SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF ORANGE

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In the Matter of the Application of

THE ENLARGED CITY SCHOOL DISTRICT OF MIDDLETOWN

Petitioner,

AFFIDAVIT IN RESPONSE OF GEARY F. CHUMARD

-against-

Orange Index # 10-7804

THE CITY OF MIDDLETOWN,

JOSEPH M. DeSTEFANO, in his capacity as MAYOR;

J. MIGUEL RODRIGUES, in his capacity as MIDDLETOWN COMMON COUNCIL PRESIDENT and member of the MIDDLETOWN COMMON COUNCIL;

JOSEPH G. MASI, THOMAS BURR, SCOTT A. SMITH, ASHOK SABNIS, RAYMOND DEPEW, BILL HIMARAS, JOEL SIERRA, and C. LEE GEROW, in their capacities as members of the MIDDLETOWN COMMON COUNCIL;

THE MIDDLETOWN COMMON COUNCIL;

THE MIDDLETOWN DEPARTMENT OF PUBLIC WORKS; and

JACOB TAWIL, in his capacity as MIDDLETOWN DEPARTMENT OF PUBLIC WORKS COMMISSIONER,

Respondents.

For a Judgment under Article 78 of the Civil Practice Law and Rules.

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STATE OF NEW YORK)
)ss.:
COUNTY OF ORANGE)

GEARY F. CHUMARD, being duly sworn, deposes and says:

1. I am employed by **Clark** Patterson Lee, Design Professionals, with local offices at 900 Corporate Boulevard, Newburgh, New York, 12550, and at 4 Fairlawn Avenue, Middletown, NY, 10940. I have been employed by **Clark** Patterson Lee, formerly Clark Patterson Associates, since July 1996. My current title is Principal-Associate. I make this Affidavit in support of the City of Middletown's Response to the Petition and Complaint.

2. I am a licensed professional engineer in the State of New York and in the State of Pennsylvania, and a licensed land surveyor in the State of New York.

3. Clark Patterson Associates was retained by the City of Middletown in 2003 to conduct a Sewer System Evaluation Survey (SSES), for the purpose of evaluating the City-wide wastewater collection system, to identify sections of the sanitary sewer system with excessive infiltration and inflow, and to make recommendations for remediation. The title of our report is City of Middletown, New York Sewer System Evaluation Survey, dated January 2004. I was involved in this study. My duties included research and compilation of previous studies, existing maps, compilation of other relevant data, including rainfall records, and metered flows at the City's wastewater treatment plant. I made numerous field inspections of the sewer system, including sewage flow measurements at selected locations. I assisted others in our company who wrote the final report, offering input, advice, and editing drafts. The above referenced previous studies included an Infiltration and Inflow Study for the City of Middletown from 1978, and an

SSES for the City of Middletown from 1984, both prepared by Chumard & McEvilly, Consulting Engineers, with myself as principal author.

4. Various sewer tributary subsystems of the City's sanitary sewer system were studied in the SSES. The particular subsystem which includes Chorley Elementary School was labeled "TM7-4", in the SSES. The most downstream discharge point in this subsystem is Elm St., which is a side street off Monhagen Avenue. (see map annexed hereto as Exhibit B). The sewer subsystem labeled TM7-4 includes approximately 915 properties, mostly residential, but with some commercial, and also including Chorley Elementary School. The total theoretical average base sewage flow for all the sewered properties in TM7-4 (no infiltration or inflow) was calculated to be 200,000 gallons per day. The wet weather flow was measured to be 1,020,000 gallons per day, during a rainstorm on June 22, 2003. The excess flows in TM7-4 on that date, then, were calculated to be 820,000 gallons per day. The situation on June 22, 2003 should be considered a "snapshot in time", the same as any other particular day. Sewer flowrates in TM7-4 will be higher or lower on any given day, depending on groundwater levels, and the intensity and duration of any particular rain event.

5. The SSES notes that the manhole in the Cantrell Avenue right-of-way, at the most downstream point of subsystem TM7-4-3-3 (see attached map) was surcharging during one of the June 2003 rainstorms. I have seen this manhole overflow on other occasions during storm events. I took a photograph of this manhole overflowing during a rain event on March 8, 2008. (see photo annexed

hereto as Exhibit Q. I have also observed a manhole in Lake Avenue, just southeasterly from Ashland Avenue, overflow during rainstorms, although I did not observe this manhole to overflow during the June 2003 storms, which was during the study period of the SSES. It has been reported to me by Commissioner of Public Works Jacob Tawil that other manholes have been observed to overflow along the main sewer line into which the Chorley sewer line discharges, and which leads to Elm Street. Commissioner Tawil stated to me that these observations were made by Department of Public Works (DPW) employees at various times during wet weather events, and in one instance, by Commissioner Tawil himself.

6. The aforementioned main sewer line leading from Chorley School to Elm Street, commonly known as the "black dirt sewer", is so named because it was installed through deep black organic soil. To compensate for the low bearing capacity of such soil, timber piles were driven along the route of the sewer to help support it, during the installation. During an investigation by the City Department of Public Works in 2005, a section of this sewer was inspected internally by a TV camera. The photo annexed hereto as Exhibit R shows an object in the sewer pipe, believed to be the top of a timber pile which has broken through the bottom of the sewer pipe, and penetrated several inches into the sewer. DPW personnel stated that the object could not be moved when attempts were made to clean the sewer line. Commissioner Tawil stated to me that DPW personnel attempted to clean other sections of this sewer line with a high pressure sewer jet, and encountered

obstructions in two other locations, which could not be dislodged or moved by the sewer jet. These locations are shown approximately in the attached map.

7. At the City's request, I was asked to examine certain documents, including a report titled ENGINEER'S REPORT, SANITARY SERVICE FOR THE NEW MIDDLETOWN ENLARGED CITY SCHOOL DISTRICT, MIDDLETOWN, NEW YORK, with revised date of June 15, 2010, prepared by Barry L. Pickard, Consulting Engineer. There is an accompanying letter of transmittal addressed to Dr. Kenneth Eastwood, also written by Mr. Pickard, and also dated June 15, 2010. Mr. Pickard stated in this letter that "...my analysis shows that the existing downstream city sewers will not be overtaxed by the additional sewage flow from the new school." Mr. Pickard further states in this letter that "Furthermore, a review of the SSES Report and State Environmental Conservation Department correspondence yielded no evidence to support the City's contention that the downstream sewer collector between the school's property line and the 15- inch diameter trunk sewer at Elm Street must be replaced on the basis of excessive groundwater infiltration." In response to these statements, I must point out that the SSES conclusively showed excess flows to Elm Street in the amount of 820,000 gallons per day, as a result of a particular storm event in June 2003, and that during this time, at least one manhole (on Cantrell Ave.) was observed to be surcharged. The SSES showed a "snapshot in time" of the sewer system, including the particular subsystem in which Chorley School is located. The fact that the SSES did not specifically recommend replacement of this particular sewer

line should not be construed as a decision by the City of Middletown never to replace it. The SSES stated at the outset, in the Executive Summary, that "Due to the widespread nature of the problem and the often elusive nature of I/I, it was determined to focus on a limited number of areas which exhibited the worst I/I conditions as determined based on flow per equivalent population and volume of I/I, and which appeared to possess the best probability of successful I/I reduction in a cost-effective manner, instead of attempting to locate and correct the more widespread I/I throughout the system." The SSES recommended certain areas within the City-wide sanitary sewer system for remediation, and included a time schedule for this work. The conclusions and recommendations of the SSES were reviewed and accepted by the NY Department of Environmental Conservation, and the City has remained on schedule to implement the recommended remediation work. Nevertheless, the SSES, together with observations of obstructions, and manhole overflows along and near the sewer line leading from Chorley School to Elm Street, show that the line is at capacity, and that additional proposed flows will result in wet weather overflows being made worse. Such overflows, which do not normally occur on a day-to-day basis, but which can and do occur during wet weather events, will now occur sooner, last longer, and increase in volume, by virtue of the additional sewer flows calculated by Mr. Pickard to be generated by the proposed school.

8. Pickard also states in his June 15, 2010 letter to Dr. Eastwood, that "The

average and peak sewage flows from the new school will in fact be only twice that from the existing school, since the sewage flows are in proportion to the student population figures." In response to this statement, I must point out that if true, Mr. Pickard is still acknowledging an increase in daily sewage flows. However, Mr. Pickard's calculated estimate of average daily sewage flows from the new school in his June 15th engineering Report (19,200 gallons per day), is approximately 8 times the actual sewage flows from the existing Chorley School, based on actual metered water use for the past several months. Monthly water meter readings for March, April, May, and June 2010 were 60,700 gallons, 62,100 gallons, 51,500 gallons, and 59,290 gallons, respectively, for Chorley School. Using a round figure of 60,000 gallons per month, which is higher than the four month average, and assuming 20 school days per month, average daily water use would be 3,000 gallons. Using a generally accepted assumption that sewage flows are approximately 80% of metered water consumption, the estimated average daily sewage flow from Chorley School is approximately 2,400 gallons, which is one-eighth of the average daily flow calculated by Mr. Pickard for the new school.

9. "Downstream Sewer Analysis" section of Mr. Pickard's Engineering Report appears to be limited only to the existing 8 inch diameter sewer between the school's property and Cantrell Avenue. However, it is the existing sewer line downstream from Cantrell Avenue, leading from the abovementioned 8 inch line, to Elm Street, that is of most concern, given the observations of overflowing manholes during wet weather, physical obstructions in the sewer, and high

excessive flows. It is this line, commonly referred to as the "black dirt sewer", which is at capacity even without the projected additional flows from the new school.

10. When the District's middle school was constructed 12 years ago, the County Route 78 water lines were made large enough to handle potential development in excess of the school needs; a new 18-inch water line was constructed from the City's water plant and was capable of servicing significantly large areas of the City and surrounding Towns; the school itself would have only required a much smaller line, in my opinion, approximately a 6-inch diameter.

GEARY F. CHUMARD

Sworn to before me this
18th day of August, 2010

NOTARY PUBLIC

KARI M. MESSLER
Notary Public, State of New York
No. 01ME6001718
Qualified in Orange County
Commission Expires Jan. 20, 2014

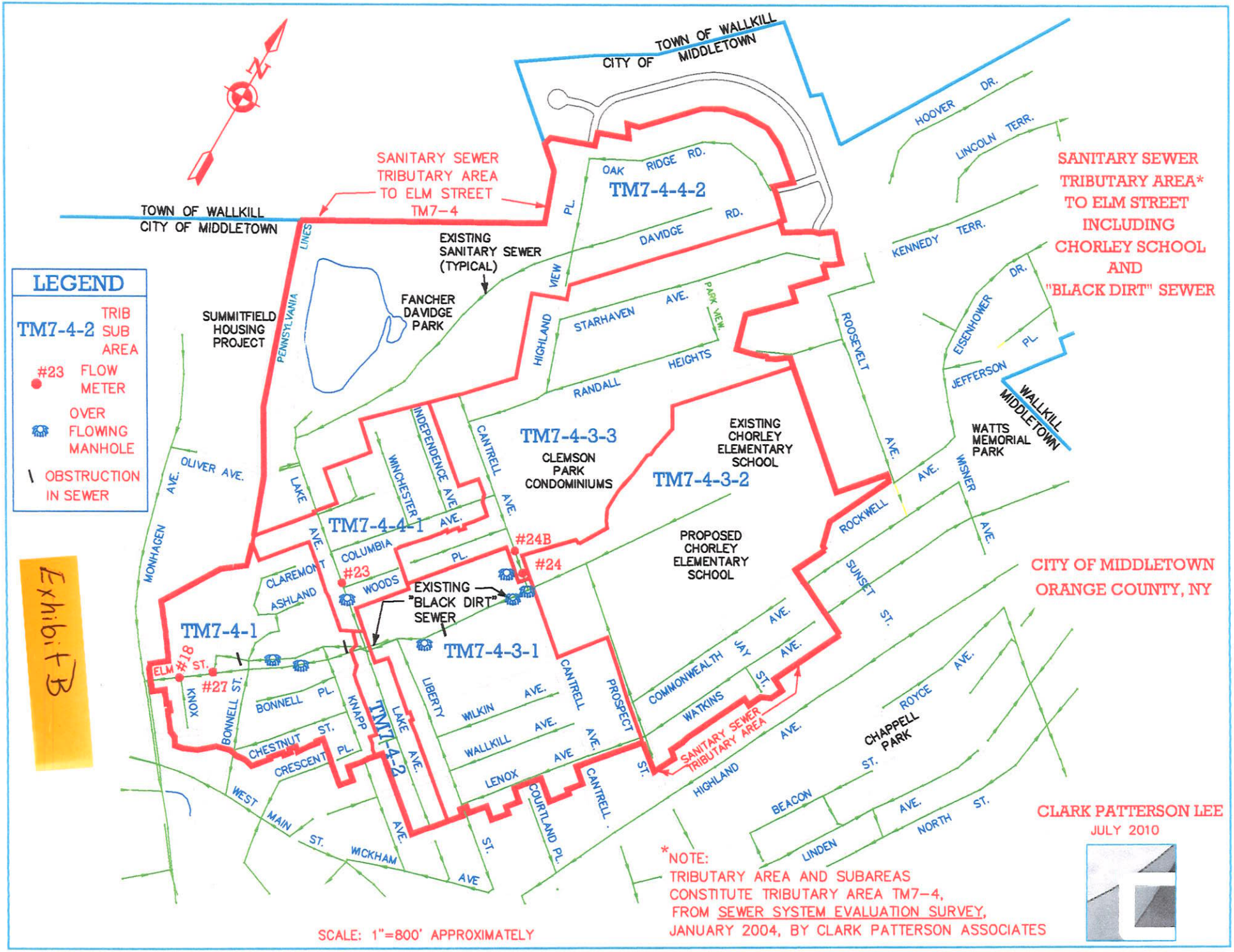
SANITARY SEWER TRIBUTARY AREA* TO ELM STREET INCLUDING CHORLEY SCHOOL AND "BLACK DIRT" SEWER
CITY OF MIDDLETOWN ORANGE COUNTY, NY
LEGEND
TM7-4-2 TRIB SUB AREA
#23 FLOW METER
OVER FLOWING MANHOLE
OBSTRUCTION IN SEWER
Exhibit B
TOWN OF WALLKILL
CITY OF MIDDLETOWN
SANITARY SEWER TRIBUTARY AREA TO ELM STREET TM7-4
EXISTING SANITARY SEWER (TYPICAL)
FANCHER DAVIDGE PARK
SUMMITFIELD HOUSING PROJECT
TM7-4-4-2
TM7-4-3-3
CLEMSON PARK CONDOMINIUMS
TM7-4-3-2
EXISTING CHORLEY ELEMENTARY SCHOOL
PROPOSED CHORLEY ELEMENTARY SCHOOL
TM7-4-4-1
TM7-4-1
TM7-4-3-1
TM7-4-2
#23
#24
#24B
#27
#18
EXISTING "BLACK DIRT" SEWER
SANITARY SEWER TRIBUTARY AREA
WATTS MEMORIAL PARK
CHAPPELL PARK
OAK RIDGE RD.
DAVIDGE RD.
VIEW PL.
HIGHLAND
STARHAVEN AVE.
PARK VIEW
HEIGHTS
RANDALL
PENNSYLVANIA LINES
LAKE AVE.
OLIVER AVE.
MONHAGEN AVE.
INDEPENDENCE AVE.
WINCHESTER AVE.
CANTRELL AVE.
COLUMBIA PL.
WOODS
CLAREMONT
ASHLAND
ELM ST.
KNOX
BONNELL ST.
BONNELL PL.
KNAPP
CHESTNUT ST.
CRESCENT PL.
WEST MAIN ST.
WICKHAM AVE
LIBERTY
WILKIN AVE.
WALLKILL AVE.
LENOX AVE
COURTLAND PL.
CANTRELL ST.
PROSPECT ST.
ROOSEVELT AVE.
ROCKWELL AVE.
SUNSET ST.
COMMONWEALTH AVE.
JAY ST.
WATKINS AVE.
HIGHLAND AVE.
BEACON ST.
NORTH AVE.
LINDEN
ROYCE AVE.
WISNER AVE.
HOOVER DR.
LINCOLN TERR.
KENNEDY TERR.
EISENHOWER DR.
JEFFERSON PL.
WALLKILL MIDDLETOWN
*NOTE: TRIBUTARY AREA AND SUBAREAS CONSTITUTE TRIBUTARY AREA TM7-4, FROM SEWER SYSTEM EVALUATION SURVEY, JANUARY 2004, BY CLARK PATTERSON ASSOCIATES
SCALE: 1"=800' APPROXIMATELY
CLARK PATTERSON LEE
JULY 2010

Exhibit C

OVERFLOWING MANHOLE - MARCH 8, 2008
CANTRELL AVENUE, NEAR CLEMSON PARK CONDOMINIUMS
SEWER SLOPE UPSTREAM AND DOWNSTREAM IS FLAT-TO-GENTLE

PHOTO OF TOP OF TIMBER PILE PENETRATING THROUGH BOTTOM OF SANITARY SEWER

BETWEEN LAKE AVENUE AND ELM STREET

APRIL 2005

Exhibit D