	12	-		Dock Street	12	-	
Ann Street	6	-		Palisade Point			
				Site	12	20	

Table No. III.H-1 Existing Water Main Sizes

Hydrant testing has recently been conducted at the Project sites. Based on preliminary review of the hydrant testing results and discussions between the Applicant's engineer and City representatives, the water mains currently in the vicinity of the sites will not provide adequate pressure for the proposed projects. Some water mains located near the River Park Center site are in excess of 100 years old and will require replacement due to their age.

The initial and limited water modeling determined limitations in the hydraulic capacity of the existing water mains located in New Main Street, Palisade Avenue, Elm Street, Main Street, Nepperhan Avenue and along the waterfront. The City has indicated that improvements to those water mains will be required to accommodate the proposed Project and to partially improve water flow capacity to the Project sites,

⁴ March 2007 correspondence from John Liszewski in reference to the PDEIS submission.

⁵ Based on correspondence from Albina Glaz of the City of Yonkers Water Department regarding completeness of the PDEIS submission.

but that the proposed improvements preliminarily identified and listed in item 3 under "Mitigation Measures" may not be adequate to satisfy the significant cumulative increase of water demand for the proposed Project and other planned and future developments in the downtown area. The City DPW has therefore required that a comprehensive hydraulic analysis be performed to identify the improvements necessary to serve the Project and any additional and/or different improvements necessary to serve the cumulative demand from the Project and all other projected growth in the downtown. The comprehensive hydraulic analysis will be subject to the approval of the City DPW and will be part of the FEIS. Final determinations on this issue will be made based on the results of the comprehensive hydraulic analysis requested by the City DPW for the FEIS per its letter dated 01/11/08.

As part of the FEIS, the Applicant will evaluate and perform a comprehensive hydraulic analysis of the existing water distribution system affected by the proposed development and its ability to handle the significant increase in water demand and fire flow for the proposed developments, both year round and summer months during peak hour water demand. During construction of the Project, new water mains will be installed within the roadways in the vicinity of the Project sites as described herein under "Impacts to Existing Utilities" and "Mitigation Measures."

In addition to the age of the mains, the following issues were also found. An unknown obstruction of the 20-inch main at the Palisades Point site has been found just south of the Scrimshaw House where it meets the 12-inch main that currently serves the Palisades Point area⁶.

Existing fire flows have been provided by the City's hydraulic consultant, George Lackowitz, and are based on hydrant flow tests performed at strategic hydrants in the vicinity of the Project sites that would be representative of hydrant flows for the general area surrounding the test hydrants. The fire flows were calculated at maximum day water demand conditions at the sites have been provided as follows. In the area of the River Park Center including the Cacace Center and Government Center, a fire flow of approximately 3500 gpm exists with residual pressures between 40 and 55 psi⁷. Existing fire flow conditions at the Palisades Point site are approximately 2,000 gpm at a residual pressure of 20 psi. Information regarding construction/installation of new water mains is discussed in item 2a of this section.

c. Storm Drains and Sanitary Sewers

The Project sites are currently serviced by both sanitary and combined stormwater and sanitary sewer systems owned and operated by the City of Yonkers. Exhibit III.H-2 shows the existing sewer and stormwater drainage lines in the vicinity of the Project sites. The sanitary flows from these sites are tributary to Westchester County's Yonkers Joint Wastewater Treatment Plant located along the Hudson River in southwest Yonkers. Except for Palisade Point, sewage from the various sites will discharge into a 36"–48" City trunk combined sanitary and storm sewer in either New

⁶ Hydraulic Analysis Water System Conditions Proposed Palisades Point Site 3/19/2007 by George W. Lackowitz, P.E.

⁷ Hydraulic Analysis Water System Conditions Proposed River Park Center/Cacase Center 4/4/2007 by George W. Lackowitz, P.E.

Main Street or Palisade Avenue. From here the City trunk sewers direct the flow through Getty Square and down Main Street to the Westchester County owned Main Street Pump Station located on the west side of the railroad. Sewage is then pumped into a 54-inch Westchester County force main that flows south parallel with the railroad to the treatment plant. Palisade Point would have access to a 12-inch gravity pipe that is currently serving the Scrimshaw House and is connected to the Main Street Pump Station. The capacities and results of the sanitary sewer flow monitoring are described below.

The City of Yonkers Department of Public Works, Sewer Bureau, is responsible for the inspection, maintenance and repair of the existing City-owned storm drains and sanitary and combined sewer system within the adjacent streets. Sewers within the Project area are described below (Also see Exhibit III.H-2).

Many sewer mains in the vicinity of the Project are in excess of 100 years old and are beginning to show signs of their age. According to a 1993 survey of the City-wide sewage collection system⁸, the sewer lines in the area of the Project are generally composed of vitrified clay pipe or brick lined sewer tunnels. The study identifies problems with sewer lines throughout the city which include missing bricks, cracked or broken pipes, offset joints, deteriorating mortar, and mineral deposits. Common problems with sewer manholes in the City are poor frames, collars, and covers, and deteriorating mortar on the walls causing inflow into the sewer system. Problems identified in the 1993 County survey for the Project area include several sewage manholes in the Getty Square parking lot that are scheduled to be abandoned and four manholes in Palisade Avenue that will be relined/repaired during utility work on Palisade Avenue.

In addition to the City sewer system, Westchester County maintains a 78-inch trunk sewer that flows west from St. Casimir Avenue, along Palisade Avenue, to Getty Square before flowing north and west to the Westchester County owned North Yonkers Sewage Pump Station. The North Yonkers Pump Station is located approximately one-half of a mile north of Palisade Point along the Hudson River. From there, the sewage is pumped into the 54-inch force main described above.

In times of heavy rainfall, if the combined storm and sanitary sewers do not have the capacity to accommodate the flow, the City trunk sewers in Getty Square overflow into the 78-inch Westchester County-owned trunk sewer through a below grade regulator located in Getty Square. Overflows can also occur near the Main Street Pump Station and the North Yonkers Pump Station where at times of heavy rainfall, diluted sewage can overflow into the Hudson River.

In an effort to better identify the existing flows in the City trunk sewers, flow meters were installed during the Fall of 2006. The meters were installed in three locations that were chosen to best represent flows present in the sewer system. The trunk

⁸ Westchester Sewer System Evaluation Survey performed by Malcolm Pirnie and summarized by Dolph Rotfeld Engineers, published December 1993.

sewers in New Main Street and Palisade Avenue and the 12-inch sewer that will serve the Palisade Point site were monitored during this time. Although a number of rainfall events occurred during this monitoring period, no significant⁹ rainfall events occurred that caused overflow into the sewer regulators¹⁰.

The results of the sanitary sewer monitoring show that the New Main Street and Palisade Avenue sewer mains should have the capacity to handle the amount of sewage generated by the River Park Center and Cacace Center sites under normal conditions. The New Main Street Trunk Sewer has a maximum estimated capacity of 39,675 gpm. Under normal day to day conditions the average flow is between 1200 gpm and 1600 gpm, which is less than 5% of its capacity. The Palisade Avenue Trunk Sewer has a maximum estimated capacity of 51,500 gpm. Under normal conditions the average flow is between 3000 gpm and 4000 gpm, which is less than 8% of its capacity.

The results also indicate that during times of heavy rainfall the 12-inch sewer proposed to serve the Palisades Point site showed heavy flow and may not have capacity for the new buildings on that site without remediation or pipe replacement. In order to remediate this existing condition and accommodate the proposed SFC project, the existing 12 inch sewer main proposed to serve the Palisades Point site will be replaced with a new, larger capacity sewer main designed in coordination with the City Engineer's office.

The Westchester County Yonkers Joint Wastewater Treatment Plant ("WWTP") was originally designed to accommodate a maximum hydraulic flow rate of 330 million gallons per day (MGD) and satisfactorily treat a flow rate of 92MGD. Upgrades to the plant increased its ability to treat sanitary flow and the plant is currently permitted by the New York State Department of Environmental Conservation to treat up to 120 MGD. The WWTP is currently serving a population of approximately 500,000, and the 2005 the Westchester County Department of Environmental Facilities annual report states that the average flow to the plant was 108 MGD¹¹.

During 2005 the two County-owned pump stations serving the Project sites had the following flows. The Main Street Pump Station actual flow was 0.92 MGD and has a capacity of 8.10 MGD. The North Yonkers Pump Station actual flow was 23.3 MGD and has a capacity of 70 MGD¹².

Although no development is planned in the vicinity of Larkin Plaza, the proposed daylighting of the Saw Mill River will cause displacement of utilities in the streets

⁹ Rainfall data included with the "Sanitary Flow Monitoring Yonkers, NY Fall 2006" report by New England Pipe Cleaning Company show no unusually high rainfall events. The rainfall data collected would tend to indicate that the rainfall events during the monitoring period appear to be representative of a typical rainy season.

¹⁰ Based on data provided in the Sanitary Flow Monitoring, Yonkers, NY Fall 2006" report by New England Pipe Cleaning Company which is available for review upon request at the City of Yonkers Engineering Department.

¹¹ 2005 Annual Report, Water and Wastewater Operations.

¹² 2005 Annual Report, Water and Wastewater Operations.

adjacent to the site. The following is a description of the stormwater and sanitary systems in this area.

- The flows from north of Larkin Plaza, along Dock Street, discharge to a series of 12-inch and 18-inch clay and 24-inch brick combined sewers. The area west of Bashford Drive and along Atherton Street discharge to an 18-inch cast iron Westchester County sewer. This sewer flows north along River Street to the Westchester County North Yonkers Pump Station located along the Hudson River. The sewage is then pumped to a 54-inch force main to the WWTP.
- The area of Dock Street between Bashford Drive and Warburton Avenue discharges to a 24-inch brick sewer. Within Bashford Drive a 34-inch brick sewer flows north and ultimately to the North Yonkers Pump Station.
- The area south of Larkin Plaza, along Nepperhan Street, drains to a series of 12inch and 18-inch clay sewers. These City sewers connect to a 24-inch cast iron Westchester County sewer at the intersection of Market Place and Nepperhan Street. The County sewer continues west along Nepperhan Street to Buena Vista Avenue, where it continues south to Main Street and ultimately to the Main Street Pump Station.
- Record plans and the visual inspection¹³ of the Saw Mill River flume under Larkin Plaza indicate several existing sewer overflow pipes are connected to the arch culvert within Larkin Plaza. These connections include the following:
- Dock Street Overflow pipes of 12-inch and 18-inch pipes are located near Atherton Street and another pipe (size unknown and inaccessible due to existing conditions in the area) is connected near Woodworth Ave. The location of all existing drains will be determined as part of the project design phase.
- Nepperhan Street- A 24-inch clay pipe in Market Street is connected to the 78inch City combined sewer in Main Street. A 12-inch clay pipe is connected to the Nepperhan Street sewer at Market Street. Both of these overflow pipes extend across Larkin Plaza to the arch culvert.

The Larkin Plaza area is relatively flat with a limited number of inlets in the streets. This creates localized street flooding during heavy rainfalls. The potential improvements to Larkin Plaza provide the opportunity to separate the combined sewers in the streets surrounding the site. Also, additional stormwater inlets can be installed in the adjacent streets to improve drainage and ponding conditions.

d. Electric and Gas Systems

Consolidated Edison Company, Inc. ("Con Edison") provides electricity to the City of Yonkers, and would provide electric service to the Project.

Con Edison's distribution electrical system is generally installed within the public rights-of-way in the City of Yonkers, in both underground and overhead

¹³ Saw Mill River Flume Inspection - Report by McLaren Engineering Group.

configurations. Con Edison's distribution electrical system is present in all streets surrounding Cacace Center, Government Center, River Park Center and Larkin Plaza. A high voltage distribution feeder crosses Larkin Plaza and the Saw Mill River flume near Bashford Drive. The Palisade Point site is undeveloped, and it is anticipated that electrical service will be extended from the Con Edison electrical system installed to serve adjacent parcels which have recently been redeveloped (i.e., Scrimshaw House). All electrical services will be finalized in coordination with Con Edison's engineering analysis of the Project's electrical loads. It is anticipated that existing distribution systems will require improvements to serve the electrical needs of the Project.

Con Edison also provides natural gas service to the City of Yonkers and would provide natural gas service to the Project.

Con Edison's natural gas distribution system is generally installed within the public rights-of-way in the City of Yonkers. Gas distribution mains are located in the streets adjacent to Cacace Center, Government Center, River Park Center and Larkin Plaza. The existing distribution mains range from 4 inches to 12 inches diameter and are configured as high pressure, medium pressure and low pressure distribution systems. The availability of high pressure, medium pressure and low pressure distribution is a function of Con Edison's natural gas distribution network, and all classes of pressure may not be available at all locations. A final determination of pressure class availability will be made by Con Edison as the Project design and loads are finalized. A 6-inch gas main currently exists in the vicinity of the Palisade Point site, which is serving the Scrimshaw House. Con Edison will determine the feasibility of extending the existing gas main to serve Palisade Point subject to their final engineering analysis of the Palisade Point natural gas loads. All natural gas services will be finalized in coordination with Con Edison's engineering analysis of the Project's natural gas loads. It is anticipated that the natural gas distribution system will require improvements to serve the natural gas needs of the Project.

See Exhibit III.H-3 for the location of existing electric and gas utilities near the respective sites. The Applicant has obtained information from the City of Yonkers regarding existing electric and natural gas usage for facilities located within the Project Area as presented in Table No. III.H-1A. The table identifies existing annual and average daily energy usage levels for five facilities in the Project Area: 1) Fire House (Engine #1 at 7 New School Street; 2) Cacace Justice Center at 104 South Broadway; 3) Health Center at 87 Nepperhan Avenue; 4) Government Garage at New Main Street; and 5) Parking Lot at 765 Palisade Avenue.

	Elect	ricity	Gas		
Facility Name	(KV	VH)	(The	rms)	
	Annual	Daily	Annual	Daily	
		Average ⁽¹⁾		Average ⁽¹⁾	
River Park Center					
Fire House (Engine No. 1: 7 New School St.)	202,320	554	26,938	74	
765 Palisade Avenue Lot	1,044	3	NA	NA	
Government Center					
87 Nepperhan Avenue (Health Center)	760,960	2,085	31,830	87	
Government Center Garage (New Main St.)	724,640	1,985	NA	NA	
Cacace Center					
Cacace Justice Center (104 So. Brdwy)	2,163,600	5,928	71,548	196	
Palisades Point ⁽²⁾					
Parking Lot (Scrimshaw)	6,023	17	NA	NA	
Total	3 858 587	10 571	130 316	357	
TOTAL	3,030,307	10,3/1	130,310	33/	

 Table No. III.H-1A

 Summary of Existing Electric and Gas Consumption for SFC Project Area (2006)

⁽¹⁾ Daily averages have been calculated based on the annual consumption divided by 365 days for purposes of this analysis.

⁽²⁾ Electric load for parking lot estimated based on five double box lights for a total of 10 fixtures at 150 watts each with an average usage of 11 hours daily.

e. Telephone, Communications and Cable Television Systems:

Verizon currently provides telephone and data services in the City of Yonkers, and has recently been approved to provide their Fiber Optic (FIOS) service in the City of Yonkers, which will also allow Verizon to provide cable television services in the City of Yonkers in addition to their current offerings of telephone and data services.

Cablevision/Optimum Cable currently provides telephone, data, and cable television services in the City of Yonkers.

It is anticipated that both Verizon and Cablevision will serve the Project improvements.

The respective Verizon distribution system and Cablevision distribution system are generally located within the public rights-of-way in the City of Yonkers. The respective systems are distributed in underground and overhead configurations. It is anticipated that both Verizon and Cablevision will improve their respective distribution systems to provide the telephone services, data services, and cable television services required for the Project.

In the vicinity of the downtown Project sites, existing telephone and communication systems are located within the Elm Street, Palisade Avenue, School Street, Nepperhan Avenue and the New Main Street public rights-of way. In addition to telephone lines owned by Verizon, the City of Yonkers also maintains communication lines between City Hall, the Health Center Building, and the Government Center municipal garage for operational and emergency communications. All offices in City Hall and the Health Center Building are currently able to communicate in a "campus environment" because they are directly connected by fiber optics. Two main conduits containing fiber optic cable run underground between the buildings. These conduits take different paths to protect against potential damage or service disruption. With respect to traffic management, the City's Traffic Engineering Department is able to manage traffic flows through the intelligent signal system they have installed in various parts of the City.

Existing Verizon and Cablevision distribution systems may be impacted by the proposed Project and will require relocation when conflicts cannot be avoided. The Applicant and the City of Yonkers will work with the respective utility companies impacted by the proposed Project to coordinate the relocation of facilities if so required.

See Exhibit III.H-3 for the location of existing utilities near the respective sites.

- 2. Impacts to Existing Utilities (Including Potential Demand from other Proposed Projects)
 - a. Water Distribution System

Based on conservative unit flow values from the New York State Department of Environmental Conservation's Design Standards for Wastewater Treatment Works, and with the use of water conservation measures providing a 20% flow reduction, the estimated average daily water demand for the Project sites are approximately 432,650 gpd for River Park Center, Government Center and Cacace Center, and 111,010 gpd for Palisade Point for a total of 543,665 gpd as presented in Table III.H-2, *Summary of Average Daily Sanitary Flow and Water Demand*. Based on the Project site's existing water demand of approximately 45,640 gpd, which will be discontinued, the incremental increase in water consumption on the Project sites will be approximately 498,025 gallons per day¹⁴ over existing flows. (i.e., 543,665 gpd – 45,640 gpd = 498,025 gpd). The proposed Project will generate an estimated peak demand flow rate of 1,038 gallons per minute. It is noted that without the use water conservation measures, the total average water demand for the Project sites would be

¹⁴ The developed Project's total water demand, with consideration of water conservation measures providing a 20% flow reduction, is estimated to be approximately 543,665 gallons per day (gpd) (i.e., 679,580 gpd x 20% = 135,916 gpd. Thus, 679,580 gpd – 135,916 gpd = 543,665 gpd.). Based on the Project site's existing water demand of approximately 45,640 gpd which will be discontinued, the incremental increase in water consumption from the Project sites are estimated to be approximately 498,025 gpd (543,665 gpd - 45,640 = 498,025 gpd). For purposes of this analysis, the water demand flow rate has been increased by 10% from the NYSDEC Design Standards for Wastewater Treatment Works.

approximately 679,580 gpd, and an estimated peak demand flow rate of 1,415 gallons per minute would be required to provide potable water supply for the Project sites.

Based on the recommendations for upgrading the City's water distribution system provided by George Lackowitz, it will be capable of providing, fire flows of approximately 3500 gpm at 60 psi to the hydrants and building sprinkler systems for both the River Park Center and Cacace Center and over 5000 gpm at Palisades Point. Water pressures inside the buildings will be required to meet NYS building codes and if necessary booster pumps will be installed to increase pressure within buildings.

As discussed in Section II, "Description of Proposed Action", of this DEIS under "Environmental Sustainability Objectives", water conservation will be promoted in the selection of water-efficient plumbing fixtures for the proposed project. All plumbing fixtures will be low flow to conserve water and hot water energy, as required by the New York State Building Code. Energy efficiency will be pursued by potentially using higher efficiency heat pump systems and advanced cooling tower controls for residences (if a water loop heat pump is selected) as well as other measures that are appropriate to the specific buildings.

During the growing season, the ballfield turf and other landscaped areas will require water for irrigation. It is anticipated that approximately 16,050 gpd may be required in addition to the average daily water demand noted above. For purposes of this analysis, a conservatively high estimate of 100,000 square feet has been used to account for other green areas within the project, resulting in an irrigation estimate of approximately 8,900 gpd¹⁵. When combined, the total estimated seasonal irrigation demand for the Project sites is 24,955 gpd as shown in Table III.H-2. With the additional water usage caused by irrigation the total project water demand during the summer months is increased to 568,619 gpd (i.e., 543,664 gpd + 24,995 gpd = 568,619 gpd.) However, the actual extent of the other green areas to be irrigated will be reviewed during the site plan approval process and may be reduced in area, thus potentially reducing the seasonal irrigation demand.

¹⁵ The irrigation demand for the other green areas within the proposed project is calculated using an estimate of 1 inch of irrigation per week and an area of 100,000 square feet. For purposes of this analysis, the total seasonal irrigation demand of these green areas is estimated to be approximately 8,900 gpd. The combined seasonal irrigation demand for the ballfield (16,050 gpd) and the other green areas (8,900 gpd) is approximately 24,950 gpd.

	Project Sites	Floor Area (GSF)	Sanitary Demand (GPD)	Water Demand (GPD)							
	River Park Center										
Divon Don's Conton	Residential	1,150,200	218,520	240,372							
River Park Center:	Retail, Office, Cinema, Restaurant, Ballpark	747,000	116,800	128,480							
	T										
Palisade Avenue		225,000	18.000	19.800							
Office Building:	Office		10,000	19,000							
Coulommant Contom	Datail Destaurant	20,000	0.600	10 560							
Government Center.	Ketan, Kestaurant	50,000	9,000	10,300							
Cacace Center:	Firehouse Hotel Office	265,000	30 400	33 440							
Peak Flow Rate (ngm)	Thenouse, Hotel, onlice	200,000	819	901							
				,							
River Park Center To	tal	2,417,200	393,320	432,652							
Palisade Point:	Residential, Retail, Office	1,143,200	100,920	111,012							
Peak Flow Rate (gpm)			210	231							
Project Totals (River	Park Center & Palisades Point)	3,560,400	494,240	543,664							
Peak Flow Rate (gpm)			1,030	1,133							
Existing Parcels:	Various existing parcels to be razed		41,490	45,639							
Peak Flow Rate (gpm)			86	95							
Not Increase (or 1)			452 750	400 025							
Net Increase (gpd)	<u></u>		452,750	498,025							
Peak Flow Rate (gpm))		943	1,038							
Seasonal Irrigation De	mand ⁽⁵⁾		0	24,955							

 Table III. H-2

 Summary of Average Daily Sanitary Flow and Water Demand

¹ Flow Rates based on NYSDEC Design Standards for Wastewater Treatment Works (1988) pp. 10-13

² Water Demand estimated at 110% of sanitary flows.

³ Peak Rate calculated at three (3) times the average daily rate due to mixed use of development.

⁴ Proposed Sanitary Flow figures calculated using water saving fixtures adjustment factor.

⁵ More detailed flow figures are presented in the technical appendix titled "Site Utility Report" in Appendix 3I of this document

⁶ The seasonal irrigation demand for the ballfield is calculated using historic evapotranspiration data for the New York area and a preliminary estimate of the play field area at approximately 121,000 square feet. Based on an average demand for the peak season of 66.88 gallons per minute and a watering cycle of 4 hours per day, the seasonal irrigation demand for the ballfield is estimated at approximately 16,050 gallons per day. An additional 100,000 square feet was used to account for other green areas within the proposed project based on 1 inch of irrigation per week. The seasonal irrigation demand for these other green areas is estimated at approximately 8,900 gallons per day.

Potential Growth from Other Projects

To assess the adequacy of the existing water supply system to accommodate other potential growth in the area, the water demand for other planned development projects slated for completion by the proposed Project's anticipated build year has also been considered. As presented in Table III.H-3 and Exhibit III.H-4 other developments are proposed in the area, which would have a combined average daily water demand of approximately 515,745 gallons per day and a peak flow rate of approximately 1,075 gallons per minute. On a cumulative basis, the average daily

water demand of the proposed Project (543,665 gpd) and the other proposed development projects (515,745 gpd) would total approximately 1,059,410 gallons per day.

The increase in water demand from the Project sites as well as other planned development projects in the area will require the City of Yonkers to supply additional amounts of water to both the low and high pressure service zones. According to the City Water Bureau¹⁶, there is sufficient overall water supply available to serve the Project as well as the other planned development projects. However, the City Water Bureau has also indicated that they will need to perform a city wide hydraulic water study of the existing distribution system to determine the system's ability to accommodate future incremental growth and its ability to adequately serve the downtown area. As part of the FEIS, the City's water consultant can model the water distribution system's capacity under existing conditions as well as potential future build out conditions with the SFC Project and other planned developments slated for completion by the proposed project's anticipated build year; in order to assess the ability of the system to adequately supply water to the City in the future and to identify if there are any improvements needed to meet the future growth of the planned City projects.

According to the City's consultant, there are limitations in the hydraulic capacity of the existing water mains located in New Main Street, Palisade Avenue, Elm Street, Main Street, Nepperhan Avenue and along the waterfront. The City has indicated that improvements to these water mains will be required to provide adequate flow to the Project sites. These improvements are outlined in item 3 of this section of the DEIS under "Mitigation Measures," and include, but are not limited to replacement of the existing mains in New Main Street, Palisade Avenue, Elm Street and Nepperhan Avenue, as well as installing a new main in Prospect Avenue from the Riverdale Avenue transmission main to the existing 12-inch main in Nepperhan Avenue. In addition, for the Palisades Point site, the City's consultant has recommended that a dual source of supply for the area west of the railroad tracks be created by either a loop around the site or connection to water mains on both ends of the site. Further, the City's consultant recommends that one of the supply sources be provided by a new main connected to the transmission main in Riverdale Avenue. As discussed in item 3 below under "Mitigation Measures", the use of tax increment financing is proposed to pay for these necessary utility improvements. It is anticipated that primary responsibility for construction management of the recommended utility improvements will be undertaken by the Applicant in consultation with the City.

The 12-inch water main in the eastern end of Larkin Plaza will need to be relocated to facilitate the daylighting at Larkin Plaza. The relocated water main will be constructed prior to taking the existing main out of service or a temporary main will be installed. The existing users will not be impacted. With the main relocated, there will be no change or deterioration of existing water service.

¹⁶ According to John Speight, Superintendent, Water Bureau, October 3, 2006.

Since the Project sites have not been designed location of the relocated pipe and temporary pipes have not been selected at this time however relocated and temporary water mains in and around the Project site will be installed such that adequate domestic and fire flows will be provided as required by the Department of Public Works for the Project. Actual locations and detailed design information for water main construction and relocation will be based on the results of the comprehensive hydraulic analysis to be provided in the FEIS per the City's request, and will be shown in detailed design documents and submitted to the Building Department for approval.

During construction of the new water mains, there may be some discoloration and temporary shutdown of services, but this is expected to occur only after hard connection of water mains and be of short duration. Also, there may be some road closures and temporary redirection of traffic. Temporary access to operating businesses affected by the construction work will be provided. Additionally, current fire flows must be maintained during construction. During final design the Applicant's Engineer, in coordination with the City Water Department, will decide on a case by case basis whether to install temporary piping prior to the installation of the new water mains to maintain service to existing customers.

After the installation of the new mains, the cost of maintenance on the mains should decrease as the new mains will be more reliable than existing mains.

b. Storm Drains and Sanitary Sewers

The estimated average daily sanitary flows for the Project sites are approximately 393,320 gallons per day for River Park Center, Government Center, and Cacace Center, and 100,920 for Palisades Point for a total of 494,240 gallons per day or 0.5 MGD. There will be no increase at the Larkin Plaza site as no development is planned there. The proposed Project will increase average daily sanitary flows from the sites by approximately 452,750 gpd with consideration of the existing sanitary demand from the Project sites of 41,500 gpd. These figures include a 20% flow reduction from the use of water saving fixtures.

Water conservation will be provided in the selection of water-efficient plumbing fixtures for the proposed project as required by the New York State Building Code and the New York State Energy Conservation Construction Code. All plumbing fixtures will be low flow to conserve water and hot water energy. Low flow fixtures are typically accepted as reducing water consumption levels by 20% for purposes of calculating water and sanitary sewer design flows for a project.

Without the use of water saving fixtures, the total sanitary flow would be 617,800 gallons per day. See Table III.H-3, Estimate of Sanitary Flow and Water Demand for more information.

It appears, based on information provided in the existing conditions section III.H.1.c herein, that the existing facilities (i.e., mains, pump stations and the Yonkers WWTF)

could accommodate an increase in wastewater flow during dry weather flow. During times of significant rainfall, the City trunk sewer and carrying pipes in and around the Project sites can become surcharged due to large amounts of storm water runoff entering the combined sewer system. In an effort to reduce this surcharge effect and provide capacity for the proposed Projects during significant rainfall events, a number of mitigation measures have been proposed and are described in this section of the DEIS under "Mitigation Measures".

The daylighting of Larkin Plaza will not impact the existing combined sewers in the adjacent streets. However, the sewer overflow pipes which connect to the existing arch pipe will need to be rerouted to the daylighted/open section of the river. To minimize the impact of the overflow sewers on the new Larkin Plaza Park, the overflow pipes should be rerouted to discharge directly into the enclosed section of the Saw Mill River at the western end of the park. This will minimize the visual and potential odor impacts of the discharge.

Potential Growth From Other Projects

To assess the adequacy of the existing WWTP and sewer infrastructure to accommodate other potential growth in the area, the sanitary sewer flows for other planned development projects slated for completion by the proposed Project's anticipated build year have also been considered. As presented in Table III. H-3, other planned developments are proposed in the area, which would have a combined average daily sanitary flow of approximately 466,130 gallons per day. On a cumulative basis, the average daily sanitary flow of the proposed Project (494,240 gpd) and the other planned developments (466,130 gpd) would total approximately 960,370 gallons per day. The New Main Street trunk sewer and the Westchester County-owned Main Street Pump Station (located on the west side of the railroad) will only see a portion of the sewage from other developments in the area while they serve the Project in its entirety. Approximately 162,500 gallons per day will enter the New Main trunk sewer and Main Street Pump Station from the other developments. Cumulatively with the Project, this infrastructure will see an increase of approximately 656,740 gallons per day. It appears that the existing sewage facilities could accommodate this estimated cumulative increase in wastewater flows; however during times of significant rainfall, the City trunk sewer and carrying pipes in and around the Project sites and the other planned development projects become surcharged due to large amounts of storm water runoff entering the combined sewer and storm sewer system. As discussed under item 3.b. below, at the request of the Westchester County Department of Environmental Facilities, a series of potential mitigation measures are under consideration to reduce existing inflow and infiltration ("I&I") to the County-owned WWTP.

Installation of new storm sewers and other mitigation measures related to the public sewer improvements will lead to a decrease in the cost of maintaining and time spent repairing the sewer.

Table III. H-3 Summary of Other Planned Developments and Preliminary Estimate of Average Daily Sanitary Flow and Water Demand

Map ID	Project Name	Address	De	evelopment P	Program	Unit Flow ⁽¹⁾ (gpd)	Sanitary Flow (gpd)	Sanitary Flow (w/ Water Saving Fixtures) ⁽²⁾ (gpd)	Water Demand (w/ Water Saving Fixtures) ⁽³⁾ (gpd)
	Residential Projects								
19	Buena Vista Phase 2 ⁽⁴⁾	45 Buena Vista Avenue		60	Apts				
			1 BR	24		150	3,600	2,880	3,168
			2 BR	36		300	10,800	8,640	9,504
12	Stan-Lou Building ⁽⁴⁾	27 North Broadway		15	Apts				
			1 BR	б		150	900	720	792
			2 BR	9		300	2,700	2,160	2,376
15	Old Furniture Storage/Cooks ⁽⁴⁾	14 Warburton Avenue		12	Apts				
			1 BR	5		150	750	600	660
			2 BR	7		300	2,100	1,680	1,848
16	Main Street Lofts ⁽⁴⁾	66 Main Street		171	Apts				
			1 BR	68	1	150	10,200	8,160	8,976
			2 BR	103		300	30,900	24,720	27,192
8	Collins Phase 2 ⁽⁴⁾	75 Dock Street		312	Apts				
			1 BR	125	1	150	18,750	15,000	16,500
			2 BR	187		300	56,100	44,880	49,368
11	Greystone/North Broadway Lofts	49 N. Broadway		100	Apts				
	· · · · ·	·	1 BR	40	-	150	6,000	4,800	5,280
			2 BR	60		300	18,000	14,400	15,840
1	Ginsburg	1105-1135 Warburton Avenue		353	Apts				
			1 BR	141		150	21,150	16,920	18,612
			2 BR	212		300	63,600	50,880	55,968
3	Yonkers Green ⁽⁴⁾	Ashburton Avenue & Nepperhan Avenue		124	Townhouse				
			2 BR	50		300	15,000	12,000	13,200
			3 BR	74		400	29,600	23,680	26,048
26	179 Riverdale Avenue	179 Riverdale Avenue		83	Apts				
			1 BR	33		150	4,950	3,960	4,356
			2 BR	50		300	15,000	12,000	13,200
20	1077 Warburton Avenue	1077 Warburton Avenue		71	Apts				
			1 BR	28		150	4,200	3,360	3,696
			2 BR	43		300	12,900	10,320	11,352
4	Ashburton Ave Redvlp. (Mulford Gardens)	Ashburton Avenue Net Increase		245	Apts				
	(Replaces existing 552 units of public housing)	Between St. Joseph & Vineland Avenues	1 BR	100		150	15,000	12,000	13,200
			2 BR	120		300	36,000	28,800	31,680
			3 BR	100		400	40,000	32,000	35,200
	Total Residential						418,200	334,560	368,016

 Table III. H-3 (continued)

 Summary of Other Planned Developments and Preliminary Estimate of Average Daily Sanitary Flow and Water Demand

Map ID	Project Name	Address	Development Program	Unit Flow ⁽¹⁾ (gpd)	Sanitary Flow (gpd)	Sanitary Flow (w/ Water Saving Fixtures) ⁽²⁾ (gpd)	Water Demand (w/ Water Saving Fixtures) ⁽³⁾ (gpd)
	Retail Projects						
19	Buena Vista Phase 2 ⁽⁴⁾	45 Buena Vista Avenue	7,500 SF	0.1	750	600	660
17	Homes for America ⁽⁴⁾	86 Main Street	12.000 SF	0.1	1.200	960	1.056
15	Old Furniture Storage/Cooks ⁽⁴⁾	14 Warburton Avenue	4.400 SF	0.1	440	352	387
16	Main Street Lofts ⁽⁴⁾	66 Main Street	12,000 SF	0.1	1.200	960	1 056
5	I-Park Phase 2	Warburton Avenue Net Increase	20,000 SF	0.1	2,000	1,600	1,760
	(Replaces existing Alexander St. facilities)		,		,)	,
	Total Retail				5,590	4,472	4,919
	Office Projects						
5	I-Park Phase 2	Warburton Avenue	(see 20,000 sf net increase above)	0.1	0	0	0
2	900 North Broadway (Medical Office)	900 North Broadway	25,000 SF	0.304	7,600	6,080	6,688
17	Homes for America ⁽⁴⁾	86 Main Street	58,000 SF	0.1	5,800	4,640	5,104
	Total Office				13,400	10,720	11,792
	Other Projects						
21	Veterinary Office	9 Odell Plaza	25,000 SF	0.14	3,410	2,728	3,001
24	Proctor Theatre ⁽⁴⁾	53 South Broadway	1,200 Seats	3	3,600	2,880	3,168
7	Hudson Park Phase II	Dock Street	153 Berths	2	306	245	269
9	Verizon Switching Station (20 Employees)	140 Corporate Blvd.	20 25,000 SF	22.5	450	360	396
23	Marriott Hotel	160 Executive Blvd.	150 Rooms	137	20,550	16,440	18,084
22	Hampton Inn Hotel	7 Executive Blvd.	114 Rooms	137	15,618	12,494	13,744
10	Restaurant	31 Dock St	Est. @ 80 Seats	35	2,800	2,240	2,464
18	Peter X Kelly's Xaviar's Restaurant	Yonkers Pier (end of Main St.)	240 Seats	35	8,400	6,720	7,392
29	Cintas Laundry Facility	325 Executive Blvd.	-		87,500	70,000	80,000
30	Flex Building: 225 Corporate Blvd. S.	225 Corporate Blvd. S.	50,000 SF		2,841	2,273	2,500
	Total Other Projects				145,475	116,380	131,018
	Grand Total for All Projects (gpd) Peak Flow (gpm)				582,665	466,132	515,745

c. Electric, Natural Gas, Telephone, Communications and Cable Television Systems Preliminary energy demand loads for natural gas and electric for the proposed Project have been estimated and submitted to Con Edison. They are shown on Table III. H-4 below. Natural gas will be used to create space heating, domestic hot water and food preparation. Electric will be used for interior and exterior lighting, air-conditioning, motors and appliances. Con Edison will review the loads to determine the locations of service connections available and potential off-site utility improvements that may be required.

	Project Sites	Electricity (KVA)	Gas (MBH)						
River Park Area									
	Residential	18,500	95,000						
River Park Center:	Retail, Office, Cinema, Restaurant, Ballpark	12,500	50,000						
Palisade Avenue Office Building:	Office	2,500	22,500						
Government Center:	Retail, Restaurant	2,000	11,000						
	1								
Cacace Center: Firehouse, Hotel, Office		2,780	19,500						
River Park Area Tot	al	38,280	198,000						
Palisade Point:	Residential, Retail, Office	10,000	54,000						
Project Building Are	a	48,280	252,000						
Project Parking Area:		7,500	0						
Project Totals (Build	Project Totals (Build Area and Parking) 55,780 252,000								

Table No. III.H-4 Preliminary Estimate of Utility Loads

While Con Edison has indicated that they will provide gas and electric service to the proposed Project, there will be some offsite improvements required to their electric feeder and gas lines that service this area of the City. Con Edison has indicated that the extent of improvements is not yet known and will be determined as the Project design is further developed. However, to obtain a preliminary indication of the types of improvements that may be necessary to accommodate the proposed project, and improvements which may be required outside the Project Area, the Applicant has sent an information request letter to Con Edison, and will incorporate any information furnished by Con Edison into the DEIS as it becomes available.¹⁷

¹⁷ See letter from Divney Tung Schwalbe to Con Edison, dated November 7, 2007 in Appendix 3.H of this DEIS.

As part of the proposed Project, efficiency measures to reduce demand will be taken in the form of energy conservation features and appliances. As discussed in item 3.c.of this section of the DEIS under "Mitigation Measures", energy efficiency will be pursued as part of the Project's environmental sustainability objectives through potential use of measures such as higher efficiency heat pump systems and advanced cooling tower controls for residences (if a water loop heat pump system is selected) as well as other measures that are appropriate to the specific buildings. These HVAC systems have a 10-25% higher cooling efficiency than typical through-the-wall incremental units (PTACs) and can be 10% to 20% more efficient in heating. The design of the buildings and facilities will incorporate systems that will exceed the minimum requirements of the New York State Building Code as outlined under item 3.c. of this section.

The electric line crossing Larkin Plaza will need to be relocated. The proposed conduits could be routed around the eastern end of the park or hung from the pedestrian or vehicular bridge that may be provided in the park. The final location of the relocated electric line will be decided during detailed design of the Larkin Plaza improvements and will require coordination with Con Edison.

Con Edison will provide electric and gas services to the respective sites. Electric and gas services serving the new development are proposed to be located underground The proposed underground utilities will be grouped in common utility trenches where possible and approved by the respective utility companies.

The proposed Project includes the installation of new underground telephone and cable services to each building and may require new service lines in the streets.

In order to serve the telephone services, data services and cable television services of the Project, it is anticipated that Verizon and Cablevision will undertake improvements to their existing distribution systems. The system improvements will be located in underground distribution systems and may include installation of new duct and manhole systems in the public rights-of-way to facilitate service to the Project.

Existing facilities that are impacted by the proposed Project, requiring relocation, will be relocated to new locations in coordination with the Applicant, the City of Yonkers and the respective utility companies. During construction, area roads will experience varying degrees of disruption based on activities being undertaken. In order to accommodate the construction work, temporary and newly relocated telephone and City of Yonkers fiber optic communications facilities will be installed in a sequence that will ensure operational and emergency communications are maintained at all times, particularly communications connections to City Hall, the Fire Department Headquarters, Cacace Justice Center and especially the Health Center Building (in which the City's data and communications center is located). More specific information regarding this issue is provided in item 3.c of this section of the DEIS under "Mitigation Measures" based on discussions held between the City Engineering and MIS departments and the Applicant's engineer on September 6, 2007.

- 3. Mitigation Measures
 - a. Water Distribution System

In order to provide adequate fire flow and domestic supply to the new buildings and without significantly impacting existing water flow in the area, the City of Yonkers has indicated various improvements to the existing water system in the area will be required. Based on the flow testing, the City's consultant has indicated that the following measures should be taken to serve the proposed Project¹⁸:

- Replace 12-inch main in Palisade Avenue with a 16-inch main from New Main Street to Elm Street.
- Replace 12-inch main in New Main Street with a 16-inch main from Nepperhan Avenue to Getty Square.
- Replace 12-inch main in Nepperhan Avenue with a 16-inch main from Elm Street to New Main Street.
- Replace existing 12-inch main in Elm Street with a new 12-inch main from Palisade Avenue to Nepperhan Avenue
- Install a new 16-inch main in Prospect Street from the Riverdale Avenue transmission main to existing 12-inch main in Nepperhan Avenue.

The above measures will help to strengthen the downtown water distribution system and provide fire flows of approximately 3500 gpm at a residual pressure of 60 psi. During the final design of the water main improvements, the City Water Bureau will review the improvement plans to be sure that they adequately address the measures needed to supply water to the project site. It is anticipated that primary responsibility for construction management of the recommended utility improvements will be undertaken by the Applicant in consultation with the City. As discussed in Section III.I "Socio-Economic Factors", of this DEIS, the use of tax increment financing is proposed to pay for these necessary utility improvements. This funding of the public utilities and other infrastructure improvements is integral to the development of the proposed Project and is also necessary to support other future development in downtown Yonkers.

For the Palisades Point site, that City's consultant has recommended that a dual source of supply for the area west of the railroad tracks be created by either a loop around the site or connection to water mains on both ends of the site. Four scenarios were presented in the City consultants' report. They are listed below:

 Create a loop around the site and connect to the existing 12-inch main present in Main Street and the proposed extension of the Alexander Street water main for which installation is being planned by the City DPW.

¹⁸ Hydraulic Analysis Water System Conditions by George W. Lackowitz, P.E. (Proposed River Park Center/Cacase Center April 4, 2007) & (Proposed Palisades Point Site March 19, 2007).

- The construction of a utility bridge in the vicinity of Prospect Street and connection to the existing 12-inch main in Hawthorne Street to provide a second source of supply to the site. This option would eliminate a portion of the dead end main for the site, but still requires a loop around the site.
- Connect to the existing 12-inch water main in Hawthorne Avenue and install a water main from Buena Vista Street under the railroad tracks utilizing the "pipe-jacking" technique to the southern end of the site, which will provide a source of supply from both ends of the site eliminating the need for a loop around the site.
- Connect to the existing 18-inch main in Vark Street south of the site at the American Sugar Refinery. This option will also provide a source of supply from both ends of the site and eliminate the need to loop the main around the site.

Additionally the City's consultant recommends that one of the supply sources be supplied by a new water main connected to the transmission main in Riverdale Avenue. Following the recommendations outlined above will supply the Palisade Point site in excess of 5,000 gpm¹⁹.

The water supply construction work will be phased so domestic and fire service will be maintained to the existing buildings that are occupied during construction. The final design and construction sequencing will be developed during the final design of the public improvements at the Project sites.

The City of Yonkers currently purchases water from the New York City water system at a set rate scale based on U.S. Census data. The population of the City of Yonkers is allotted a fixed amount of gallons based on Census population data and is sold this amount of water at a set rate. When water demand exceeds this allotment, the City is then charged for the water at a premium rate²⁰. Since this rate structure is based on Census data, it does not include water usage from establishments without full time residency such as retail and entertainment uses that may draw a transient population to the City. Although some of the non-residential establishments proposed in the SFC Projects may draw a transient population, the proposed residential project components will also attract approximately 1,950 permanent residents to the City which will increase the City's water allocation from the New York City system.

Since the City will receive payment for the water consumed through metering of the service mains, the money received for water use compensates the City for the increased operational costs associated with the additional water demand.

The replacement of water mains in the adjacent streets with pipe adequately sized to accommodate the water flow would mitigate the effects of the increased water demand in the distribution system and improve flow and reliability of the City system to the downtown area.

¹⁹ Hydraulic Analysis Water System Conditions Proposed Palisades Point Site by George W. Lackowitz, P.E. March 19, 2007

²⁰ Based on meeting between the Applicant's engineer and the City of Yonkers Water Department, September 11, 2007

As a mitigation measure for conserving water resources, the use of water saving fixtures within the proposed Project will reduce the water demand by approximately 20%, resulting in an estimated average daily flow of 543,665 gallons per day and a peak demand rate of 1,133 gallons per minute. The following measures are typical of those to be employed at the development:

- Reduced Flow Plumbing Fixtures
- Reduced Flow Shower Heads
- Drip Irrigation where feasible
- Restrict irrigation to early morning hours
- Air-Cooled Condensing Units where possible
- b. Storm Drains and Sanitary Sewers

Due to the additional development on the Project sites, there will be a net increase of approximately 452,750 gallons per day in wastewater loading to the City and County wastewater collection and treatment systems. Existing on-site City-owned combined wastewater and stormwater systems will be upgraded to accommodate the proposed Project. The City Engineering Department has indicated that the downtown wastewater system can begin to overflow into the County system during intense rainfall events. The removal of some stormwater from adjacent streets would have a positive benefit by reducing the volume of stormwater entering the wastewater system, thus reducing the extent of overflow to the County system. The removal of inflow and infiltration from sources around the city will mitigate the base flow in the sewer system directly as well as reducing the possibility of overflow at the County owned pump stations.

The Westchester County Department of Environmental Facilities has requested that the additional flow to the sewer system from the Project Sites be off-set by reductions in existing inflow/infiltration at a three for one ratio²¹. Therefore, an inflow/infiltration reduction to the existing system of approximately 1.4 million gallons per day is being sought by the County²². Although the Applicant is currently awaiting a response from Westchester County regarding proposed mitigation measures to remediate flow increases to the County-owned WWTP, a series of potential measures which could be considered include, but are not limited to, those listed below (see also Exhibit III.H-5)²³. The Applicant requests that Westchester County in coordination with the City of Yonkers review the range of potential mitigation measures with the Applicant to help further reduce flows to the existing system.

NYSDEC has required municipalities identified in the Westchester County Sewer System Evaluation Survey to remove 40% (by volume) of the inflow and infiltration into their sewer systems. The City of Yonkers reached/exceeded this goal in

²¹ See letter from J. Devany, Westchester County Department of Environmental Facilities, to Divney Tung Schwalbe, dated October 16, 2006 in Appendix 3.H of this DEIS.

²² I&I reduction to be based on a 1.9" baseline rainfall event pursuant to the Westchester County Department of Environmental Facilities "Sewer System Evaluation Survey - Executive Summary" by Dolph Rotfeld Engineering.

²³ See letter from Divney Tung Schwalbe to T. Lauro, Westchester County Department of Environmental Facilities, dated November 7, 2007 in Appendix 3.H of this DEIS.

accordance with the requirements in the report. The City Engineer's office has indicated that there are ongoing repairs being made to the sewer system to continue reducing inflow and infiltration to the City sewer infrastructure.

One method of removing excess water from the sewer system is to physically separate stormwater from the sanitary sewer in the area of the River Park Center site. Since the Saw Mill River flows through the Project area, some separation of stormwater from the sewer system within the adjacent streets can be accommodated. This can be accomplished by adding separate storm piping in the streets to collect and discharge directly to the Saw Mill River. An area of approximately 28.3 acres that lies adjacent to the River Park Center site is currently being evaluated for possible stormwater removal. Potential areas for stormwater removal can be seen in Exhibit III.H-5. The City of Yonkers Department of Engineering has indicated that the preferred inflow/infiltration remediation is diversion of stormwater from the existing combined sewer system through the construction of the new stormwater drainage facilities in the Project area.

Stormwater collected within proposed site boundaries will be treated in conformance with all procedures in the New York State DEC Stormwater Management Design Manual before being discharged into the Saw Mill River. Proposed procedures that will be used to comply with DEC requirements relating to stormwater can be found in Section III.D Stormwater Management section of this document. Stormwater collection systems installed in public streets and other offsite areas where improvements are to be made will be installed with deepened sumps to trap sediment.

Another method of removing excess water from the sewer system is to remove known sources of inflow/infiltration that are listed in the Sewer System Evaluation Survey. Contributory sources identified in the report that are within the limits of the Project will be remediated during construction. Additional items listed in the report will be examined for possible rehabilitation to reduce inflow and infiltration.

The proposed mitigation program, which is currently under review by the Westchester County Department of Environmental Facilities, could lead to a reduction in "base flow" to the sewage treatment system of up to 542,000 gallons per day, which exceeds the amount of additional sewage generated by the Project. During times of rainfall, the proposed mitigation could lead to a removal of stormwater from the sewage treatment system of up to 1,458,000 gallons per day during rainfall events of 1.9 inches²⁴ and more during larger rainfall events. Table III. H-5 below shows a summary of the possible mitigation program.

²⁴ Westchester County Department of Environmental Facilities SSES Program Coordination Executive Summary by Dolph Rotfeld Engineering, P.C. 1993

PROJECT SUMMARY								
	Land Area	Floor Area	Program					
River Park Center:	13.44 acres	1,150,200 s.f	Residential – 950 units					
		722,000 s.f	Retail, Office, Cinema, Ballpark, Resta	aurant				
Palisades Avenue Office	1.07.00000	250.000 s.f	Office					
Building:	1.07 acres	230,000 8.1	Office					
Government Center:	2.31 acres	30,000 s.f	Retail, Restaurant					
Cacace Center:	4.5 acres	265,000 s.f	Firehouse, Hotel, Office					
Palisade Point:	9.62 acres	1.143,200 s.f	f Residential – 436 units, Retail					
Totals	30.94	3,560,400 s.f						
Proposed Sanitary Flow	494,240gpd							
Existing Sanitary Flow	41,490 gpd							
Net Increase San. Flow	452,750gpd							
SANITARY SEWER MITI	GATION SUM	AARY						
Project Site Area (Storm Sep	aration)	12.34 acres	636,604 gpd					
Adjacent Streets (Storm Sepa	aration)	15.92 acres	821,291 gpd					
West. County Identified Sour	rces:	-	542,040 gpd					
		28.26 acres	1,999,935 gpd					
Reduction Ratio (Possible Re		4.42:1						

Table III. H-5 Proposed Improvements Sanitary Sewer Mitigation Summary

Note: Actual Sanitary Sewer Flow reduction from stormwater separation is not confirmed. Amounts subject to final engineering design and survey mapping to confirm areas. Goal of mitigation is to reduce existing sanitary flow by a factor of 3 times that of the proposed increase.

The City Engineer's office has requested that the Palisade Avenue brick lined trunk sewer from Getty Square to Elm Street be relined to improve and extend the life of the sewer. The City Engineer's office has indicated that the New Main Street trunk sewer has recently been relined for similar reasons. As noted above herein, it is anticipated that primary responsibility for construction management of the recommended utility improvements will be undertaken by the Applicant in consultation with the City. Tax increment financing is proposed to fund the cost of the necessary utility improvements as discussed in Section III.I (Socio-economic Factors) of this DEIS.

In addition, as was outlined in the Proposed Water Demand and Sanitary Load Table III.H-2, using water conservation measures will reduce the proposed sanitary load by 20%. The adjusted sanitary load for the proposed Project is estimated to have an average daily flow of 494,240 gallons per day, with a peak flow rate of 1,030 gallons per minute. The mixed-use nature of the development will lead to a number of different peaks at different times during the day.

As discussed above, the results of the sanitary sewer monitoring conducted in the Fall of 2006 at three representative locations in the sewer system indicate that the sewer mains should have the capacity for the proposed Project under normal conditions. It is noted that although a number of rainfall events occurred during the aforementioned monitoring period, no significant rainfall events occurred that may cause overflow

into the sewer regulators. The results of the sanitary testing are summarized in Table III.H-6 below.

Sanitary Flow Monitoring	Average Peak w/o Rainfall	Maximum Recorded	Minimum Recorded	Theoretical Capacity				
New Main Street	Flow	gpm	1,276	16,819	1,162	39,676		
36 Inch	Velocity	ft/s	6.7	13.3	6.1	13.3		
Circular - Brick	Depth	in	4.1	16.7	3.8	36.0		
% Change From Average Peak				1219%				
Palisade Avenue	Flow	gpm	3,730	24,231	2,907	51,059		
48 Inch	Velocity	ft/s	3.1	12.2	3.6	11.3		
Circular - Brick	Depth	in	8.1	20.8	8.9	48.0		
% Change From Average Peak				550%				
Main Street	Flow	gpm	108	324	75	588		
12 Inch	Velocity	ft/s	2.2	10.0	1.1	1.8		
Circular - Cip	Depth	in	3.1	6.5	2.9	12.0		
% Change From Average Peak				199%				

Table No. III. H-6Sanitary Flow Testing Results

Flows were monitored by New England Pipe Cleaning Co. between October and December of 2006. The meters were originally installed at all three locations on October 27th. The Palisade Point meter was scheduled for two weeks of data collection. The New Main Street and Palisade Avenue meters were installed for six weeks of data collection. Due to a system malfunction, the Palisade Avenue meter data collection did not begin for two weeks after the original installation date. During the monitoring period it rained during 17 of the days. The largest storm (by depth) was recorded on Wednesday November 8th during which approximately 4.0 inches of rain fell. The average of the recorded rainfall depths during the monitoring period was approximately 0.75 inches. During the monitoring period no rainfall occurred that caused an overflow into the county system. It appears that the sewers have sufficient capacity during most operating conditions. During extreme stormwater events, it is expected that sewage will continue to overflow to the Hudson River. However, since the Project will reduce stormwater infiltration and inflow by a factor of 3 to 1, the Project will not impact the existing sewer systems.

As part of the Larkin Plaza daylighting, there is the opportunity to provide for the separation of the stormwater runoff in the adjacent streets from the existing combined sewers. This will require the installation of new inlets and storm drains within Dock and Nepperhan Streets and the extension of outlet pipes to the open daylighted portion of the Saw Mill River. This will reduce flow into combined sewer system and improve drainage within the adjacent streets during storm events. This would allow the connection of existing or future buildings in the adjacent area to the new storm drain system, instead of the existing combined sewers.

c. Electric, Gas, Telephone, Communications and Cable

The construction of the new, modern underground electric and gas system to the Project sites will result in greater reliability, with reduced pollution potential due to the use of gas as opposed to oil.

Con Edison is currently planning a 9.5-mile oil-filled high voltage distribution feeder from the Sprain Brook high voltage distribution station to a new substation in Northern Manhattan, south of the City of Yonkers. The high voltage distribution feeder is routed in Nepperhan Avenue and Riverdale Avenue for a majority of the route. Construction is anticipated to commence by February of 2009 and take approximately two years to complete construction activities in the public rights-ofway. The Applicant is presently seeking information from Con Edison regarding the current status of the planned high voltage distribution feeder, and will incorporate this information into the DEIS as it becomes available.²⁵

The new electric and gas infrastructure by Con Edison will be constructed in accordance with the requirements of the City of Yonkers Department of Public Works. As previously noted, the proposed Project includes the installation of new underground telephone and cable services to each building and may require new service lines in the streets. As discussed in Section II, "Description of Proposed Action", of this DEIS under "Environmental Sustainability Objectives", energy efficiency will be pursued by potentially using higher efficiency heat pump systems and advanced cooling tower controls for residences (if a water loop heat pump is selected)- as well as other measures that are appropriate to the specific buildings. These HVAC systems have 10-25% higher cooling efficiency than the typical through-the-wall incremental units (PTACs) and can be 10%-20% more efficient in heating. According to the project mechanical and electrical engineer, the design of the buildings and facilities will include a number of systems that will exceed the minimum requirements of the New York State Building Code. Some of these measures will include:

- 1. High efficiency central chiller and boiler plants exceeding the New York State Energy Code performance requirements.
- 2. All premium efficiency motors exceeding the New York State energy code.
- 3. Water source heat pumps (apartments) meeting NYSERDA performance, which exceeds ASHRAE 90.1 and the energy code.
- 4. All variable airflow and variable water flow systems will have variable speed drives.
- 5. Central chiller plants will have condenser water optimization control and minimal chilled water reset control.
- 6. Central boiler plants will have low NOx emissions and will have discharge temperature reset control.
- 7. Where appropriate outside air ventilation will have demand control based on CO2.

²⁵ See letter from Divney Tung Schwalbe to Con Edison, dated November 7, 2007 in Appendix 3.H of this DEIS.

- 8. Garage ventilation systems will have variable air volume control using variable speed drives based on CO setpoint control.
- 9. The building envelope energy performance characteristics for the walls, glass and roof will be better than the New York State Energy Code.
- 10. Lighting power densities for all public spaces will be better than ASHRAE 90.1 and the energy code.
- 11. All plumbing fixtures will be of the low flow type conserving water and hot water energy.
- 12. Appliances for apartments will be of the high efficiency type without using CFC based refrigerants and will use HFC 134a.
- 13. Building siting will consider orientation to minimize seasonal energy use.

The telephone, electric and cable services to each building will be coordinated with the respective utility company and coordinated with other infrastructure work that will be undertaken so as to minimize the construction impacts to the surrounding street systems and businesses. This may require the installation of temporary services.

The existing Fire department Headquarters and City operations at the health center building will be relocated prior to the move of the MIS department from the Health Center to the Carnegie building and the Fire Department Headquarters to the new firehouse so as to ensure that operational and emergency communications are maintained at all times. In order to minimize disruption of these services, the exact location of the lines is being determined and a schematic relocation plan²⁶ has been prepared for City review and approval prior to any construction. See Exhibit III.H-6, "City of Yonkers Fiber Optic Cable Routings", for a copy of the plan that has been forwarded to the City's MIS department for their approval. The relocation plan and the timing of this work will be finalized as part of the detailed construction phasing plan to be provided to the City prior to the start of work in these areas. A similar plan will be developed with Verizon to minimize disruption to the public communications systems.

Palisades Point is currently a vacant site except for parking and no impacts to communications infrastructure are anticipated as a result of construction at this waterfront site.

²⁶ Relocation plan developed with the help of City officials in the City Engineering and MIS departments during a meeting held with the Applicants Engineer on September 6, 2007.



NOTE: BASE SURVEY INFORMATION RECEIVED FROM CITY OF YONKERS ENGINEERING DEPARTMENT

Exhibit III.H-1 EXISTING WATER MAINS SFC PHASE I PROJECTS STRUEVER FIDELCO CAPPELLI LLC



NOTE: BASE SURVEY INFORMATION RECEIVED FROM CITY OF YONKERS ENGINEERING DEPARTMENT

Exhibit III.H-2 EXISTING SEWER AND DRAINAGE LINES SFC PHASE I PROJECTS STRUEVER FIDELCO CAPPELLI LLC



SFC PHASE I PROJECTS

STRUEVER FIDELCO CAPPELLI LLC





Exhibit III.H-5 COMBINED SEWER MITIGATION

SFC PHASE I PROJECTS

STRUEVER FIDELCO CAPPELLI LLC



STRUEVER FIDELCO CAPPELLI LLC

CITY OF YONKERS FIBER OPTIC DATA CABLE ROUTING

SFC PHASE I PROJECTS

Exhibit III.H-6