Orange County Sewer District

Population, Water Demand, Wastewater Projections, Assessment and Investigation

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Blooming Grove, NY
February 7, 2013
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Contents

Executive overview:

The attached document studies the Orange County Sewer District (OCSD) user communities and the Moodna Communities, using the U.S. Census data, the Water Authority's Water Master Plan, the Kiryas Joel FEIS and growth assessment documents for connection to the NYC aqueduct, and the Inter Municipal Agreement (IMA) between Orange County Government and Kiryas Joel in order to project:

- Population and housing growth
- Water and wastewater requirements to sustain that growth.

This study began as a projection and assessment of growth impacts on the OCSD and our environment; but when information from the DEC was FOILed, a summary of those findings was added in order to:

- Examine the effectiveness of the current governance
- Present alternative governance.

All assumptions and data are provided in the appendices of this document. All spreadsheets will be provided to anyone interested in examining the methodology used to determine these projections.

History

When the county established this facility, they decided to use the Rockland County Local Sewer District Law as its base, **but it made one change that has made all the difference. It created an Administrator to oversee and manage this facility instead of a Board of Commissioners representing the local communities using the plant, with the County serving as a member of this Board.** Under the current Orange County system, this Administrator only answers to the County Executive and the 21 legislators provide oversight but 16 of the legislators have no constituents in the OCSD and, therefore, cannot be held accountable by or to the users and rate payers of the Plant.

Governance

The Governance section addresses how the communities that share this facility have limited ability to affect decisions made by the County due to the fact that only 5 County Legislators out of 21 have constituents using the Harriman Plant. While these user communities pay all the costs associated with this facility, they have little to no voice in its management. This governance can best be summarized by the quote "taxation without representation" -- because the local elected officials are not included in the decision making process and have

no vote on the budget, the capital plan, or oversight of the facility. Yet they do get to participate because their constituents have to fund all of the county decisions.

The ineffectiveness of the current governance was made clearer when we read communications between the County and the DEC. The DEC appears to have numerous problems with getting information from the county and Kiryas Joel which should not be a surprise to anyone in light of the past year's Legislature's battles to get information to which it is entitled concerning Valley View and the Government Center.

The County has consistently ignored or delayed providing the necessary information to the DEC to the point that they are threatening the OCSD users with fines that add up to over $3.7 million per day.[1]

Capital Plan

The Capital Plan[2] is part of the budgeting process that the users of this facility have no say in. This plan identifies all projects and their estimated and actual costs that are authorized and approved as well as those proposed for future spending.

The local leaders have concerns with how our tax dollars are spent but the county provides little to no meaningful input to keep them informed. The County can spend the users' capital dollars on funding whatever they want, and sell our assets to whomever they want for whatever they want without fear of being challenged by anyone. This can be verified by looking at Appendix A in this document. There is currently approved and authorized $41 million and an additional $53 million is being proposed for a total of $94 million. This does not include the projected $600 million needed to support the growth over the next 27 years.

Facilities planning and Projections on Growth

This document contains projections for Kiryas Joel and the other OCSD communities. These projections show that the Kiryas Joel population based on the 2000 to 2010 census is suspect. However, using the growth rate established by the housing unit growth (which looks at housing units built and ready for occupancy, but not yet being lived in) is a better measure of growth projections. Both are provided in this document.

With the exception of the chicken processing plant in Kiryas Joel (which currently uses 300,000 gallons of water per day), we did not include any commercial or government units in

[1] See Appendix F, Section c for the memo from the DEC.

[2] This would include the $26 million that was used to upgrade the OCSD in 2006, and the $2 million that is being used to study expanding this facility beyond its current $6 million gallons per day capacity as well as buying equipment for maintaining this facility.

our analysis of the OCSD, so the requirements for water and wastewater are understated. The impact of these units for all of the municipalities needs to be added to the totals provided in this document in order to have a more complete picture on the numbers.

What the information in this document shows is that, while Kiryas Joel's growth will generate a demand for 22.5 mgp of wastewater over the next 27 years, the non Kiryas Joel communities in the OCSD will only generate an additional demand for 4.1 mgp over that same period of time. In calculating the capital cost of this additional capacity, it comes to about $600 million which does not include the commercial or government unit's capacity requirement.

This raises a number of questions, one of which is: can these communities afford this cost? Kiryas Joel, the poorest community in the United States, is creating 85% of this cost. Will the taxpayers/OCSD users be forced to pay for this expansion? They already pay for the Kiryas Joel WWTP as outlined in the IMA agreement.

Conclusions

We need new governance for the OCSD, one that gives the OCSD back to the users to manage and oversee. County involvement is important but not as a decision maker since they do not have a financial stake in actually paying any of the costs of maintaining or managing this facility. Legislators, without constituents who are users of the Plant, are removed from direct communication with local elected officials and their constituents who actually have real life experience with the Plant, its problems and its costs.

A larger, but critically important County issue, is the need for a Charter Convention[3] to correct the problems that are preventing the voters of the OCSD community (and county as a whole) from participating in the governmental process. A basic and essential starting point is to separate the financial planning and reporting from the operation of the county government, thereby enabling the critical concept of our system of government--- checks and balances—to function properly. This can be done by creating an Independent Comptroller, elected by the people to assess and consolidate the county budget, monitor and report on the budget and investigate all issues that suggest that the taxpayer's money is not being managed/spent appropriately. Then the County Executive would be the Operations Officer, responsible for ensuring that the budget that is approved by the legislature is executed as appropriated. Today the County Executive has both of these roles and the results speak for themselves.

[3] Since the County Charter is equivalent to our Constitution it should be understood to be a Constitutional Convention.

Without this change, and soon, this county will be heading down a disastrous environmental and financial road.

OCSD History

In order to understand the issue of the Orange County Sewer District #1 (OCSD #1) it is necessary to understand the history of that facility.

The Orange County Sewer District was created in 1974 and had a capacity of 2.0 million gallons per day (mgd). It was established to address problems that existed with a number of local treatment plants and hundreds of individual septic systems that served the residents at the time. The original OCSD #1 municipalities were Village of Harriman, Village of Kiryas Joel and Village of Monroe.

When Orange County created the sewer district it copied the Rockland County Local Law to govern the OCSD#1. However, it made one significant change: Orange County created a County Administrator rather than follow the Rockland County Law and create a board of commissioners. This County Administrator, who serves at the pleasure of the County Executive, took on the role of the Board of Commissioners with one major difference – s/he was not responsible to the users nor does s/he have to accept input or answer inquiries or requests from them or their local elected officials. Whereas the Board of Commissioners was appointed by the local elected officials and had county representation on the board and was the sole decision maker for their sewer district. Their budget is included in the County Budget and approved by the County Legislature but all decisions are made by the Board.[4]

In 1978 the OCSD #1 facility was expanded to include what is now called the Moodna Communities. This includes portions of the Town and Village of Chester, Town of Blooming Grove (now Village of South Blooming Grove), Town of Woodbury and portions of the Town of Monroe. In order to expand the plant to support the flows from the Moodna Communities' the municipalities/users of those communities needed to fund the entire capital expenditure to complete the 2.0 mgd upgrade. It was determined at that time that the each member of the Moodna Group would receive an allocation and pay for that allocation regardless of whether they used their allocation or not. Despite having doubled the capacity of the OCSD the Moodna Communities were not made members of the OCSD because the County did not ask to change the local sewer law to include them. Today they are still known as the Moodna Community/Group and not considered members of that facility.

In 2000 there were two major events:

[4] This has been the causes of many of the problems that exist with this facility because the local communities are NOT included by the County in any decisions involving that community and when they are it is only to allow them to say they talked with the local elected officials. Also, all 21 legislators participate in the decisions process but no serious efforts are made to give more weight to the Legislators who represent the user communities.

1. The DEC reassessed the Moodna expansion and increased the total OCSD capacity from 4.0 mgd to 4.5 mgd but the Moodna Community was not given a share of that additional capacity despite having funded initial expansion.

2. The County entered into a lease agreement with Kiryas Joel to lease and operate their wastewater treatment plant. This contract was, and still is, paid for by the OCSD #1/Moodna user communities despite the fact that, according to the county budget at that time, there was no need for this additional capacity because there was sufficient capacity at the OCSD to support the flow volumes from all of the user communities at that time. Up to 2004 the OCSD paid Kiryas Joel up to approximately $336,000 per year for this lease. Then in around 2008 the County created a new Inter Municipal Agreement (IMA) and the OCSD users cost jumped to $700,000 per year for what the IMA says is 970,000 gpd.

In 2001 the DEC issued an Order of Consent to Orange County because of environmental issues that plagued that facility. There were a number of issues with infiltration and inflow[5] (I & I), repairs and exceeding approved flow capacity. These issues resulted in a moratorium on all new connects to the OCSD #1/Moodna communities.

To address DEC's moratorium the County in 2003 began construction on a new treatment train to add an additional 1.5 mgd of treatment capability. The county declared this project completed in 2006 and the DEC lifted the moratorium for new users. The Year-to-Date (YTD) cost of the upgrade to the OCSD/Moodna users was $24 million. The county reported that in 2006 this Order of Consent was completed. However, the Capital project was not reported as completed until 2009 and has remained in the Capital plan as open and available with a $1.3 million surplus. The surplus was the result of a late payment of a Federal grant of $742,250 and the remainder is from borrowing more money than was needed for the project. I am not sure why the county is holding this money since it could use it to reduce the outstanding debt that is being paid by the OCSD #1/Moodna users.

In 2004 the County developed and submitted to the EPA an Industrial Pretreatment Program (IPP) as required for facilities that exceed 5 mgd. This was rejected by the EPA and again an Order of Decree was issued in 2008 because of the county's failure to comply and produce this plan. The Order stated that on the day of the scheduled meeting for the county to present the IPP document to the EPA the county instead called and asked for an

[5] I & I consists of groundwater which seeps into sewage conveyance pipes (infiltration) and water entering the system through unauthorized external water conveyance sources such as roof drains, storm drains, etc., thereby increasing the amount of water to be treated and reducing the plant's capacity to treat actual sewage. Infiltration and inflow can be expensive on a sewer district because it uses up valuable processing capacity. For every 1.5 mgpd processed this it will cost the users of that facility at least $24 million just to add that much capacity.

extension because it had not done the work to complete this document. The EPA was not happy.

In the third quarter of 2008 a new local law was passed by the legislature, with the Industrial Pretreatment Program (IPP), to govern the OCSD #1 and although the legislators were asked to address the governance of that facility so as to give the users a say in the management and oversight of this facility. However, they took no action.

Today many of the legislators and local elected officials do not understand why the County has absolute control over the Orange County Sewer District or why the Moodna group is separate but they have done nothing to correct this injustice. The primary reason for this confusion is that the current governance makes no sense.

OCSD Governance Process

The following sections will provide some insights into why we believe that the OCSD Governance is broken and is in serious need of change.

Governance Structure:

The OCSD Community is divided into four components;

1. The **County Administrator,** manages this facility but has no responsibility for customer satisfaction, a **County Executive** who has no requirement to go to the local communities and users to get their approval for anything he does because only the full legislature approves the OCSD budget, and a **County Legislature** that has 16 people who have no constituents in that district and there is no way for the user communities to hold them accountable. Add to that the fact that there is no one at the county level for the local officials to go to and get issues resolved. The only recourse for these officials is go to court and have their constituents pay for both sides of the legal action.

   We have a management team that claims to try and communicate with the communities, but takes no action on their issues; a management team that has shades of gray[6] in all their response to the legislature and outside regulators; and, a legislature that accepts such responses as “I do not know the answer to that question” and fails to request a follow-up response to important questions from county employees when they should

[6] This is discussed further in the section on Issues with the Governance and Failures of the Governance below.

know the answer. All of this is a failure of oversight by the legislature, just like Valley View.

2. Then there are the **user communities** that make up the other three components:
   a. Kiryas Joel, a community that has a growth rate that is progressing faster than the county's ability to satisfy their insatiable demand for water and wastewater capacity, is allowed to proceed despite the absence of the necessary capacity to support their growth. A community that has a sewer plant built with public funds but has no identified users so it does not have to send any of their wastewater to it so they can lease the full capacity to the OCSD's users. In my view, this forces the taxpayers to pay for this facility again.
   b. The Moodna group, who despite paying the entire capital cost of adding the 2.0 mgd upgrade to the existing 2.0 mgd OCSD facility are treated as non-members to the OCSD#1.
   c. The OCSD#1 members, Village of Harriman and Village of Monroe who, like the Moodna group, feel like outsiders in the whole process despite being members.

Issues with the current Governance:

The OCSD/Moodna Community leaders over the past 10 years, and probably longer, are **talked to** but not **listened to** when they have issues. They have no power to get their issues addressed and this has been shown on numerous occasions when:

1. Budgets were sent to the OCSD communities for their approval and when they vote no, the budget comes out without any follow up communications.

   In the past the County Administrator has sent as many as 3 budgets to the OCSD leaders over a period of 2 months and each one was different. Then when the final budget was approved by the legislature it did not resemble any of the three documents that were reviewed.
   a. I personally reviewed the budgets for about 3 years for Blooming Grove and provided a detailed list of issues in the documents I submitted, but no response was received.
   b. I witnessed a review of the OCSD Budget by the legislature and the only question that was asked is who pays for this? When they were told that this is a user fee based system the response was, "ok, let's vote." The real concern I had with this specific budget was that the county had added $1.5 million for a lease of the Kiryas Joel plant. In the prior year's budget the OCSD paid $0 and the year before that the district paid $336,000 for that lease but not one of the legislators

questioned the increase. Of course none of the legislators on the committee represented members of the OCSD/Moodna Communities.

2. I attended a 2013 legislative meeting when two OCSD Local Officials attended and there was a discussion about expanding the current plant. The legislators ask if the county had any communications with the local officials and although the local officials were pointed to and looked at they were not allowed to speak and NOT ONE legislator asked them a questions on how they felt about the expansion.

   The legislators say that the local officials are not cooperative because they do not meet with the County Administrator when he calls them. However, how many of you would go to a meeting if you knew that it was only so the Administrator could say that he met with the local elected officials, or you are used as props in public meetings? In fact, how many of the legislators have actually met with the local elected officials on a regular basis to understand their concerns? How many of you would have accepted a $1.5 million charge (Lease Agreement costs) without question if you were a member of the OCSD#1?

3. A number of years ago (about 2008) information was foiled from the county on the OCSD and access was given for that file. In it was an Inter-Municipal Agreement (IMA) covering 2005 to 2012 with Kiryas Joel. The thing that struck me was that the lease amounts in this agreement had dotted lines and the prices that were in the document had been handwritten and some were still blank. I requested a copy of that document but the one I received was typed and not the same document I had reviewed.

4. Without any input from the users, the County holds them responsible for all DEC fines[7], legal costs for both sides when the local officials take action against the county[8], and cost of expansions and repair of that facility. How else can we explain the 10% growth in cost per year? This management process is failing and there is no effective representation for the users under the current governance. This is a

[7] A notice of violation was sent to Mr. P. Hammond, Deputy Commissioner OCDPW (dated February 15, 2012) and it stated "… Failure to measure flow daily as noted above constitutes 34 individual violations of the SPDES permit and Article 7 of the NYS Environmental Conservation Law (ECL), which are subject to penalties of up to $37,500 per day per violation." This calculates out to be $1,275,000 per day. Mr. Hammond stated we are treated with fines of $151,000 per day but there is no evidence in the DEC files that this number has been communicated to the Orange County.

[8] An example of the users of the OCSD paying twice for the failures of the county government is the recent lawsuit brought by the towns when the county approved an amended FEIS. The users had to pay for the local official to challenge the Amended FEIS and they had to pay for the county to defend themselves.

clear case of "taxation without representation" and there does not appear to be any interest on the part of the County government or the County Legislature to change it.

This is not governance. It is a dictatorship over a community of users whose leaders have become helpless in their efforts to protect their communities. This governance must change. We need someone to be responsible and who can be held accountable to the users and the DEC if they fail. Today that does not exist and as a result, like Valley View and the Government Center; the OCSD is failing the communities it is suppose to serve. This problem can only be fixed by giving the OCSD users and their local elected official's control of their wastewater treatment plant and the entire infrastructure within that district.

Failures of the Governance with Regulators

I foiled the DEC records and was amazed with what was found in those documents. Reading these communications are further indications that a change in governance must occur or the consequences for the users will be costly and the impact on the down steam users catastrophic[9].

1. Mr. Hammond at a committee meeting told the County Legislators that the DEC had threatened to levy fines of $151,000 if concerns identified by them were not corrected. The 1st communication that I found in the DEC files concerning penalties was dated February 15, 2012. The DEC sent a letter to Commissioner Hammond concerning fines totaling $1,275,000 per day if the issues identified on January 11, 2012 were not corrected. [10] (See figure 1.0 below for details).

[9] There are a number of downstream municipalities that get their water from the Ramapo where the effluence flows into.

[10] Memo to Ms. Manju CHerian, PE of the DEC from Mr. Hammond dated February 22, 2012. Page 2, 1st paragraph. See figure 1.0 below for a copy of this memo.

Figure 1.0, Ms. Manju Cherian's memo concerning OCSD Violations.

New York State Department of Environmental Conservation
Division of Water, Region 3
100 Hillside Avenue – Suite 1W, White Plains, New York 10603-2860
Phone: (914) 428-2505 • FAX: (914) 428-0323
Website: www.dec.state.ny.us

Joseph Martens
Commissioner

NOTICE OF VIOLATION

February 15, 2012

Mr. Peter Hammond, Deputy Commissioner
Orange County Department of Public Works
Division of Environmental Facilities and Services
P.O. Box 637, Route 17M
Goshen, NY 10924

Re: **Annual Comprehensive Inspection**
Orange County Sewer District #1 Wastewater Treatment Plant
(V) Harriman
SPDES # NY 0027901

Dear Mr. Hammond:

On January 11, 2012 Department staff performed an inspection of the Orange County Sewer District #1 Wastewater Treatment Plant for the purpose of evaluating compliance with the State Pollution Discharge Elimination System (SPDES) Permit and Article 17 of the Environmental Conservation Law. As you will recall these provisions of State Law derive from the Clean Water Act, and compliance with these requirements is critical for protection of public health and environmental quality. The inspection has been designated unsatisfactory. Please refer to the attached copy of the inspection report and inspector comments for more detailed information. Immediate corrective action is necessary to address the issues identified below.

SPDES Permit Flow Limit

The flow limit in the SPDES permit is based on the design average flow of the treatment plant. The design average flow is the average of the daily volumes to be received for a continuous 12 month period. Proper measurement of design average flow is a critical part of proper wastewater treatment plant operation, and exceeding the design average flow may impact the treatment plant's compliance with State Law and treatment efficiency. The issues concerning flow at the facility are:

1) Flow was not measured on 14 days in January 2011; 4 days in February 2011; 3 days in March 2010; 10 days in July 2010; and 3 days in August 2010 (a total of 34 times). The facility's SPDES Permit requires flow to be measured daily. Please submit a proposal for a contingency or backup flow measuring system to ensure flows are measured daily in accordance with the SPDES permit requirements to the Department by March 9, 2012.

2) The facility has reached or exceeded 95% of its design flow on an annual average basis for calendar year 2011. Therefore, a Flow Management Plan will be required. *See* 6 NYCRR Part 750-2.9 (c). The Department's Albany office will contact you with additional detail regarding the submission of the Flow Management Plan.

3) On January 4, 2012, the Department requested information regarding the County's enforcement of its sewer use ordinance for flow. The Department requested receipt of this information by January 20, 2012, but has not received this information. Please submit the required enforcement information immediately.

4) Precipitation events have caused high flows at the plant which has contributed to SPDES permit effluent limit violations. A Notice of Violation for all SPDES permit effluent limit violations will be sent under separate letter.

Failure to measure flow daily as noted above constitutes 34 individual violations of the SPDES permit and Article 17 of the New York State Environmental Conservation Law (ECL), which are subject to penalties of up to $37,500 per day per violation.

Discharge Monitoring Reports

Discharge Monitoring Reports are official reports required to be submitted by a permittee to the Department. Each month, these submitted reports summarize the influent and effluent monitoring results obtained by the permittee over periods of time as specified in the SPDES permit. These reports, and the accuracy of their contents, are critical requirements of the SPDES Program. Further, failure to comply with the New York SPDES Permit, issued pursuant to the ECL, and authorized by the federal Clean Water Act, constitutes violations. The issues concerning the Discharge Monitoring Reports are:

1) There are errors with the number of excursions reported in the Discharge Monitoring Reports for April 2010, October 2010, February 2011, March 2011, April 2011, August 2011, September 2011, and October 2011.

2) There are errors with reporting average flow and loading values in the Discharge Monitoring Reports for March 2010, July 2010, August 2010, January 2011 and February 2011. As identified previously, flow was not measured on certain days of each of these months. Each day flow is not measured is considered an invalid sample as per the Discharge Monitoring Report Manual. Accordingly, the average flow for those months should be reported with a greater than (>) symbol and any calculated loading values using invalid flow samples should also be reported with a greater than symbol.

Please refer to the Discharge Monitoring Report Manual, amend the DMRs accordingly, and resubmit to the Department.

The Department anticipates your immediate compliance with the requirements of the SPDES permit. Compliance efforts by the County will be taken into consideration before Department staff makes a final determination on appropriate enforcement action for the violations.

If you have any questions, please contact me at the above number, ext. 357.

Sincerely,

Manju Cherian

Manju Cherian, P.E.
Environmental Engineer 2

cc: Thomas Rudolph, Regional Engineer (w/o att.)
Patrick Ferracane, Acting Regional Water Manager
John Parker, Regional Attorney (w/o att.)
Meredith Streeter, Bureau of Water Compliance (w/o att.)

2. The county budget pays Kiryas Joel $700,000 for wastewater capacity at the Kiryas Joel Plant. In a letter Dated February 22, 2012 Mr. Hammond told the DEC that the Kiryas Joel Wastewater treatment plant is "…operating at levels in the 400,000 gpd range", this is 570,000 gpd below the 970,000 gpd permitted treatment capacity.

   In addition, this memo states that the primary reasons for this shortfall are "…unprecedented discharges from the KJ meat market (chicken processing plant) and the inability of the Village to perform capital repairs that both the Department (DEC) and County have sought over **the last several years**."[11] (See Figure 2.0 below)

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Figure 2.0, Mr. Peter Hammond's response to Ms. Manju Cherian's memo concerning OCSD Violations.

ORANGE COUNTY
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENVIRONMENTAL FACILITIES & SERVICES

Edward A. Diana
County Executive

Charles W. Lee, P.E.
Commissioner

Peter S. Hammond
Deputy Commissioner

February 22, 2012

Ms. Manju Cherian, P.E.
Environmental Engineer 2
New York State Department of Environmental Conservation
Division of Water, Region 3
100 Hillside Avenue – Suite 1W
White Plains, NY 10603-2860

RECEIVED

RE: **Annual Comprehensive Inspection**
Orange County Sewer District #1 Wastewater Treatment Plant
(V) Harriman
SPDES # NY 0027901

Dear Ms. Cherian:

Please accept this letter as an initial response to your Notice of Violation correspondence of February 15, 2012. A more detailed response is being compiled by Camo Pollution Control, Inc.

Orange County and the Orange County Sewer District #1 (OCSD#1) strive to comply with all aspects of State Law and regulations regarding the operation of the wastewater treatment plant located in Harriman, N.Y. However, when Acts of God deposit 85 inches of rain in one (1) year on the plant, it is difficult to handle so many wet weather events. Fortunately we had our Wet Weather Protocol (Protocol) which was engaged. This Protocol was previously prepared and submitted to the Department, without any comment from the Department regarding said Protocol.

According to an article published in the Times Herald-Record on September 8, 2011; "the State Department of Environmental Conservation said Tuesday that at least 52 municipalities in the mid-Hudson Valley had reported spills of raw sewage in the wake of Hurricane Irene… The collection systems were overwhelmed said DEC regional engineer Tom Rudolph".

Hurricanes Irene and Lee produced rainfall amounts that combined for the wettest August/September in 117 years and contributed to overall precipitation for January through September that was the wettest period ON RECORD for the Northeast according to the National Oceanographic and Atmospheric Administration. An Act of God is not something you can prevent, but we did prepare for that eventuality and by engaging our Wet Weather Protocol, even with 20 inches of rain in August, we did not allow raw sewage to discharge into the Ramapo River.

The 2011 flow levels at Harriman were not only impacted by the unprecedented levels of rainfall, but also from the inability of the Kiryas Joel wastewater treatment facility to operate at full

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capacity. This is an issue that both the County and the Department have been working on with the Village of Kiryas Joel (Village) for years. Unfortunately, the KJ plant is still only operating at levels in the 400,000 gpd range. Contributing factors to this operating range are the unprecedented discharges from the KJ meat market and the inability of the Village to perform capital repairs both the Department and County have sought over the last several years. This operating level is below the design rate by close to 500,000 gpd. Had this capacity been available, the Harriman plant would have maintained a continuous 12 month average well below 6.0 MGD. The sixfold increase of the discharge from the KJ Meat processing facility producing 300,000 gpd was not approved by either the Department, or OCSD#1, yet this flow continues to displace processing capacity of the KJ POTW and subsequently the available capacity at Harriman.

That being said we understand the need to plan for the future and toward that end we will be issuing a request for proposals this year for the development of a Facility Plan for OCSD#1 to determine the best method to add treatment capacity for the district.

The other area of concern raised in your January 4, 2012 letter pertains to infiltration and inflow (I&I). OCSD#1's road crew inspects approximately 17 miles of sewer main every year and repairs any deficiencies noted in the lines. These inspections are only conducted within the district due to constraints of time and funds.

We recognize the potential that the collection systems of the out-of-district users may also have I&I issues. To that end we have undertaken a sewer consolidation project partially funded by the State of New York Department of State under their Local Government Efficiency Program. One of the project's objectives is to bring all of the current contract users into the district to streamline governance and coordinate system operations. We are working with each municipality to identify operational issues that need to be addressed in their respective collection systems. It is our belief that working together cooperatively we can mutually and economically address and correct any deficiencies, thereby maximizing the use of scarce funds available for such efforts.

Orange County and OCSD#1 are committed to protecting the environment, providing quality service to its customers and working through the myriad issues from I&I, to capital improvements and compliance with our Industrial Pretreatment Program with the assistance of the Department as we move forward.

Best regards,

Peter S. Hammond
Deputy Commissioner

Cc: Charles W. Lee, Commissioner DPW
David Darwin, OC Law Dept.
Anthony Griffin P.E., OC-DPW Div of EF&S
Thomas Rudolph, NYSDEC Regional Engineer
Patrick Ferracane, NYSDEC Acting Regional Water Engineer
John Parker, NYSDEC Regional Attorney
Meredith Streeter, NYSDEC Bureau of Water Compliance
Michael P. Tremper, CAMO Pollution Control, Inc.
Douglas McKenna, Chief, USEPA Water Compliance Branch
David Bernstein, USEPA Water Compliance Branch
Virginia Wong, USEPA Water Compliance Branch
File

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The Wastewater Treatment Plant Lease Renewal[12] filed on December 18, 2009 states that from 2005 to 2012 it will cost the OCSD/Moodna users $700,000 annually for 970,000 gpd. It further states that:

a. Part of these payments will be held in escrow and can only be used to "… pay for the cost of making capital repairs and Improvements to the village plant."
b. "The Village shall be responsible for equipment replacement and repairs … and capital improvements that are operationally necessary to maintain the Plant in good and efficient working order and capable of treating 970,000 mgd…" it goes on to identify specific repairs that must be done.

The above raises the following questions:

a. Why are the users of the OCSD paying Kiryas Joel $700,000 for 970,000 gpd as agreed to within the IMA, when only 400,000 gpd are available. Mr. Hammond's statement's to the DEC suggest that Kiryas Joel owes the users of the OCSD/Moodna Communities a refund for over payments over the past 9 years beginning in 2005 and the amount should be at least $3.7 million based on my calculations[13].
b. Why is the chicken processing plant being referred to as Kiryas Joel meat market and does this designation have a different meaning to the DEC/EPA than chicken processing plant?
c. When the money was paid to Kiryas Joel was it put into the escrow accounts as required by the IMA? If it has, why hasn't it been spent to fix the problems created by the chicken plant waste? Do we need to verify that it was put in escrow and/or withdrawn for other purposes?

[12] This document can be obtained from the Mr. Hammond's EF&S department. If it is not available I will be happy to provide a copy to anyone interested in reading it. Also, this lease is scheduled to be renewed this year so it is time for the legislature to make sure they know what is in that document before it is signed.

[13] This is based on the fact that at $700,000 for 970,000 gallons per day the cost per gallon is $.73 per gallon. Multiply 570,000 gallons per day by $.73 will give us $411,340. Multiplied by 9 years is $3.7 million.

3. Infiltration and inflow (I & I) are considered to be serious issues by the DEC and Mr. Hammond stated in one of his letters to the DEC that "… we inspect 17 miles of sewer mains every year and repair any deficiencies." However, it further stated that "…these inspections are only conducted within the district due to constraints of time and funds." [14] The capital plan shows that in 2002 project #826 for I & I was funded for $6.2 million and only $2 million of those funds have been spent as of the Orange County 2013 budget. This data does not support what Mr. Hammond told the DEC because there is funding and time should be made for this important work on the OCSD.

   Another concern is that if I & I capital can only to be spent on the infrastructure within the district limits are all of the user communities paying for this expense, including the Moodna Communities? Since much of the infrastructure is not used by the Moodna Communities these costs should be separated and allocated only to those who benefit - the members of the OCSD #1.

   The DEC is pressing very hard for the County to include ALL of the OCSD/Moodna users as members of that district and to take over the responsibility for ALL I & I management.

   Do the legislators know that in the memo written by Mr. Hammond to the DEC he stated that: "We recognize the potential that the collection systems of the out-of-district users may also have I & I issues. To that end we have undertaken a sewer consolidation project partially funded by the state of New our Department of State under the Local Government Efficiency Program. One of the project objectives is to **bring all of the current contract users into the district to streamline governance and coordinate system operations. We are working with the municipalities to identify operational issues that need to be addressed in their respective collection systems."**[15]

4. On March 30, 2012 the DEC requested to meet with the county to discuss their violations. That letter listed 67 violations and stated that they are subject to penalties of up to $37,500 each. This is an additional $2.5 million in penalties on top of the 34 violations for failure to monitor daily flows which they were told would cost $1.2 million. Total exposure for the users of the OCSD #1 is now at $3.7 million. (See Figure 3.0 below)

[14] Annual Comprehensive Inspection memo from Ms. Manju Cherian, PE of the DEC to Mr. Peter Hammond, subject Notice of Violation. Page 2, second from the last paragraph. This memo can be found in Appendix F, A below.

[15] MR. Hammond's response to Ms. Manju Cherian, PE of the DEC concerning the Notice of Violation. This memo can be found in Figure 2.0 above. Page 2, second from the last paragraph. This memo can also ibe found in Appendix F, B below. Key words are highlighted for emphasis. See figure 2.0, page 2 above.

Figure 2.0, Mr. Peter Hammond's response to Ms. Manju Cherian's memo concerning OCSD Violations.

New York State Department of Environmental Conservation
Division of Water , Region 3
100 Hillside Avenue – Suite 1W, White Plains, New York 10603-2860
Phone: (914) 428-2505 • Fax: (914) 428-0323
Website: www.dec.ny.gov

Joseph Martens
Commissioner

NOTICE OF VIOLATION

March 30, 2012

Peter Hammond, Deputy Commissioner
Orange County Department of Public Works
Division of Environmental Facilities & Services
2455-2459 Route 17M, P.O. Box 637
Goshen, NY 10924-0637

Re: Orange County Sewer District #1 Wastewater Treatment Plant
Village of Harriman
SPDES Permit # NY 0027901

Dear Deputy Commissioner:

I am writing regarding the Orange County Sewer District #1 (OCSD#1) Wastewater Treatment Plant in Harriman, New York and to bring to your attention numerous and significant violations of the Department's SPDES Permit for the facility. The record in this case indicates that there are not only numerous permit violations by exceeding Clean Water Act discharge standards, but also lapses in the timely and properly conducting tests on its operations. Clean water and Clean Water Act compliance are significant priorities of the Department of Environmental Conservation, and the violations identified in this NOTICE must be properly and appropriately addressed immediately.

Department staff has reviewed the documents provided by Sewer District #1, known as Discharge Monitoring Reports, for the time period between January 1, 2010 to December 31, 2011. The Sewer District records indicate that during this time, the OCSD#1 Wastewater Treatment Plant exceeded its SPDES Permit effluent limits a total of 67 times, including:

- 4 times for $CBOD_5$ daily maximum loading (lbs/day);
- 1 time for $CBOD_5$ daily maximum concentration (mg/l);
- 2 times for $CBOD_5$ minimum percent removal;
- 9 times for Ultimate Oxygen Demand loading (lbs/day);
- 10 times for Ultimate Oxygen Demand concentration (mg/l);
- 3 times for Dissolved Oxygen daily minimum;
- 2 times for Total Suspended Solids minimum percent removal;
- 4 times for Total Suspended Solids loading (lbs/day);
- 1 time for Settleable Solids daily maximum;
- 7 times for Fecal Coliform 7 day geometric mean;
- 2 times for Fecal Coliform 30 day geometric mean;
- 3 times for Total Ammonia Nitrogen (as NH3) monthly average concentration; and
- 19 times for Flow monthly average.

The SPDES Permit requires the Sewer District perform weekly sampling for fecal coliform, UOD and $CBOD_5$. These requirements have not been consistently met as required. One weekly sample was not performed for fecal coliform, UOD and $CBOD_5$ in February 2011 and consequently represent 3 additional violations of the SPDES permit.

PLEASE BE ADVISED that the numerous and repeated violations by the Sewer District subject Orange County to EPA's Watch List for significant violations because at least 25 effluent violations in a 2 year period have been reported to the Department. EPA Watch List facilities, because they are significant violators of environmental laws, require the Department to provide a timely and appropriate response to the Agency regarding steps to be taken to bring the facility into full compliance.

PLEASE BE ADVISED that the Sewer District is required to submit to the Department a Flow Management Plan for the facility as required by the February 15, 2012 Notice of Violation issued by the Department to the Sewer District. Please find attached a copy of the February 2012 Notice of Violation for your convenience.

PLEASE BE FURTHER ADVISED that these violations of the SPDES Permit constitute violations of Article 17 of the Environmental Conservation Law and are subject to penalties of up to $37,500 per violation per day. The Department anticipates your compliance with the SPDES Permit and the requirements of the Environmental Conservation Law.

Orange County Sewer District #1 officials and representatives are directed at 1:00 p.m. on April 11, 2012 to attend a technical meeting in the Department's Region 3 Headquarters in New Paltz. At that time, Department technical staff will discuss the violations at the OCSD#1 Wastewater Treatment Plant and Department staff expects that the Sewer District / Orange County will be prepared to discuss its plans to address the violations and to bring the facility into compliance with the Environmental Conservation Law. Thank you in advance for bringing the facility into compliance with the SPDES Permit for the protection of New York's water. Please contact me at (914) 428-2505 ext. 357 if you have any questions.

Sincerely,

Manju Cherian

Manju Cherian, P.E.
Environmental Engineer 2

cc: Thomas Rudolph, Regional Engineer
Patrick Ferracane, Regional Water Manager
John Parker, Regional Attorney
Meredith Streeter, Bureau of Water Compliance

5. On April 11, 2012 Mr. Hammond responded and stated the county employees were unavailable to meet. This got a response from the DEC on April 17, 2012 that clearly indicated they were not happy and rescheduled the meeting on April 26, 2012. In closing the DEC stated that "… this is the second and final attempt to schedule a technical meeting with representatives of the county regarding the Department's [DEC] March 30, 2012 Notice of Violation." They then advised that if the county fails to meet with them on that date they will inform them of the DEC's decision on whether to pursue further enforcement action. (See figure 3.0 below).

Figure 3.0, Ms. Manju Cherian of the DEC responds to Mr. Peter Hammond's concerning OCSD Officials unavailability to meet with the DEC.

New York State Department of Environmental Conservation
Division of Water, Region 3
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Joseph Martens
Commissioner

CMRRR: 7010 0780 000 9701 9669

SECOND NOTICE OF TECHNICAL MEETING
NOTICE OF VIOLATION - MARCH 30, 2012

April 17, 2012

Peter Hammond, Deputy Commissioner
Orange County Department of Public Works
Division of Environmental Facilities & Services
2455-2459 Route 17M, P.O. Box 637
Goshen, NY 10924-0637

Re: Orange County Sewer District #1 Wastewater Treatment Plant
March 30, 2012 Notice of Violation
SPDES Permit # NY 0027901
Village of Harriman

Dear Deputy Commissioner:

I am writing in response to your letter dated April 9, 2012, expressing the "unavailability" of officials of Orange County Sewer District #1 to attend the meeting called by Department staff for April 11 to address the technical issues that are considered violations of the facility's SPDES Permit. The repeated pattern of the Sewer District's violations is significant and has placed Orange County on the EPA's Watch List. On March 30, 2012, the Department's Notice of Violation identified twenty-four months of violations of the facility's SPDES Permit. Please find attached the Notice of Violation. EPA requires the Department to provide the Agency with a timely and appropriate response regarding steps to be taken to bring the facility into full compliance.

The Department technical staff seeks to work with the County to discuss and address the violations at the OCSD#1 Wastewater Treatment Plant. Department staff expects Orange County representatives to be able to discuss the facility that the County is legally obligated to operated and maintain. Department staff also expects that the County will address the violations and the plans it proposes to bring the facility into compliance with the Environmental Conservation Law.

Therefore, the Department has rescheduled the technical compliance meeting for April 26, 2012 at 1:00 PM in the Region 3 White Plains office.

PLEASE BE ADVISED that this is the Department's second and final attempt to schedule a technical meeting with representatives of the County regarding the Department's March 30, 2012 Notice of Violation. If representatives of the County fail to attend, Department staff will be left with no option but to determine that in the ensuing month since the Notice of Violation was issued that the County does not have additional information to present to the Department regarding the identified violations. All relevant information will inform the Department's decision on whether to pursue further enforcement action.

If you have any questions, please call me at (914) 428-2505 ext. 369. Your cooperation in this matter is anticipated.

Sincerely,

Thomas Rudolph, P.E.
Regional Engineer

cc: Willie Janeway, Regional Director
John Parker, Regional Attorney
Patrick Ferracane, Acting Regional Water Manager

6. On April 27, 2012 the DEC sent a memo to the Orange County Dept of EF/S, OCSD and advised them that "The annual average flow of the facility exceeded the 95% of the design flow. **In accordance with the 7 NYCRR Part 750-2.9©(1) you must prepare and submit a flow management plan no later than August 1, 2012."** This was a follow up memo to the one initial sent on February 15, 2012. (See Figure1.0 above.)

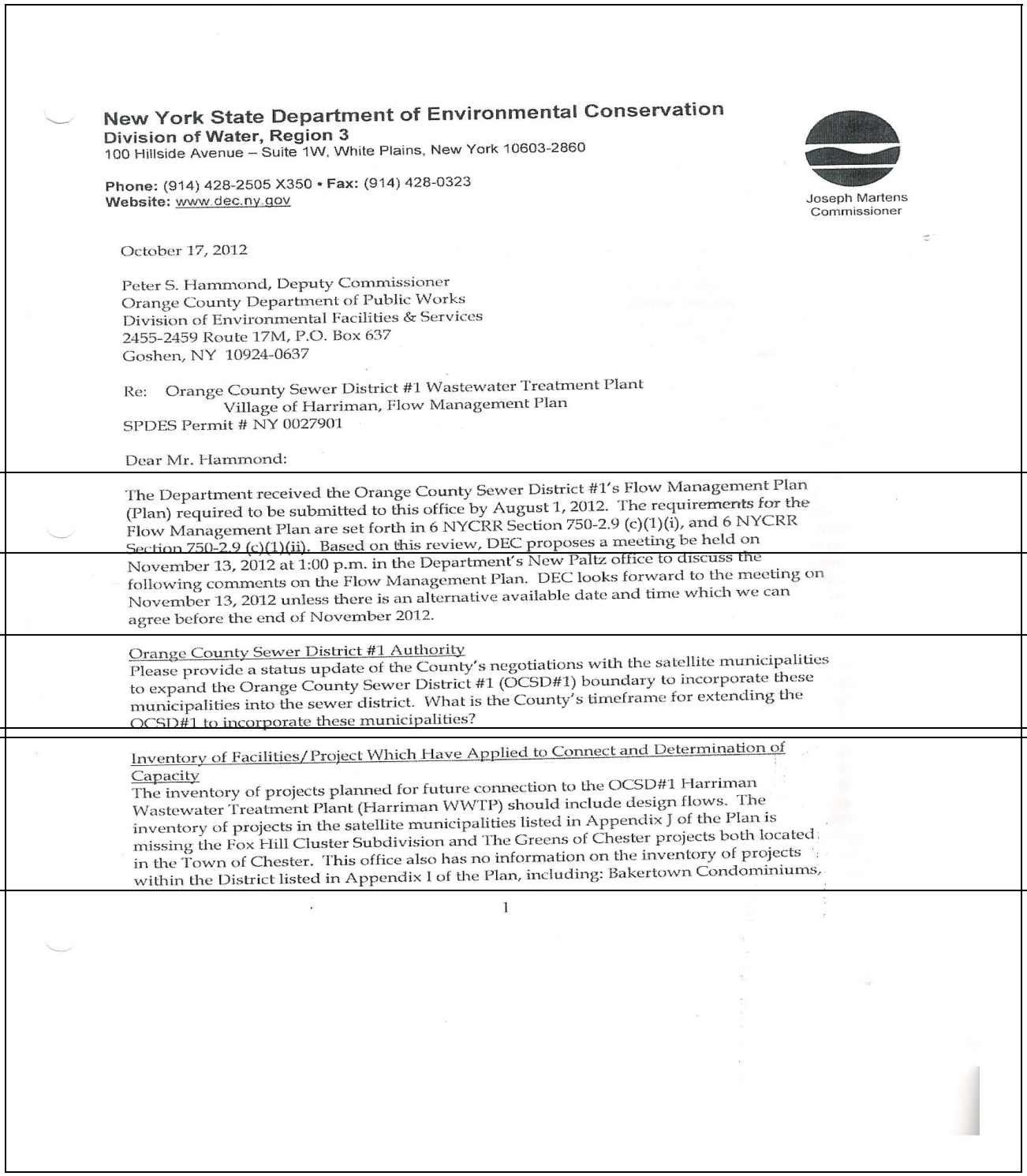
   On October 17, 2012 the DEC again requested tjat "**In accordance with the 7 NYCRR Part 750-2.9©(1) you must prepare and submit a flow management plan no later than August 1, 2012."**[16]

   sent a memo to Mr. Hammond and advised him that they had received the OCSD Flow Management Plan and requested a meeting on November 13, 2012 to discuss the points listed and suggested if that date was not good it could be changed but had to be held before the end of November. Some of the points it wanted to discuss were:

   a. "Provide a status of the County's negotiations with the satellite municipalities to expand the OCSD boundary to incorporate these municipalities into the sewer district."
   b. Inventory of projects planned for future connection to the OCSD#1 Harriman Wastewater Treatment Plant (Harriman WWP) should include design flows. It then listed 10 projects and asked if they would need sewer extension approval by the DEC and when were they going to be needed.
   c. Advised that the bases for Harriman WWTP capability for additional connections are insufficient and they request additional information.
   d. Challenged the inclusion of the Kiryas Joel wastewater capacity as part of the OCSD capacity because it stated that there is no link between these two facilities.
   e. **Advised the County that Kiryas Joel has applied for a permit to expand its water taking from 1.9 mgpd to 2.54 mgpd and ask how does the County plan to accout for the additional water taking from the NYC DEP aqueduct and the resulting wastewater**. (See Figure 4.0 below for more details.)

[16] See figure 4.0 below.

Figure 4.0, DEC memo to Mr. Peter Hammond about issues with the OCSD, Kiryas Joel requests for a permit to expand its water taking from 1.9 to 2.54 mgd, link to the aqueduct, etc.



New York State Department of Environmental Conservation
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Joseph Martens
Commissioner

October 17, 2012

Peter S. Hammond, Deputy Commissioner
Orange County Department of Public Works
Division of Environmental Facilities & Services
2455-2459 Route 17M, P.O. Box 637
Goshen, NY 10924-0637

Re: Orange County Sewer District #1 Wastewater Treatment Plant
Village of Harriman, Flow Management Plan
SPDES Permit # NY 0027901

Dear Mr. Hammond:

The Department received the Orange County Sewer District #1's Flow Management Plan (Plan) required to be submitted to this office by August 1, 2012. The requirements for the Flow Management Plan are set forth in 6 NYCRR Section 750-2.9 (c)(1)(i), and 6 NYCRR Section 750-2.9 (c)(1)(ii). Based on this review, DEC proposes a meeting be held on November 13, 2012 at 1:00 p.m. in the Department's New Paltz office to discuss the following comments on the Flow Management Plan. DEC looks forward to the meeting on November 13, 2012 unless there is an alternative available date and time which we can agree before the end of November 2012.

Orange County Sewer District #1 Authority
Please provide a status update of the County's negotiations with the satellite municipalities to expand the Orange County Sewer District #1 (OCSD#1) boundary to incorporate these municipalities into the sewer district. What is the County's timeframe for extending the OCSD#1 to incorporate these municipalities?

Inventory of Facilities/ Project Which Have Applied to Connect and Determination of Capacity
The inventory of projects planned for future connection to the OCSD#1 Harriman Wastewater Treatment Plant (Harriman WWTP) should include design flows. The inventory of projects in the satellite municipalities listed in Appendix J of the Plan is missing the Fox Hill Cluster Subdivision and The Greens of Chester projects both located in the Town of Chester. This office also has no information on the inventory of projects within the District listed in Appendix I of the Plan, including: Bakertown Condominiums,

1

Hidden Creek Condominiums, Shea Meadows, Ekstein, Camelot Manor, Village View Estates, Orchard Development, and Bald Hill Estates. Do these projects need sewer extension approval by this Department and what is the timeframe for connection?

The determination of whether there is capacity at the Harriman WWTP for additional connections is insufficient. The Plan reports improved operations at several significant users within contributing satellite municipalities, ongoing infiltration and inflow reduction by the OCSD#1, and similar infiltration and inflow reductions in satellite municipalities during 2011. Other than the improvements at the Village of Kiryas Joel Wastewater Treatment Plant (Kiryas Joel WWTP), there was no information provided in the Plan on the improvements at several significant users within the contributing satellite municipalities and no information provided on infiltration and inflow reductions in the satellite municipalities. This information is requested.

Based on the monthly discharge monitoring reports for the Kiryas Joel WWTP and the Harriman WWTP, it appears up to 300,000 gpd less domestic flow may have been received by the Harriman WWTP during the last few months, due to the improvements at the Kiryas Joel WWTP and Kiryas Joel Poultry facility. Please provide flow metering data for the Kiryas Joel WWTP bypass to the Harriman WWTP.

The Kiryas Joel WWTP is owned by the Village of Kiryas Joel and authorized by a separate SPDES permit. Under a lease agreement between the Village of Kiryas Joel and OCSD #1, the County leases a portion of the plant's capacity from the Village. Furthermore, there is no sanitary sewer connection from other District users to the Village of Kiryas Joel WWTP. Please clarify why the Plan includes a trend projection that is based on the combined treatment capacity of the Harriman WWTP and Kiryas Joel WWTP to determine whether there is adequate wastewater capacity at the Harriman WWTP. The County must provide a sufficient determination of whether there is adequate capacity at the Harriman WWTP based on flows, current population, and current growth rates in the OCSD#1 and satellite municipalities.

Please also be aware that the Village of Kiryas Joel has applied to the Department for a permit modification to increase their water taking from 1.9 MGD to 2.54 MGD. It is also understood that the Village is pursuing a connection to the NYC DEP aqueduct. How does the County plan to account for this additional water taking and resulting wastewater?

Schedule of Implementation of Flow Reduction Measures

According to the Orange County Department of Public Works 2011 flow monitoring table, dated 12/31/11, OCSD#1 exceeded its allocated flow of 3.665 MGD. Therefore, please document whether infiltration and inflow has been investigated in all parts of OCSD#1; identify how much investigative work has been completed; and identify by what method that work has been completed within each municipal boundary, including the Village of Harriman, Village of Kiryas Joel, Village of Monroe and the portion of the Town of Monroe within the Ramapo Basin. Additionally, please provide the locations of the manhole remediation projects and the trenchless repairs of sewer main defects within OCSD#1.

Please also include in the schedule of implementation what activities will occur after the infiltration and inflow inspections of the Round Lake Interceptor and Brooklyn interceptor. Please also provide information on the estimated amount of infiltration and inflow that the remediation projects will eliminate.

According to the Orange County Department of Public Works 2011 flow monitoring table, dated 12/31/11, the Village of Chester and Village of Woodbury exceeded their allocated flow in 2011. Although the Town of Chester and Village of South Blooming Grove did not exceed the allocated flows, the table clearly shows peak flows occurred during the wet weather months, which corresponded to the months when peak flows occurred at the Harriman WWTP. Therefore, it appears that there are opportunities for flow reduction measures for the Village of Chester, Town of Chester, Town of Blooming Grove, and Village of South Blooming Grove. Repairing infiltration and inflow issues upon discovery does not equate to a flow management plan. These municipalities must have an active, ongoing plan to investigate the sanitary sewer system for infiltration and inflow, and the County must enforce these plans for overall flow management. Further, the Village of Woodbury may need to increase its efforts to assess and eliminate infiltration and inflow in its collection system in a shorter timeframe than the 10 years they have committed to.

Map Delineating the Service Area
Please provide updated sewer maps including all manholes and pump stations for the Town of Blooming Grove, Village of South Blooming Grove, Town/Village of Woodbury, the Village of Chester, Town of Chester and a portion of the Town of Monroe.

Reporting Information and Submission Schedule
The description of information that will be reported during implementation of the Plan and schedule for such reporting is insufficient because it does not include any of the proposed items to be implemented by the Plan.

Water Conservation Measures
The focus of the Plan appears to solely be infiltration and inflow removal. Water conservation measures are insufficient and should be significant because they can help to stabilize influent flows below design flows.

Reduction of Infiltration/Inflow
Please provide details of the OCSD#1 seven (7) year preventative maintenance cycle of the sewer system. Pump Station flow data should be utilized by each satellite municipality to determine the significance of infiltration and inflow during wet weather events. OCSD#1 has not provided sufficient assurance that infiltration and inflow is actively being pursued and eliminated in the satellite municipalities, except for the Village of Woodbury. The MBJOMC has not provided a detailed plan or schedule for investigating excess flows into the sanitary sewer system.

Prevention of Future Sources of Infiltration/Inflow
Please explain how the reconstruction of the Village of South Blooming Grove pump

station helps to satisfy the requirement of preventing future sources of infiltration and inflow other than monitoring.

Maximizing Capacity
The section of the Plan regarding maximizing sewer system capacity did not include a plan for cleaning and/or lining the sewer system.

Capital Improvements
Please provide specific information regarding the issuance of the Request For Proposals for the facility planning process for an expansion of the Harriman WWTP. From the data available, this would appear to be an especially important component of the long term plan.

PLEASE BE ADVISED that the violations cited in the Department's February 15, 2012 and March 30, 2012 Notice of Violation letters are being referred to the Office of General Counsel for appropriate enforcement action. Those Notices of Violation are attached for your reference.

The Department anticipates your compliance with the current SPDES Permit NY 0027901 and the requirements of the Environmental Conservation Law. Please contact me at (914) 428-2505 ext. 350 should you have any questions.

Sincerely,

S. Karimipour

Shohreh Karimipour, P.E.
Regional Water Engineer

cc: Thomas Rudolph, Regional Engineer
Regional Attorney
Charles W. Lee, Orange County Department of Public Works
Village of Harriman (w/o att.)
Village of Kiryas Joel (w/o att.)
Village of Monroe (w/o att.)
Town of Monroe (w/o att.)
Village of Woodbury (w/o att.)
Town of Woodbury (w/o att.)
Village of South Blooming Grove (w/o att.)
Town of Blooming Grove (w/o att.)
Village of Chester (w/o att.)
Town of Chester (w/o att.)
Moodna Joint Operations & Maintenance Commission (w/o att.)

Failures of the Governance with Kiryas Joel

I also foiled information from the DEC on the Kiryas Joel wastewater treatment plant.

The memo I was given is in figure 6.0 below. It has to do with the Industrial Pretreatment Plan and the need for the KJ Facility to report on the handling of the Chicken Processing plant that uses 300,000 gpd in mid-2012. I think the letter speaks for itself.

GERALD N. JACOBOWITZ
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JOHN H. THOMAS JR.
GERALD A. LENNON
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HOWARD PROTTER
DONALD G. NICHOL
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**OF COUNSEL

March 12, 2011

MAR 16 2011

Hon. Peter Hammond, Deputy Commissioner
OC DEF&S
2455-2459 Route 17M, PO Box 637
Goshen, NY 10924-0637

Re: Village Drinking Water Filtration Plant
Our File No. 652-326

Dear Mr. Hammond:

I trust this letter finds you well. This letter responds to your correspondence of February 9, 2011, purported to be an administrative order.

The Village's position concerning its drinking water filtration plant is well known and established. The water filtration plant has sent its backwash through the public sewers without charge since the early 1970's, before even the establishment of the Orange County Sewer District No. 1. Any argument to the contrary is barred by the doctrine of *res judicata* has such argument has been articulated by the Orange County Attorney's Office in other matters. Further argument is also barred by the statute of limitations.

We note that the Village's drinking water plant is not an industrial use, nor would it require an industrial permit. The Village's water plant is a customary accessory of the Village's governmental service of providing drinking water to its residents. The water treatment plant does not conduct any trade, business, production, or manufacture as is the definitional characteristic on an industry. It would be irrational to define something as what it is not merely in order to regulate it.

It should be further noted that the Village of Kiryas Joel is authorized by New York State Village Law Article 14 to establish a sewer system. The Village has established such a system and maintains the appropriate SPDES permit. The Village of Kiryas Joel drinking water plant is tributary to the Village's wastewater treatment plant.

Primary jurisdiction with respect to the regulation of wastewater discharge in the Village of Kiryas Joel is vested with the Village of Kiryas Joel. The Village has a sewer use and charge local law set forth in Chapter 125 of the Code of the Village of Kiryas Joel, New York. The drinking water plant is in full compliance with the Village of Kiryas Joel Sewer Use Law. The County's attempts to supercede that jurisdiction are improper.

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We note that the County's Sewer Use and Charge Local Law is defective and unconstitutional. We advised you in detail of these deficiencies when comments were requested on the draft local law. However, our comments were ignored and we take the County's failure to respond to the Village regarding such defects as an admission of the same.

The Village Sewer Use Law does not require the Village's drinking water filtration plant to have any industrial pretreatment permit. The Village has never applied for, nor accepted, any permit for the water plant other than those permits required by the state of New York.

The Village's water filtration plant is owned and operated by the Village of Kiryas Joel. Its backwash flow does not leave Village owned or controlled property until a point at the southeastern edge of the Village at or about the location of the Village's wastewater pump station where flows are diverted to the Village's wastewater plant. At this discharge point it is without a doubt that the Village's discharge not only meets the applicable standards of the Village Code but the non-jurisdictional, non-applicable standards of the County's Sewer Use Law.

The Village's discharge of backwash water to the public sewers was established as a contractual right which existed prior to the establishment of the Orange County Sewer District No. 1. We note that the United States Constitution's "contract clause" forbids the government from impairing contract rights. Thus, any attempt to limit such contract rights by regulation would be unconstitutional. While the County would have a constitutional right to condemn the Village's discharge rights it would have to have a public purpose for doing so and pay just compensation to the Village which would clearly amount into the millions of dollars. Therefore, it is clear that the County may not attempt to do by regulation that which it otherwise may not do pursuant to law. An attempt to do so in an unconstitutional manner would make the County liable to the Village for damages pursuant to 42 USC § 1983, commonly known as the Civil Rights Act, plus attorney's fees.

Finally, we note that there is no evidence that the Village has actually violated any particular standard of the County Sewer Use Law. And even were there exceedence of the County limit there is no evidence that it would have the potential to adversely affect the wastewater treatment at the County's treatment plant or cause the plant to violate any effluent standard or requirement that the County might be subject to. An undemonstrated and unsupported potential to violate a standard is inadequate reason for requiring permitting when it is clear that all other indicia are inapplicable.

EPA Inspectors who visited the Village's wastewater treatment plant indicated to Village personnel that many other public wastewater treatment plants have far lower standards for iron and other potential constituents of the backwash water, which standards the Village backwash would easily meet just as it meets the Village's standards for such backwash. It seems clear to us that the County's standard was set artificially high to attempt to regulate to do by regulation what the County is not permitted to do otherwise by law, that is to interfere with the Village's discharge rights for its backwash flows. Therefore, we suggest that the Orange County Sewer District No. 1 standards for backwash be adjusted to appropriate and proper levels consistent with the County's SPDES permit.

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I hope this correspondence puts an end to any further issues related to the Village's discharge rights. Thank you for your courtesy and cooperation in attending to this matter.

Very truly yours,

Donald G. Nichol

DGN:ljs

cc: Hon. Mayor and Village Board
David Darwin, Esq., County Attorney

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Recommendation:

The DEC in many of its communications has strongly stated that ALL communities that use the OCSD #1 be brought into the OCSD #1 as members and that all of the infrastructure used to bring the wastewater to the OCSD be managed by them. However, it appears that this is slow to happen and the county is not discussing this in any of the meetings that I have attended.

In order to do this we need to change how this facility is managed and we need to return control/management of that facility to the user communities under a Board of Commissioners just like Rockland County has to manage their facility.

To implement this recommendation the Local Officials should meet to study this facility and discuss the future governance and determine what needs to be done to prepare for this change.

Included in this discussion is the question of ".should the Kiryas Joel WWTP be merged into the OCSD#1"? Since the KJ WWTP is currently being paid for by the users of the OCSD and the OCSD user community is currently owed $4.0 million for overcharges under the current lease and the KJ WWTP has no assigned user population for their facility this capacity should be merged into the OCSD as one district serving all constituents within the district.

Capital Plan:

The Capital Plan history[17] shows a high rate of expenditures for a facility that had a $26 million expansion that was completed in 2009.

This facility from 2002 to 2013 has capital projects of over $41 million that are Approved and Authorized (with $31 million having been spent). In the Proposed project list there is an additional $53 million planned. If the $94 million is bonded for 25 years at 3%, these bonds would cost well over $134 million.

Some other facts that everyone needs to understand are:

1. The amount of Federal/State aid received on the $31 million of the $41 million of Approved and Authorized projects from 2003 and 2012 is $1.2 million, leaving the majority of this expense for the users of that facility.
2. The remaining $10 million of the Approved and Authorized projects includes such projects as Infiltration and Inflow (I & I) Reduction for $6.2 million; but over the 10 years since it was approved, only $2 million has been spent. Making one wonder what this project was for? The history above shows that there is a strong interest in the DEC to control I & I but very little action on the County level to seriously address this issue.
3. From 2003 to 2012 the Capital Plan proposes an additional $17 million for new sewer main extensions yet none of these capital projects have been approved and authorized that I could find. Also, if it is to be used to build a new plant with a capacity of 3 mgd, it will require much more given that it cost $24 million expand the OCSD by $1.5 mgd. Thus raising the question as to what these extensions are for and who is paying for them?

The Capital plan is approved with very little detail on what these projects are for and with no input from the local elected officials. Some of these projects are 7 to 10 years old and very little of the funds have been spent thus far bringing into question why was it approved for the amount that it was authorized for if the funds are not being spent after 10 years.

Capital Plan Concerns

The Legislature recently approved Proposed Project #125 for $865,000 - equipment replacement, yet it already approved Proposed Project #118 from 2011 for $400,000 and none of that has been reported spent in the 2013 Capital Plan document (See Approved and Authorized Project #842.[18]). This brings the total Approved and Authorized Capital Plan for

[17] See Appendix A below for Capital Plan Detail from 2002 to 2013.

[18] This project moved to Environmental Facilities Services in the 2013 Capital Plan as did all of the Sewer projects.

equipment replacement to $1.3 million for backup equipment. The question is what is the backup equipment for and who will use it? Could it be to address the issues with the Kiryas Joel Plant?

Recently the legislature approved Proposed Project #125 for $865,000 and thus added to Project #842 $400,000 that was already approved and authorized, for a total of $1.3 million for backup equipment. As of today not one dollar of the $1.3 million has been spent so the urgency expressed by the legislators raises a number of questions. The first being what is the money targeted for? Will it be used to address problems at the Kiryas Joel Plant or to do more testing on the microfiber project (I understand that this is being tested in the Kiryas Joel plant). I would request the IG's in the County Legislature investigate the management of the OCSD to assess:

a. What happens to equipment owned by the OCSD users when it has been sold over the past 10 years? What was the condition of that equipment when it was sold and to whom was it sold?
b. With all of the money that has been spent on the OCSD, was it spent on the OCSD facility and was it spent on what it was approved for? Or was it spent on some other facility?

Then there is the current effort to expand this facility to support the rapid growth within Kiryas Joel. In the section below on Facilities Planning, I have projected population growth for all of the OCSD#1/Moodna Communities using the U.S. Census data, Water Authority's Water Master Plan data and Kiryas Joel's FEIS Catskill connection and Growth Projections documents. Based on this assessment over the next thirty years the users of this facility outside of Kiryas Joel will have moderate growth and need for modest growth in their water supply or wastewater capacity. However, Kiryas Joel which, based on their U.S. Census housing growth, needs 2.5 mgd in 2012 and will grow to need 25 mgd in 2040. This is a growth of 10 times what they have today, while the other OCSD/Moodna Communities will need to increase their capacity by about 50% over the same time period. .

The cost of this to the OCSD/Moodna users, based on the cost of the 1.5 mgd expansion completed in 2006 of $24 million, will be at least $601 million but does not include the capacity needed for government and commercial property within the district, nor does it include the cost of borrowing or inflation. This is a tsunami of debt and wastewater.

It is a terrible thing when the public loses faith in the government that is supposed to manage taxpayer's assets and protect ALL of the residents of our county. The public looks to those who are elected to take action when this conduct occurs.

OCSD Facility Planning

It appears that very little planning is done based on the data that is readily available to anyone one who is interested. This section uses the 2000 to 2010 U.S. Census data, the Kiryas Joel FEIS document[19] and the Water Master Plan to project growth in key areas that drive water demand and wastewater capacity. This section will provide a view of the population, water demand and wastewater projections for:

1. Kiryas Joel Projections
2. The Other OCSD #1/Moodna Projections

Kiryas Joel's Projections[20]:

The table below contains a summary of Kiryas Joel's Population and environmental data projections for water and wastewater capacity and is based on the U.S. Census data, Kiryas Joel's FEIS data and the DEC's guidelines for wastewater capacity.[21]

Table 1.0: Scenario 1: Kiryas Joel's Population growth rate and Water demand based on US Census Population growth rate

Kiryas Joel OCSD total water demand and wastewater projections based on U.S. Census Population Growth 2010 to 2040	Per Capita Water Demand KJ FEIS	2000 U.S. Census	2010 U.S. Census	2020[22]	2030[23]	2040[24]
V/Kiryas Joel OCSD water demand	72	1,064,367	1,749,158	3,123,965	5,663,240	10,445,494
V/Kiryas Joel total population		13,138	20,175	33,995	57,282	96,520
V/Kiryas Joel OCSD population		13,138	20,175	33,995	57,282	96,520
V/Kiryas Joel housing units		2,233	4,136	9,371	21,230	37,955
V/Kiryas wastewater requirements		1,002,059	2,162.676	4,898,356	11,115,774	25,132,581
V/Kiryas Joel occupancy rate		**5.9**	**4.9**	**3.6**	**2.7**	**2.5**

Table 1.0, Kiryas Joel population is calculated based on the 2000 to 2010 U.S. Census data population data growth rate and housing unit growth rate is based on the 2000 to 2010 U.S. Census Housing unit's growth.

[19] In addition to the KJ FEIS document there is the Growth study for Village of Kiryas Joel that was prepared by AKRF, Inc of NYC, January, 2009. This study was in response to a court order issued by the Supreme Court of NY mandating KJ prepare ana analysis of the growth inducing effects of the proposed Catskill aqueduct. The most interesting statement in this document was "…These projects do not specifically consider the potential effects of factors such as availability of land, water, or other infrastructure or population growth… such potential constraints are unlikely to have a substantial effect on population growth…"

[20] If you are interested in the detail for each year from 2011 to 2040 go to Appendix B_01, section B, B_02, section B, and B_03, section B below.

[21] If you are interested in more detail see Appendix B. This appendix provides the year to year detail along with information on how each line was calculated.

[22] Appendix B_01, section B for details on 2011 to 2020.

[23] Appendix B_02, section B for details on 2021 to 2030

[24] Appendix B_03, section B for details on 2021 to 2030

Kiryas Joel's population growth rate for 2000 to 2010 was reported in the U.S. Census data at 54% over this 10 year period. However, the 2000 to 2010 U.S. Census reported housing unit's growth at 85% over this same period. Combining these two sets of data and projecting out 30 years shows an anomaly that suggest that the Kiryas Joel population was significantly understated in the 2010 U.S. Census. Therefore, this document presents two projections, one using the U.S. Census population data and the other using the U.S. Census housing data.

Kiryas Joel's water demand growth rate is based on the Kiryas Joel's FEIS water per capita consumption data and the U.S. Census population growth rate from 2000 to 2010[25], while the Orange County Water Master Plan and the US Census population data was used to calculate the other OCSD user communities' water demand.[26] In table 1.0 above it shows that water demand will increase by 8.7 mgd, or 500% from 2010 to 2040.

Included in the 2000 and 2010 water demand and wastewater capacity are the flows required to support the Kiryas Joel chicken plant. These numbers are well known and are significant enough that to not include them would significantly understate both of these projections. Since this plant produces chicken for the Kiryas Joel Community, as this communities population grows, this plant's production capacity will have to grow and thus their demand for water/wastewater will grow. Therefore, we have included it in the Kiryas Joel numbers. The Table 1.0 reports that the population will grow a little less than 400% over the next 30 years.

Since we have no way to identify commercial or governmental demand for water and wastewater capacity these numbers presented above are less than what is really required to provide these resources to all of the OCSD/Moodna communities.

[25] The Kiryas Joel FEIS states that 9 months of the year the average daily consumption per person is 66 gallons per day (GPD) and 3 months of the year it increases to 88 gpd. The daily average water demand is 72 gpd.

[26] The reason that we could not use the Water Master Plan for Kiryas Joel was that this information was not provided by the county in their Water Master Plan.

Kiryas Joel OCSD population growth based on housing growth.

When the U.S. Census population growth and housing unit's growth are combined for Kiryas Joel's housing units, we find that by the year 2040 this community will have an occupancy that is less than the non Kiryas Joel communities who are members of the OCSD. This is not realistic based on the Kiryas Joel's FEIS data statements on what drives their growth.

However, when we use the Kiryas Joel's housing unit growth to determine the environmental projections for population we find that the population will increase a little over 500% while the demand for water will grow 600% (See table 2.0 below for details).

Table 2.0, Scenario 2: Kiryas Joel's Population, water demand and wastewater projections based on an adjusted housing unit growth[27] from 2000 to 2010 and beginning in 2011.

Kiryas Joel OCSD total water demand and wastewater projections based on adjusted Housing Growth rate to calculate population growth 2010 to 2040 (6.35%)	Per Capita Water Demand KJ FEIS	2000 U.S. Census	2010 U.S. Census Housing Growth	2020[28]	2030[29]	2040[30]
V/Kiryas Joel OCSD water demand	72	**1,063,652**	**2,071,766**	**3,856,511**	**7,606,113**	**13,967,433**
V/Kiryas Joel Total Population		**13,138**	**24,687**	**44,240**	**81,883**	**151,555**
V/Kiryas Joel OCSD Population		**13,138**	**24,687**	**44,240**	**81,883**	**151,555**
V/Kiryas Joel Housing units		2,233	4,136	9,371	21,230	37,955
V/Kiyras Wastewater DEC req'mts		1,002,059	2,162.676	4,898,356	11,115,774	25,132,581
V/Kiryas Joel occupancy rate		**5.9**	**6.0**	**4.7**	**3.9**	**4.0**

Table 2.0, Kiryas Joel population is calculated based on the 2000 to 2010 adjusted U.S. Census housing growth data and shows a more stable occupancy rate through 2040. 2010 population is adjusted to reflect full occupancy of all units available and this impacts water demand.

DEC guidelines use number of units to determine wastewater capacity requirements for each category. Housing units are broken into number of bedrooms[31] and the U.S. Census

[27] The housing growth rate for Kiryas Joel was adjusted to support 8.5% over the next ten years. Thus, Table 2.0 uses an actual growth rate of 6.35% because this gives me an 85% growth over that period. This is the rate used for calculation the growth from 2011 to 2040 in this scenario.

[28] Appendix B_01, section D for details on 2011 to 2020.

[29] Appendix B_02, section D for details on 2021 to 2030

[30] Appendix B_03, section B for details on 2021 to 2040

[31] DEC guidelines have 3 bedrooms = 400 gpd, 4 bedrooms = 475 gpd and 5 bedrooms = 550 gpd. For Kiryas Joel we assumed that 50% were 3 bedrooms, 35% were 4 bedrooms and 15% were 5 bedrooms.

housing unit projections were used to calculate the wastewater needs over the next 40 years. A question that arises is: why would the DEC guidelines use number of bedrooms in a housing unit as the measurement to determine wastewater requirements and not populations since the number of people is the real flow determinant for wastewater needs? Due to the unique characteristics of the family sizes in the Village of Kiryas Joel, using a bedroom count to determine wastewater needs severely underestimates wastewater capacity for that community. However, this study uses the DEC's guidelines.

Kiryas Joel reported population growth, prior to the 2010 Census, averaged 8.5% a year, but the 2010 U.S. Census reported a 54% growth rate from 2000 to 2010, or an average of 5.4% a year. The U.S Census also reported that the housing units in this community grew at 85% over from 2000 to 2010. To not consider housing growth and occupancy rates as the upper growth limit for this community would have a significant negative impact on all of the environmental factors that drive water demand and wastewater capacity.

You will note in Table 3.0 below that when we change the population growth to be consistent with the housing growth (Column 4), the occupancy rate declines at a slower rate than the estimates provided in table 1.0 based only on U.S. Census population (Column 3) driven projections.

Table 3.0, Scenario 3: Comparison of Kiryas Joel's 2040 population based on U.S. Census housing growth rate of 8.5%.

Kiryas Joel OCSD total water demand and wastewater projections based on housing growth rate of 8.5% a year to calculate population growth 2010 to 2040	Per Capita Water Demand KJ FEIS	2000 U.S. Census	2010 U.S. Census Housing Growth	2020[32]	2030[33]	2040[34]
V/Kiryas Joel OCSD water demand	72	**1,063,652**	**1,749,158**	**3,961,488**	**9,155,855**	**19,906,699**
V/Kiryas Joel Total Population		**13,138**	**20,175**	**45,709**	**103,558**	**234,621**
V/Kiryas Joel OCSD Population		**13,138**	**20,175**	**45,709**	**103,558**	**234,621**
V/Kiryas Joel Housing units		2,233	4,136	9,371	21,230	37,955
V/Kiyras Wastewater DEC req'mts		1,002,059	2,162.676	4,898,356	11,115,774	25,132,581
V/Kiryas Joel occupancy rate		**5.9**	**4.9**	**4.9**	**4.9**	**6.2**

Table 3.0, Kiryas Joel population for 2040 with resource requirements to service each housing unit and the expediential growth that begins to occur in the mid 2030's.

[32] Appendix E_01, section D for details on 2011 to 2020.

[33] Appendix E_02, section D for details on 2021 to 2030

[34] Appendix E_03, section B for details on 2021 to 2040

Note that using the higher growth rate in Table 3.0, scenario 2 above the population begins to grow at a faster rate over time and by 2040 the growth supports an occupancy of 6.2 per house hold for Kiryas Joel and this is consistent with their documented growth patterns.

Table 4.0 compared the end result of the three scenarios with huge growths in water demand but no change in wastewater requirements.

Table 4.0, Comparison of Kiryas Joel's 2040 population based on U.S. Census Population growth rate (Column 3), based on an adjusted housing growth rate (Column 4) and unadjusted housing growth (Column5). See Tables 1.0, 2.0 and 3.0 above for more detail.

Kiryas Joel OCSD total water demand and wastewater projections for 2040	Per Capita Water Demand KJ FEIS	2040 Population growth Impacts (Data from table 1.0 above) (Column 3) – 5.4%	2040 Adjusted Housing growth Impacts (Data from table 2.0 above) (Column 4) – 6.35%	2040 Housing growth Impacts (Housing growth at 8.5%) (Data from table 2.0 above) (Column 5) – 8.5%
V/Kiryas Joel OCSD water demand	72	10,445,494	13,967,433	19,906,609
V/Kiryas Joel Total Population		96,520	151,555	234,621
V/Kiryas Joel OCSD Population		96,520	151,555	234,621
V/Kiryas Joel Housing units		37,955	37,955	37,955
V/Kiyras Wastewater DEC req'mts		25,132,581	25,132,581	25,132,581
V/Kiryas Joel occupancy rate		**2.5**	**4.0**	**6.2**

Table 4.0, Kiryas Joel population for 2040 with resource requirements are compared using the U.S. Census Population growth rate of 5.4% (Column 3), the adjusted U.S. Census Housing growth rate if 6.35% (Column 4) and the actual U.S. Census growth rate of 8.5% (Column 5).

Note:

1. Table 4.0 above reports the same wastewater demand for all three scenarios because the DEC guidelines use Housing units grouped by number of bedrooms to calculate wastewater capacity requirements, not population. This highlights the inaccuracy of the DEC's guidelines for using bedrooms to determine wastewater capacity requirements for a community like Kiryas Joel where growth does not follow the norm of most communities.

If you look at Column 5 in Table 3, you notice that to have a stable growth like that shown by the non-Kiryas Joel communities it would require us to use the 8.5% growth rate for population growth. The concern is that the real growth in Kiryas Joel will have significant financial and environmental impacts on this area of the county as well as the downstream municipalities. These impacts are:

1. Population will grow at a faster rate than is currently envisioned, water demand will exceed the limits of our areas resources, and that the wastewater capacity will not be able to support this uncontrolled growth. This will result in the communities that share this facility to finance their growth by building more wastewater facilities.

2. The DEC guidelines, by using a bedroom count fail to consider the impact of large families on wastewater capacity planning and the volume of effluence that will be deposited into the surface water ways. This can only lead to an environmental disaster.

There is one anomaly that we need to consider. In 2000 Kiryas Joel had 4 housing units that were vacant, but in 2010 they claimed to have 470 vacant units. Although, their population was reported in the U.S. Census to grow 54% over 2000 to 2010 their housing units grew 8.5% a year. Since the village does not build speculative housing units, it is unlikely that vacant units would remain unoccupied for an extended period of time. The concerned is that these units may have been missed in the 2010 U.S. Census and thus the suspiciously small population growth rate supported by the 2010 U.S. Census.

Other OCSD municipality Projections[35]

We need to compare what we found for Kiryas Joel against the other Orange County Sewer District Communities. We used the Orange County Water Master Plan data, the U.S. Census data on population growth and housing growth and the DEC guidelines to develop the information presented in the table below for the other OCSD Communities.

Table 5.0, Scenario 1: Other OCSD municipalities and a projection of their environmental requirements for water and wastewater based on U.S. Census population growth rate.

Other OCSD municipalities water demand and wastewater projections 2010 to 2040	Per Capita Water	2000	2010	2020	2030	2040
Other OCSD Municipalities Water Dmd		3,318,976	3,662,292	4,126,813	4,670,593	5,309,166
Other OCSD Municipalities total Pop'n		42,936	46,305	51,363	57,242	64,100
Other OCSD Population		30,927	34,062	38,294	43,245	49,059
Other Housing units		11,083	12,401	14,071	15,560	18,281
Other Wastewater Req'mts		4,433,029	4,960,480	6.050,469	6,885,819	7,860,937
All Other OCSD Occupancy rates		2.8	2.7	2.7	2.8	2.7

Table 5.0, The other municipalities who are in the Orange County Sewer District have water demand calculated based on the Water Master Plan data on per capita consumption and the U.S. Census population and housing data.

The details for each municipality are provided in Appendix B_02. What we found is that the issues with population and housing growth rates experienced with the Kiryas Joel data did not occur in these municipalities. Note that the town of Chester's growth rate was changed to be slightly positive because it would be unrealistic to leave it at a negative growth rate over the next 30 years.

Table 3.0 above shows that unlike Kiryas Joel the other Orange County Sewer District communities for the next 30 years will have:

1. Occupancy that will remain relatively stable at 2.7 persons per unit.
2. Population that will grow 14,988 people, or a rate of 1.5%.
3. Water demand that will grow at 1.5% a year.
4. Wastewater growth that will increase 3.0 mgd, or at a rate of 1.9% a year.

[35] If you are interested in the detail for each year from 2011 to 2040 go to Appendix B_02 below. The municipalities included in this summary are the V/SBG, Town/Village of Chester, Town/Village of Woodbury, Village of Harriman and Town and Village of Monroe.

Non-Kiryas Joel OCSD population growth based on housing growth

Since the non-Kiryas Joel Population shows a modest and stable growth rate for all parameters used to determine resource needs we would expect that this would hold true for population calculated using housing unit growth rates.

Unlike Kiryas Joel, when the U.S. Census population growth and housing unit growths are compared for the non-Kiryas Joel communities, we find that by the year 2040 these communities have a relatively stable occupancy rate over the next 30 years.

Table 6.0, Scenario 2: Non-Kiryas OCSD municipalities and a projection of their environmental requirements for water and wastewater based on U.S. Census population growth using the housing growth rate.

Non-Kiryas Joel water demand and wastewater projections based on housing growth rate to calculate population growth 2010 to 2040	Per Capita Water Demand	2000 U.S. Census Housing Growth	2010 U.S. Census Housing Growth	2020	2030	2040
Other OCSD Municipalities WD	Different for each community	**3,586,207**	**3,728,995**	**4,214,775**	**4,685,888**	**5,318,855**
Other OCSD Municipalities Pop'tion		**45,918**	**47,263**	**53,464**	**59,337**	**67,399**
Other OCSD Population		**33,568**	**34,723**	**39,261**	**43,617**	**49538**
Other OCSD Housing units		11,083	12,401	14,071	16,014	18,281
Other OCSD Wastewater Req'mts		4,765,506	5,332,516	6,050,469	6,785,819	7,860,937
Other OCSD Occupancy rates		**3.0**	**2.8**	**2.7**	**2.7**	**2.7**

Table 6.0, Kiryas Joel population is calculated based on the 2000 to 2010 U.S. Census housing growth data and shows a stable occupancy rate through 2040.

In Table 7.0 below we compare the U.S. Census population growth with the population and its impact on resources with the population growth using U.S. Census housing growth rate and we find that the non-Kiryas Joel Community has the same occupancy rate over time.

Table 7.0, Comparison of Non-Kiryas OCSD municipalities and a projection of their environmental requirements for water and wastewater based on U.S. Census population growth (column 3) and then calculate population using housing growth rate (Column 4).

Non-Kiryas Joel water demand and wastewater projections based on housing growth rate to calculate population growth 2010 to 2040	Per Capita Water Demand	2040 U.S. Census Population Growth (Column 3)	2010 U.S. Census Population using Housing Growth (Column 4)
Other OCSD Municipalities WD		5,309,166	**5,318,855**
Other OCSD Municipalities Pop'tion		64,100	**67,399**
Other OCSD Population		49,059	**49,538**
Other OCSD Housing units		18,281	18,281
Other OCSD Wastewater Req'mts		7,860,937	7,860,937
Other OCSD Occupancy rates		2.7	2.7

Table 7.0, Comparison of Non-Kiryas OCSD municipalities and projection for water and wastewater based on U.S. Census population growth (column 3) and population using housing growth rate (Column 4).

Most of the growth shown when using the housing growth came from the Town of Chester where the U.S. population growth rate showed a decline in population but the housing shows a growth of approximately 0.8%.

Conclusion on data for Other OCSD User Projections:

There are no compatibility issues between U.S. Census population and housing data for the **non**-Kiryas Joel municipalities when using the 2000 to 2010 U.S. Census data because they are consistent within each community and when they are combined for all municipalities in the non-KJ OCSD communities.

Appendices:

Appendix A, 2002 to 2013 Capital Plan Data for the Orange County Sewer District

	Capital Plan Year Proposed	Capital Plan Year Authorized and Approved	Project # and Name	Initial Amount	Total Spent this year 08/31	Balance Available	Actual Federal / State Aid	Status
1		**2003**	**#819 – Air Diffusers**	**$50,000**	**$43,508**	**$6,492**		
2		2004	#819 – Air Diffusers	$50,000	$43,508	$6,492		
3		2005	#819 – Air Diffusers	$50,000	$43,508	$6,492		
1		**2003**	**#820 –Chlorination System**	**$50,000**	**$45,700**	**$4,300**		
2		2004	#820 –Chlorination System	$50,000	$45,700	$4,300		
1		**2003**	**#824 – Odor Control Equipment**	**$200,000**	**$38,078**	**$161,924**		
2		2004	#824 – Odor Control Equipment	$200,000	$38,078	$161,924		
3		2005	#824 – Odor Control Equipment	$200,000	$38,078	$161,924		
1		**2003**	**#826 – I & I Reduction**	**$6,200,000**	**$1,200,308**	**$4,999,692**		
2		2004	#826 – I & I Reduction	$6,200,000	$1,251,866	$4,948,134		
3		2005	#826 – I & I Reduction	$6,200,000	$1,282,026	$4,917.974		
4		2006	#826 – I & I Reduction	$6,200,000	$1,807,712	$4,392,288		
5		2007	#826 – I & I Reduction	$6,200,000	$1,971,447	$4,228,553		
6		2008	#826 – I & I Reduction	$6,200,000	$1,993,744	$4,206.256		
7		2009	#826 – I & I Reduction	$6,200,000	$1,995,787	$4,204,213		
8		2010	#826 – I & I Reduction	$6,200,000	$2,024,515	$4,175,485		
9		2011	#826 – I & I Reduction	$6,200,000	$2,024,515	$4,175,485		
10		2011	#826 – I & I Reduction	$6,200,000	$2,024,515	$4,175,485		
1		**2003**	**#827 – Sewer Plant Improvements**	**$270,000**	**$191,313**	**$78,687**		
2		2004	#827 – Sewer Plant Improvements	$270,000	$191,313	$78,687		
3		2005	#827 – Sewer Plant Improvements	$270,000	$191,313	$78,687		
4		2006	#827 – Sewer Plant Improvements	$270,000	$235,921	$34,079		
5		2007	#827 – Sewer Plant Improvements	$270,000	$235,921	$34,079		
6		2008	#827 – Sewer Plant Improvements	$270,000	$265,968	$4,032		
7		2009	#827 – Sewer Plant Improvements	$270,000	$265,935	$1,065		**Complete**
1		**2003**	**#828 - Waste Water Treatment Facilities**	**$50,000**	**$46,152**	**$3,848**		
1	**3#132**	**2003**	**#829 – Planning improve Harriman Plant**	**$2,500,000**	**$999,650**	**$1,500,350**		
2		2004	#829 – Planning improve Harriman Plant	$26,000,000	$1,123,162	$24,876,838		
3		2005	#829 – Planning improve Harriman Plant	$26,000,000	$5,305,791	$20,694,209		
4		2006	#829 – Planning improve Harriman Plant	$26,000,000	$16,895,332	$9,104,668		
5		2007	#829 – Planning improve Harriman Plant	$26,000,000	$23,116,387	$2,883,613		
6		2007	#829 – Planning improve Harriman Plant	$26,000,000	$23,116,387	$2,883,613		

	Capital Plan Year Proposed	Capital Plan Year Authorized and Approved	Project # and Name	Initial Amount	Total Spent this year 08/31	Balance Available	Actual Federal / State Aid	Status
7		2008	#829 – Planning improve Harriman Plant	$26,000,000	$24,153,359	$1,846,641	$742,250	
8		2009	#829 – Planning improve Harriman Plant	$26,000,000	$24,280,241	$1,719,759		**Complete**
9		2010	#829 – Planning improve Harriman Plant	$26,000,000	$24,307,503	$1,692,497		**Complete**
10		2011	#829 – Planning improve Harriman Plant	$26,000,000	$24,307,503	$1,692,497		**Complete**
11		2012	#829 – Planning improve Harriman Plant	$26,000,000	$24,307,503	$1,692,497		**Complete**
1		**2003**	**#830 – Manhole #11**	**$320,000**	**$125,591**	**$194,409**		
2		2004	#830 – Manhole #11	$320,000	$125,591	$194,409		
3		2005	#830 – Manhole #11	$320,000	$144,512	$175,488		
4		2006	#830 – Manhole #11	$320,000	$291,591	$28,409		
5		2007	#830 – Manhole #11	$320,000	$319,091	$909		**Complete**
1		**2003**	**#831 – Recon Sewer District #1**	**$500,000**	**$0**	**$500,000**		
2		2004	#831 – Recon Sewer District #1	$500,000	$0	$500,000		
3		2005	#831 – Recon Sewer District #1	$500,000	$7,300	$492,700		
4		2006	#831 – Recon Sewer District #1	$500,000	$12,560	$487,440		
1		**2005**	**#832 – Recycling Program Equipment**	**$100,000**	**$5,777**	**$94,223**		
2		2006	#832 – Recycling Program Equipment	$200,000	$104,683	$95,317		
3		2007	#832 – Recycling Program Equipment	$200,000	$153,638	$46,362		
4		2008	#832 – Recycling Program Equipment	$200,000	$195,299	$4,701		
1		**2005**	**#833 – Improve Recycling Transfer Station**	**$800,000**	**0**	**$800,000**		
2		2006	#833 – Improve Recycling Transfer Station	$800,000	$1,950	$789,050		
3		2007	#833 – Improve Recycling Transfer Station	$800,000	$1,950	$789,050		
4		2008	#833 – Improve Recycling Transfer Station	$800,000	$42,870	$757,130		
5		2008	#833 – Improve Recycling Transfer Station	$800,000	$337,719	$462,281		
6		2009	#833 – Improve Recycling Transfer Station	$800,000	$337,719	$462,281		
7		2010	#833 – Improve Recycling Transfer Station	$800,000	$430,127	$369,873		
8		2011	#833 – Improve Recycling Transfer Station	$1,100,000	$488,889	$611,111		
9		2012	#833 – Improve Recycling Transfer Station	$1,100,000	$531,833	$568,167		
1		**2007**	**#835 – 2006 Improve District #1**	**$748,550**	**0**	**$748,550**		
2		2008	#835 – 2006 Improve District #1	$748,550	$1,800	$746,750		
3		2008	#835 – 2006 Improve District #1	$748,550	$1,800	$746,750		
4		2009	#835 – 2006 Improve District #1	$748,550	$15,580	$732,970		
5		2010	#835 – 2006 Improve District #1	$748,550	$26,240	$722,310		
6		2011	#835 – 2006 Improve District #1	$748,550	$31,490	$717,060		
7		2012	#835 – 2006 Improve District #1	$748,550	$56,490	$692,060		
1		**2007**	**#836 – 2006 Roll Off Trucks**	**$140,000**	**0**	**$140,000**		
2		2008	#836 – 2006 Roll Off Trucks	$140,000	$122,399	$17,601		Complete
3		2009	#836 – 2006 Roll Off Trucks	$140,000	$122,399	$17,601		Complete

	Capital Plan Year Proposed	Capital Plan Year Authorized and Approved	Project # and Name	Initial Amount	Total Spent this year 08/31	Balance Available	Actual Federal / State Aid	Status
4		2010	#836 – 2006 Roll Off Trucks	$140,000	$122,399	$17,601		Complete
5		2011	#836 – 2006 Roll Off Trucks	$140,000	$122,399	$17,601		Complete
6		2012	#836 – 2006 Roll Off Trucks	$140,000	$122,399	$17,601		Complete
1		**2008**	**#837 – Sewer Plant Enhancements**	**$1,500,000**	**$103,473**	**$1,396,527**		**#119**
2		2009	#837 – Sewer Plant Enhancements	$1,500,000	$286,560	$1,213,440		
3		2010	#837 – Sewer Plant Enhancements	$2,000,000	$499,207	$1,500,793		
4	**#116**	2011	#837 – Sewer Plant Enhancements	$3,550,000	$1,839,949	$1,710,053		
5		2012	#837 – Sewer Plant Enhancements	$3,840,000	$2,153,,498	$1,686,502	$500,000	
1		**2008**	**#838 – Sewer Fleet Replacement**	**$336,000**	**$64,335**	**$271,665**		#118
2		2009	#838 – Sewer Fleet Replacement	$336,000	$326,684	$9,316		**Complete**
1	**#121**	**2009**	**#839 2008 Sewer Fleet Replacement**	**$663,000**	**$0**	**$663,000**		
2		2010	#839 – 2008 Sewer Fleet Replacement	$663,000	$541,415	$121,585		
3		2011	#839 – 2008 Sewer Fleet Replacement	$663,000	$661,067	$1,933		
4		2012	#839 – 2008 Sewer Fleet Replacement	$663,000	$661,067	$1,933		**Complete**
1	**#116**	**2010**	**#840 – 2009 Harriman Plant Repairs**	**$1,550,000**	**$0**	**$1,550,000**		See #837
1		**2012**	**#842 – 2011 Sewer Equipment**	**$400,000**	**$0**	**$400,000**		
			Total Approved and Available:	**$41,067,551**	**$31,104,160**	**$9,963,390**	**$1,242,250**	
	Proposed							
1	**2003**		**#131 – New Sewer Extensions**	**$2,400,000**	**$0**	**$2,400,000**		
2	2003		#133 – New Roofs for all buildings at Harriman	$150,000	$0	$150,000		
1	**2004**		**#109 – Collection System Improvements**	**$630,000**	**$0**	**$630,000**		
2	2004		#110 – New Sewer Main Extension	$1,900,000	$0	$1,900,000		
3	2004		#111 – HWWT Post Expansion Enhancements (Phase II)	$15,000,000	$0	$15,000,000		
4	2004		#112 – Modify Harriman Waste treatment Plant	$2,000,000	$0	$2,000,000		
1	**2005**		**Not Available**					
1	**2006**		**#114 – New Sewer Main Extensions**	**$2,500,000**	**$0**	**$2,500,000**		
2	2006		#115 – HWWT Post Expansion. Enhancement (PHII)	$3,000,000	$0	$3,000,000		
3	2006		#117 – Harriman Treatment Plant Improvement	1,300,000	$0	$1,300,000		
1	2007		#117 – New Sewer Main Extensions	$2,500,000	$0	$2,500,000		
1	**2008**		**#120 – New Sewer Main Extension**	**$2,500,000**	**$0**	**$2,500,000**		
2	2008		#122 – Harriman Treatment Plant Repairs	$500,000	$0	$500,000		
3	2008		#123 – Harriman Sewer Plant Pole Barn	$300,000	$0	$300,000		
1	**2009**		**#115 – New Sewer Main Extension**	**$2,500,000**	**$0**	**$2,500,000**		
2	2009		#117 – Harriman Sewer Plant Storage Unit	$25,000	$0	$25,000		
1	**2010**		**#114 – New Sewer Main Extension**	**$2,000,000**	**$0**	**$2,000,000**		
2	2010		#115 – Harriman Treatment Plant Repairs	$500,000	$0	$500,000		

	Capital Plan Year Proposed	Capital Plan Year Authorized and Approved	Project # and Name	Initial Amount	Total Spent this year 08/31	Balance Available	Actual Federal / State Aid	Status
3	2010		#116 – Fleet Replacement	$67,000	$0	$67,000		
4	2010		#117 – Equipment Replacement	$700,000	$0	$700,000		
1	**2011**		**#116 – New Sewer Main Extension**	**$2,000,000**	**$0**	**$2,000,000**		
2	2011		#117 – Harriman Treatment Plant Repairs	$290,000	$0	$290,000		
3	2011		#118 – Equipment Replacement	$400,000	$0	$400,000		
4	2011		#119 - Preliminary Engineer for Harriman Facility	$2,000,000	$0	$2,000,000		
1	**2012**		**#123 – New Sewer Main Extension**	**$865,000**	**$0**	**$865,000**		
2	2012		#124 – Harriman Treatment Plant Repair II	$1,000,000	$0	$1,000,000		
3	2012		#125 – Equipment Replacement	$865,000	$0	$865,000		
4	2012		#126 – Pelletization	$5,000,000	$0	$5,000,000		
			Total Proposed projects not approved and authorized:			**$52,492,000**		

✓ Issues with the OCSD Capital Plan and Associated Projects from 2003 to 2013:

A. Sewer District Fleet Replacement:
   a. From 2003 t0 2008 there was no Sewer District Fleet Replacement.
   b. From 2008 to 2012 the County spent $1 million on fleet replacement,
      Question: During the Physical Services meeting the County Administrator said that it sold the old equipment but they did not say to whom or for how much it was sold. Given that some of the equipment from the OCSD has been reported to have shown up at the Kiryas Joel Plant shouldn't you ask for a copy of the appraisals taken on this equipment and the price each piece was sold for and to whom it was sold? I would ask that this be made available to the legislature.
   c. In 2010 the county has proposed Fleet Replacement of $67,000. What is that for, what is the value that remains on the existing equipment and what is the expected revenue that is expected to be recovered from this sale?

B. Capital Project questions:
   a. Project #826, I & I Reduction is $6.2 million and was opened in 2002 but it has only spent $2 million. Capital plans should not be used as a holding place for the county in its management of that facility. Shouldn't the legislature be asking what is this for and why isn't it completed yet?
   b. Project #829, Planning Improve Harriman Plant was opened in 2003 and was completed in 2009 (according to the capital plan) and has not been removed from the Capital Plan because it has a surplus of $1.3 million. This has to be addressed before it should be closed. Shouldn't the legislature ask why this is not being closed and the surplus applied to the debt for that project?
   c. Project # 831, Recon Sewer District #1 was opened in 2003 for $500,000 but only $12,560 was spent by 2006 and has not been marked completed. Shouldn't the legislature ask why?

d. Project # 833, Improve Recycling Transfer State was opened in 2005 and was increased by $300,000 in 2011 despite having only spent a little over ½ of the original $800,000. Should the legislature question the need for this additional money until the current amount is spent? It also has a positive cash balance that has been borrowed.
e. In 2012 there is a new proposed capital project for Equipment Replacement of $865,000 that was approved and authorized at the November meeting. This is on top of the $400,000 that was approved and authorized in the 2012 capital plan. There still remains Proposed Project #117 from 2010 with the same name for $700,000. This means the county is planning on spending $1.8 million on equipment replacement and shouldn't the legislature ask which facility this capital is for, OCSD or Kiryas Joel facility?
f. Proposed Capital Project #126, Pelletization for $5 million. What is that?
g. Why has the sewer district been removed from the capital plan and placed under DPW?

C. Why do we need a change in the management structure of this facility?
The County Administrator has frequently stated that "this is paid for by the users of the district and not all the taxpayers in the county" when presenting to the legislature and it has appeared to stop any meaningful discussion on budget items being presented by him. What was most worrisome was when the budget for leasing the Kiryas Joel Sewer went from $336,000 in 2004 to $0 in 2005, to $1.5 million in 2006 and has now settled at $700,000 per year no legislator at those meetings asked one question. Yet, in one of those meetings, 30 minutes debating a $5,000 increase in one line item as being excessive. This escalating cost happened despite the fact that this facility has had problems producing the 970,000 gpd that it is rated for due to the presence of animal waste from the chicken factory and I suspect that when Rockland refused to accept our sludge for processing due to the "quality of that sludge" (i.e., Odor) it was also due to the animal waste and the associated odor. However, who bears the cost of this expense - the entire user population of the OCSD.

Appendix B_01 – 2011 to 2020Projections: OCSD Communities Population growth and water Demand based on U.S. Census growth rate for each municipality and the Water Demand data found in the Water Master Plan and the Kiryas Joel FEIS Document.

A. Non- Kiryas Joel Municipalities in the OCSD – Population, Water Demand and Wastewater Projections from 2010 to 2020

Non Kiryas Joel OCSD total water demand projections 2010 to 2020	Per Capita Water	2000	2010	2011	2012	2013	2014	2015	1016	2017	2018	2019	2020
So. Blooming Grove OCSD Water Demand	77	203,764	214,859	216,029	217,205	218,388	219,577	220,773	221,975	223,183	224,399	225,621	226,849
VSBG Total Population		3,067	3,234	3,252	3,269	3,287	3,305	3,323	3,341	3,359	3,378	3,396	3,414
VSBG OCSD Population		2,646	2,790	2,806	2,821	2,836	2,852	2,867	2,883	2,898	2,914	2,930	2,946
VSBG Housing units		1,035	1,092	1,098	1,104	1,110	1,116	1,123	1,129	1,135	1,141	1,147	1,154
V/SBG Wastewater Req'mts		445,184	469,646	472,227	474,821	477,430	480,054	482,692	485,344	488,011	490,692	493,388	496,100
VSBG Occupancy rates		2.56	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55
Town of Chester OCSD Water Demand	110.9	366,301	337,528	337,865	338,203	338,541	338,880	339,219	339,558	339,898	340,237	340,578	340,918
T/Chester Total Population		8,695	8,012	8,020	8,028	8,036	8,044	8,052	8,060	8,068	8,076	8,084	8,092
T/Chester OCSD Population		3,303	3,044	3,047	3,050	3,053	3,056	3,059	3,062	3,065	3,068	3,071	3,074
T/Chester Housing units		961	1,036	1,044	1,052	1,060	1,069	1,077	1,085	1,094	1,102	1,111	1,119
T/Chester Wastewater Req'mts		413,239	445,428	448,898	452,395	455,919	459,470	463,049	466,656	470,292	473,955	477,647	481,368
T/Chester Occupancy rates		3.4	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7
Village of Chester OCSD Water Demand	156.6	520,322	599,465	608,583	617,840	627,238	636,778	646,464	656,297	666,280	676,414	686,703	697,148
V/Chester Total Population		3,445	3,969	4,029	4,091	4,153	4,216	4,280	4,345	4,411	4,478	4,547	4,616
V/Chester OCSD Population		3,323	3,828	3,886	3,945	4,005	4,066	4,128	4,191	4,255	4,319	4,385	4,452
V/Chester Housing units		1,455	1,646	1,668	1,689	1,712	1,734	1,757	1,780	1,803	1,827	1,851	1,875
V/Chester Wastewater Req'mts		625,650	707,780	717,071	726,484	736,021	745,683	755,471	765,389	775,436	785,615	795,928	806,376
V/Chester Occupancy rates		2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4
Town of Monroe OCSD Water Demand	79	284,064	308,422	311,067	313,734	316,425	319,138	321,875	324,635	327,419	330,226	333,058	335,914
T/Monroe Total Population		8,842	9,600	9,683	9,766	9,849	9,934	10,019	10,105	10,192	10,279	10,367	10,456
T/Monroe OCSD Population		3,596	3,904	3,938	3,971	4,005	4,040	4,074	4,109	4,145	4,180	4,216	4,252
T/Monroe Housing units		1,201	1,395	1,407	1,419	1,432	1,444	1,456	1,469	1,482	1,494	1,507	1,520
T/Monroe Wastewater Req'mts		516,559	599,949	605,124	610,344	615,609	620,919	626,275	631,677	637,126	642,622	648,165	653,756
T/Monroe Occupancy rates		3.0	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8

Non Kiryas Joel OCSD total water demand projections 2010 to 2020	Per Capita Water	2000	2010	2011	2012	2013	2014	2015	1016	2017	2018	2019	2020
Village of Monroe OCSD Water Demand	111.6	863,445	928,258	935,226	942,247	949,319	956,445	963,625	970,858	978,146	985,488	992,886	1,000,339
V/Monroe Total Population		7,780	8,364	8,427	8,490	8,554	8,618	8,683	8,748	8,814	8,880	8,946	9,013
V/Monroe OCSD Populiation		7,737	8,318	8,380	8,443	8,506	8,570	8,635	8,699	8,765	8,831	8,897	8,964
V/Monroe Housing units		2,620	2,846	2,871	2,895	2,920	2,945	2,971	2,997	3,022	3,048	3,075	3,101
V/Monroe Wastewater Req'mts		1,126,600	1,223,780	1,234,336	1,244,984	1,255,723	1,266,555	1,277,480	1,288,499	1,299,614	1,310,824	1,322,131	1,333,536
V/Monroe Occupancy rates		3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Town-Village of Woodbury OCSD Water Demand	103.2	832,911	1,006,622	1,027,616	1,049,048	1,070,927	1,093,262	1,116,063	1,139,339	1,163,101	1,187,359	1,212,122	1,237,402
T-V/Woodbury Total Population		8,855	10,702	10,925	11,153	11,385	11,623	11,865	12,113	12,365	12,623	12,887	13,155
T-V/Woodbury OCSD Population		8,071	9,754	9,958	10,165	10,377	10,594	10,815	11,040	11,270	11,505	11,745	11,990
T-V/Woodbury Housing units		2,852	3,348	3,406	3,465	3,526	3,587	3,649	3,713	3,777	3,843	3,910	3,978
T-V/Woodbury Wastewater Req'mts		1,226,334	1,439,593	1,464,627	1,490,097	1,516,010	1,542,373	1,569,195	1,596,483	1,624,245	1,652,491	1,681,228	1,710,464
T-V/Woodbury Occupancy rates		2.8	2.9	2.9	2.9	2.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Village of Harriman OCSD Water Demand	110.2	248,170	267,125	269,165	271,221	273,292	275,380	277,483	279,602	281,738	283,889	286,058	288,243
V/Harriman Total Population		2,252	2,424	2,443	2,461	2,480	2,499	2,518	2,537	2,557	2,576	2,596	2,616
V/Harriman OCSD Population		2,252	2,424	2,443	2,461	2,480	2,499	2,518	2,537	2,557	2,576	2,596	2,616
V/Harriman Housing units		958	1,038	1,063	1,090	1,116	1,144	1,172	1,201	1,230	1,260	1,291	1,323
V/Monroe Wastewater Req'mts		411,940	446,340	457,299	468,528	480,032	491,818	503,894	516,266	528,943	541,930	555,236	568,869
V/Harriman Occupancy rates		2.4	2.3	2.3	2.3	2.2	2.2	2.1	2.1	2.1	2.0	2.0	2.0
Other OCSD Municipalities WD		**3,318,976**	**3,662,279**	**3,705,552**	**3,749,498**	**3,794,130**	**3,839,460**	**3,885,501**	**3,932,265**	**3,979,764**	**4,028,013**	**4,077,025**	**4,126,813**
Other OCSD Municipalities Pop'tion		**42,936**	**46,305**	**46,778**	**47,258**	**47,745**	**48,239**	**48,740**	**49,249**	**49,766**	**50,290**	**50,823**	**51,363**
Other OCSD Population		**30,927**	**34,062**	**34,456**	**34,857**	**35,263**	**35,676**	**36,096**	**36,522**	**36,954**	**37,394**	**37,840**	**38,294**
Other OCSD Housing units		**11,083**	**12,401**	**12,557**	**12,715**	**12,876**	**13,039**	**13,205**	**13,373**	**13,543**	**13,717**	**13,892**	**14,071**
Other OCSD Wastewater Req'mts		**4,765,506**	**5,332,516**	**5,399,582**	**5,467,652**	**5,536,743**	**5,606,871**	**5,678,056**	**5,750,314**	**5,823,666**	**5,898,129**	**5,973,724**	**6,050,469**
Other OCSD Occupancy rates		**2.8**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**

B. Kiryas Joel's Population, Water Demand and Wastewater Projections from 2010 to 2020

Kiryas Joel OCSD total water demand projections 2010 to 2020 based on KJ FEIS water demand critieria and U.S. Census Population Growth	Per Capita Water Demand KJ FEIS	2000	2010	2011	2012	2013	2014	2015	1016	2017	2018	2019	2020
V/Kiryas Joel OCSD WD	72	1,064,367	1,749,158	1,852,487	1,962,170	2,078,617	2,202,266	2,333,584	2,473,072	2,621,263	2,778,728	2,946,078	3,123,965
V/Kiryas Joel Total Population		13,138	20,175	21,256	22,394	23,594	24,857	26,189	27,591	29,069	30,626	32,267	33,995
V/Kiryas Joel OCSD Population		13,138	20,175	21,256	22,394	23,594	24,857	26,189	27,591	29,069	30,626	32,267	33,995
V/Kiryas Joel Housing units		2,233	4,136	4,488	4,871	5,286	5,737	6,225	6,756	7,332	7,957	8,635	9,371
V/Kiyras Wastewater Rqmts DEC		1,002,059	2,162,676	2,346,915	2,546,849	2,763,816	2,999,266	3,254,774	3,532,049	3,832,946	4,159,475	4,513,822	4,898,356
V/Kiryas Joel Household Occupancy		5.9	4.9	4.7	4.6	4.5	4.3	4.2	4.1	4.0	3.8	3.7	3.6

C. Combined OCSD Municipalities Population, Water Demand and Wastewater Projections from 2010 to 2020

Kiryas Joel OCSD total water demand & wastewater projections 2010 to 2020		2000	2010	2011	2012	2013	2014	2015	1016	2017	2018	2019	2020
Combined OCSD WD		**4,383,343**	**5,411,438**	**5,558,039**	**5,711,669**	**5,872,748**	**6,041,726**	**6,219,085**	**6,405,336**	**6,601,027**	**6,806,741**	**7,023,103**	**7,250,778**
Combined Population		**56,074**	**66,480**	**68,033**	**69,652**	**71,338**	**73,096**	**74,929**	**76,841**	**78,835**	**80,917**	**83,089**	**85,358**
Combined OCSD Population		**44,065**	**54,237**	**55,712**	**57,251**	**58,857**	**60,534**	**62,284**	**64,113**	**66,024**	**68,020**	**70,107**	**72,289**
Combined Housing units		**13,316**	**16,537**	**17,046**	**17,586**	**18,162**	**18,776**	**19,430**	**20,129**	**20,875**	**21,673**	**22,527**	**23,441**
Combined Wastewater Rqmts DEC		**5,767,565**	**7,495,192**	**7,746,497**	**8,014,501**	**8,300,558**	**8,606,137**	**8,932,830**	**9,282,364**	**9,656,611**	**10,057,604**	**10,487,546**	**10,948,825**
Combined Household Occupancy		**3.3**	**3.3**	**3.3**	**3.3**	**3.2**	**3.2**	**3.2**	**3.2**	**3.2**	**3.1**	**3.1**	**3.1**

Comments:

- By the end of 2020 the OCSD will have had to have doubled our wastewater capacity to support the 11 mgd as reflected in the projections above.

D. Kiryas Joel's Population, Water Demand and Wastewater Projections from 2010 to 2020 using the U.S. Census Housing rate of growth of 85% over 10 years (converts to a 6.35% rate of growth per year.)

1. If my concern is correct and the population of Kiryas Joel was incorrect as reported in the 2010 Census and the population grew consistent with the housing growth (i.e. what is the current vacancy rate within Kiryas Joel?) then the population in 2010 would have been 24,687 and not the 20,175 that was reported. This table projects the resulting growth from 2011 to 2020 using the assumption that 2010 had full occupancy of all housing units in 2010.

Kiryas Joel OCSD total water demand projections 2010 to 2020	Per Capita Water Demand KJ FEIS	2000	2010	2011	2012	2013	2014	2015	1016	2017	2018	2019	2020
V/Kiryas Joel OCSD WD	72	1,064,367	2,071,766	2,150,267	2,293,962	2,447,390	2,611,220	2,786,169	2,973,004	3,172,546	3,385,673	3,613,326	3,856,511
V/Kiryas Joel Total Population		13,128	24687	25,420	27,035	28,751	30,577	32,519	34,584	36,780	39,115	41,599	44,240
V/Kiryas Joel OCSD Populiation		13,128	24,687	25,420	27,035	28,751	30,577	32,519	34,584	36,780	39,115	41,599	44,240
V/Kiryas Joel Housing units		2,233	4,136	4,488	4,871	5,286	5,737	6,225	6,756	7,332	7,957	8,635	9,371
V/Kiyras Wastewater Rqmts DEC		1,002,059	2,162,676	2,346,915	2,546,849	2,763,816	2,999,266	3,254,774	3,532,049	3,832,946	4,159,475	4,513,822	4,898,356
V/Kiryas Joel Household Occupancy		5.9	6.0	5.7	5.6	5.4	5.3	5.2	5.1	5.0	4.9	4.8	4.7

Comments: Note that the occupancy rate is more stable and more than it was when we used the U.S. Census Population growth rate data and more like the other OCSD municipalities shown above. This suggests that we should questions the U.S. Census population data for Kiryas Joel.

Appendix B_02 – 2021 to 2030 Projections: OCSD Communities Population growth and water Demand based on U.S. Census growth rate for each municipality and the Water Demand data found in the Water Master Plan and the Kiryas Joel FEIS Document.

A. Non- Kiryas Joel Municipalities in the OCSD – Population, Water Demand and Wastewater Projections from 2021 2030

Other OCSD municipalities Projections 2021 to 2030	Per Capita Water		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
So. Blooming Grove OCSD Water Demand	77		228,084	229,326	230,575	231,830	233,093	234,362	235,638	236,921	238,211	239,508
VSBG Total Population			3,433	3,452	3,471	3,489	3,508	3,528	3,547	3,566	3,585	3,605
VSBG OCSD Population			2,962	2,978	2,994	3,011	3,027	3,044	3,060	3,077	3,094	3,110
VSBG Housing units			1,160	1,166	1,173	1,179	1,186	1,192	1,199	1,205	1,212	1,219
V/SBG Wastewater Req'mts			498,825	501,566	504,322	507,094	509,880	512,682	515,499	518,331	521,179	524,043
VSBG Occupancy rates			2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55
Town of Chester OCSD Water Demand	110.9		341,259	341,600	341,942	342,284	342,626	342,969	343,312	343,655	343,999	344,343
T/Chester Total Population			8,101	8,109	8,117	8,125	8,133	8,141	8,149	8,157	8,166	8,174
T/Chester OCSD Population			3,077	3,080	3,083	3,086	3,090	3,093	3,096	3,099	3,102	3,105
T/Chester Housing units			1,128	1,137	1,146	1,155	1,164	1,173	1,182	1,191	1,200	1,210
T/Chester Wastewater Req'mts			485,117	488,896	492,704	496,542	500,410	504,308	508,237	512,196	516,186	520,206
T/Chester Occupancy rates			2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6
Village of Chester OCSD Water Demand	156.6		707,752	718,517	729,446	740,541	751,805	763,240	774,850	786,635	798,600	810,748
V/Chester Total Population			4,686	4,757	4,830	4,903	4,978	5,053	5,130	5,208	5,287	5,368
V/Chester OCSD Population			4,519	4,588	4,658	4,729	4,801	4,874	4,948	5,023	5,100	5,177
V/Chester Housing units			1,900	1,925	1,950	1,976	2,002	2,028	2,055	2,082	2,109	2,137
V/Chester Wastewater Req'mts			816,962	827,686	838,551	849,559	860,711	872,010	883,457	895,054	906,804	918,708
V/Chester Occupancy rates			2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Town of Monroe OCSD Water Demand	79		338,794	341,700	344,630	347,585	350,565	353,572	356,603	359,661	362,745	365,856
T/Monroe Total Population			10,546	10,636	10,727	10,819	10,912	11,006	11,100	11,195	11,291	11,388
T/Monroe OCSD Population			4,289	4,325	4,362	4,400	4,438	4,476	4,514	4,553	4,592	4,631
T/Monroe Housing units			1,533	1,547	1,560	1,574	1,587	1,601	1,615	1,629	1,643	1,657
T/Monroe Wastewater Req'mts			659,395	665,083	670,820	676,607	682,443	688,330	694,267	700,256	706,296	712,389
T/Monroe Occupancy rates			2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Village of Monroe OCSD Water Demand	111.6		1,007,848	1,015,413	1,023,035	1,030,715	1,038,452	1,046,247	1,054,100	1,062,013	1,069,985	1,078,016
V/Monroe Total Population			9,081	9,149	9,218	9,287	9,357	9,427	9,498	9,569	9,641	9,713
V/Monroe OCSD Populiation			9,031	9,099	9,167	9,236	9,305	9,375	9,445	9,516	9,588	9,660
V/Monroe Housing units			3,128	3,155	3,182	3,210	3,237	3,265	3,293	3,322	3,350	3,379
V/Monroe Wastewater Req'mts			1,345,039	1,356,641	1,368,344	1,380,147	1,392,052	1,404,060	1,416,171	1,428,387	1,440,708	1,453,136
V/Monroe Occupancy rates			2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9

Other OCSD municipalities Projections 2021 to 2030	Per Capita Water		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Town-Village of Woodbury OCSD Water Demand	103.2		1,263,210	1,289,555	1,316,450	1,343,906	1,371,934	1,400,547	1,429,757	1,459,575	1,490,016	1,521,092
T-V/Woodbury Total Population			13,430	13,710	13,996	14,288	14,586	14,890	15,200	15,517	15,841	16,171
T-V/Woodbury OCSD Population			12,240	12,496	12,756	13,022	13,294	13,571	13,854	14,143	14,438	14,739
T-V/Woodbury Housing units			4,047	4,117	4,189	4,262	4,336	4,411	4,488	4,566	4,645	4,726
V/Monroe Wastewater Req'mts			1,740,209	1,770,471	1,801,259	1,832,583	1,864,451	1,896,874	1,929,861	1,963,421	1,997,564	2,032,302
T-V/Woodbury Occupancy rates			3.0	3.0	3.0	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Village of Harriman OCSD Water Demand	110.2		290,444	292,662	294,898	297,150	299,419	301,706	304,011	306,333	308,672	311,030
V/Harriman Total Population			2,636	2,656	2,676	2,696	2,717	2,738	2,759	2,780	2,801	2,822
V/Harriman OCSD Population			2,636	2,656	2,676	2,696	2,717	2,738	2,759	2,780	2,801	2,822
V/Harriman Housing units			1,355	1,389	1,423	1,458	1,494	1,530	1,568	1,606	1,646	1,686
V/Harriman Wastewater Req'mts			582,837	597,148	611,810	626,832	642,223	657,992	674,148	690,701	707,660	725,035
V/Harriman Occupancy rates			1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.7	1.7	1.7
Other OCSD Municipalities WD			**4,177,391**	**4,228,774**	**4,280,975**	**4,334,011**	**4,387,895**	**4,442,643**	**4,498,271**	**4,554,794**	**4,612,229**	**4,670,593**
Other OCSD Municipalities Pop'tion			**51,912**	**52,468**	**53,034**	**53,608**	**54,191**	**54,782**	**55,383**	**55,993**	**56,613**	**57,242**
Other OCSD Population			**38,754**	**39,222**	**39,698**	**40,180**	**40,671**	**41,170**	**41,676**	**42,191**	**42,714**	**43,245**
Other OCSD Housing units			**14,252**	**14,436**	**14,623**	**14,812**	**15,005**	**15,201**	**15,399**	**15,601**	**15,806**	**16,014**
Other OCSD Wastewater Req'mts			**6,128,385**	**6,207,492**	**6,287,811**	**6,369,364**	**6,452,171**	**6,536,255**	**6,621,639**	**6,708,345**	**6,796,397**	**6,885,819**
Other OCSD Occupancy rates			**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**

B. Kiryas Joel's Population, Water Demand and Wastewater Projections from 2021 to 2030

Kiryas Joel OCSD total water demand projections 2021 to 2030	Per Capita Water Demand KJ FEIS		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
V/Kiryas Joel OCSD WD	72		3,313,088	3,514,193	3,728,081	3,955,605	4,197,683	4,455,295	4,729,490	5,021,395	5,332,214	5,663,240
V/Kiryas Joel Total Population			35,816	37,734	39,755	41,885	44,128	46,492	48,982	51,606	54,370	57,282
V/Kiryas Joel OCSD Population			35,816	37,734	39,755	41,885	44,128	46,492	48,982	51,606	54,370	57,282
V/Kiryas Joel Housing units			10,169	11,036	11,976	12,997	14,104	15,306	16,611	18,027	19,563	21,230
V/Kiyras Joel Wastewater Rqmts DEC			5,325,817	5,779,526	6,271,886	6,806,190	7,386,012	8,015,229	8,698,050	9,439,040	10,243,156	11,115,774
V/Kiryas Joel Household Occupancy			3.5	3.4	3.3	3.2	3.1	3.0	2.9	2.9	2.8	2.7

C. Combined OCSD Municipalities Population, Water Demand and Wastewater Projections from 2021 to 2030

Kiryas Joel OCSD total water demand projections 2021 to 2030			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Combined OCSD WD			**7,490,479**	**7,742,967**	**8,009,056**	**8,289,616**	**8,585,578**	**8,897,937**	**9,227,761**	**9,576,189**	**9,944,444**	**10,333,833**
Combined Population			**87,727**	**5,775,772**	**5,855,680**	**5,936,916**	**6,019,511**	**6,103,490**	**6,188,883**	**6,275,721**	**6,364,032**	**2,814,619**
Combined OCSD Population			**74,570**	**76,956**	**79,453**	**82,065**	**84,799**	**87,661**	**90,658**	**93,796**	**97,083**	**100,527**
Combined Housing units			**24,421**	**25,472**	**26,599**	**27,809**	**29,110**	**30,507**	**32,010**	**33,627**	**35,368**	**37,244**
Combined Wastewater Rqmts DEC			**11,454,202**	**11,987,018**	**12,559,697**	**13,175,554**	**13,838,183**	**14,551,485**	**15,319,689**	**16,147,385**	**17,039,553**	**18,001,593**
Combined Household Occupancy			**3.1**	**3.0**	**3.0**	**3.0**	**2.9**	**2.9**	**2.8**	**2.8**	**2.7**	**2.7**

Comments:

OCSD will have had to triple its wastewater capacity by 2030 based on the above projections.

D. Kiryas Joel's Population, Water Demand and Wastewater Projections from 2010 to 2020 using the U.S. Census Housing rate of growth of 85% over 10 years (converts to a 6.35% rate of growth per year.)

Kiryas Joel OCSD total water demand & wastewater projections 2021 to 2030	Per Capita Water Demand KJ FEIS		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
V/Kiryas Joel OCSD WD	72		4,203,005	4,488,119	4,792,891	5,118,702	5,467,030	5,839,462	6,237,698	6,663,559	7,119,000	7,606,113
V/Kiryas Joel Total Population			47,050	50,037	53,215	56,594	60,188	64,009	68,074	72,397	76,994	81,883
V/Kiryas Joel OCSD Population			47,050	50,037	53,215	56,594	60,188	64,009	68,074	72,397	76,994	81,883
V/Kiryas Joel Housing units			10,169	11,036	11,976	12,997	14,104	15,306	16,611	18,027	19,563	21,230
V/Kiyras Wastewater Rqmts DEC			5,325,817	5,779,526	6,271,886	6,806,190	7,386,012	8,015,229	8,698,050	9,439,040	10,243,156	11,115,774
V/Kiryas Joel Household Occupancy			4.6	4.5	4.4	4.4	4.3	4.2	4.1	4.0	3.9	3.9

Comments:

Occupancy per unit continues to decline in 2021 to 2030 in this scenario also but not as rapidly as it did in the original Scenario in B of this section.

Appendix B_03 – 2031 to 2040 Projections: OCSD Communities Population growth and water Demand based on U.S. Census growth rate for each municipality and the Water Demand data found in the Water Master Plan and the Kiryas Joel FEIS Document.

A. Other OCSD Municipalities Projected Water Demand and Wastewater Projections from 2031 to 2040

Other OCSD municipalities Projections 2031 to 2040	Per Capita Water		2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
South Blooming Grove OCSD Water Demand	77		240,812	242,124	243,442	244,768	246,100	247,440	248,788	250,142	251,504	252,874
VSBG Total Population			3,625	3,644	3,664	3,684	3,704	3,724	3,745	3,765	3,786	3,806
VSBG OCSD Populiation			3,127	3,144	3,162	3,179	3,196	3,214	3,231	3,249	3,266	3,284
VSBG Housing units			1,225	1,232	1,239	1,246	1,253	1,259	1,266	1,273	1,280	1,287
V/SBG Wastewater Rqmts DEC			526,923	529,818	532,729	535,656	538,600	541,559	544,559	547,527	550,536	553,561
VSBG Household Occupancy			2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55
Town of Chester OCSD Water Demand	110.9		344,687	345,032	345,377	345,722	346,068	346,414	346,760	347,107	347,454	347,802
T/Chester Total Population			8,182	8,190	8,198	8,207	8,215	8,223	8,231	8,239	8,248	8,256
T/Chester OCSD Populiation			3,108	3,111	3,114	3,117	3,121	3,124	3,127	3,130	3,133	3,136
T/Chester Housing units			1,219	1,229	1,238	1,248	1,258	1,267	1,277	1,287	1,297	1,307
T/Chester Wastewater Rqmts DEC			524,259	528.342	532,458	536,606	540,786	544,998	549,243	553,522	557,522	562,179
T/Chester Household Occupancy			2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4
Village of Chester OCSD Water Demand	156.6		823,079	835,599	848,309	861,212	874,311	887,610	901,111	914,817	928,732	942,858
V/Chester Total Population			5,450	5,532	5,617	5,702	5,789	5,877	5,966	6,057	6,149	6,243
V/Chester OCSD Populiation			5,256	5,336	5,417	5,499	5,583	5,668	5,754	5,842	5,931	6,021
V/Chester Housing units			2,165	2,193	2,222	2,251	2,280	2,310	2,341	2,371	2,403	2,434
V/Chester Wastewater Rqmts DEC			930,768	942,986	955,365	967,905	980,712	993,484	1,006,526	1,019,739	1,033,125	1,046,687
V/Chester Household Occupancy			2.4	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.5	2.5
Town of Monroe OCSD Water Demand	79		368,993	372,157	375,349	378,567	381,814	385,088	388,390	391,720	395,079	398,467
T/Monroe Total Population			11,486	11,584	11,683	11,784	11,885	11,987	12,089	12,193	12,298	12,403
T/Monroe OCSD Populiation			4,671	4,711	4,751	4,792	4,833	4,875	4,916	4,958	5,001	5,044
T/Monroe Housing units			1,671	1,685	1,700	1,715	1,729	1,744	1,759	1,775	1,790	1,805
T/Monroe Wastewater Rqmts DEC			718,534	724,732	730,983	737,289	743,649	750,063	756,533	763,059	769,641	776,280
T/Monroe Household Occupancy			2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Village of Monroe OCSD Water Demand	111.6		1,086,109	1,094,261	1,102,475	1,110,751	1,119,089	1,127,489	1,135,952	1,144,479	1,153,070	1,161,726
V/Monroe Total Population			9,786	9,860	9,934	10,008	10,083	10,159	10,235	10,312	10,390	10,468
V/Monroe OCSD Populiation			9,732	9,805	9,879	9,953	10,028	10,103	10,179	10,255	10,332	10,410
V/Monroe Housing units			3,409	3,438	3,468	3,498	3,528	3,558	3,589	3,620	3,651	3,682
V/Monroe Wastewater Rqmts DEC			1,465,670	1,478,313	1,491,065	1,503,927	1,516,900	1,529,984	1,543,182	1,556,493	1,569,920	1,583,462
V/Monroe Household Occupancy			2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8

Other OCSD municipalities Projections 2031 to 2040	Per Capita Water		2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Town-Village of Woodbury OCSD Water Demand	103.2		1,552,816	1,585,201	1,618,262	1,652,012	1,686,467	1,721,639	1,757,546	1,794,201	1,831,621	1,869,821
T-V/Woodbury Total Population			16,509	16,853	17,204	17,563	17,929	18,303	18,685	19,075	19,473	19,879
T-V/Woodbury OCSD Populiation			15,047	15,360	15,681	16,008	16,342	16,683	17,030	17,386	17,748	18,118
T-V/Woodbury Housing units			4,808	4,892	4,977	5,064	5,152	5,241	5,333	5,425	5,520	5,616
T/Woodbury Wastewater Rqmts DEC			2,067,643	2,103,600	2,140,181	2,177,399	2,215,263	2,253,787	2,292,980	2,332,855	2,373,423	2,414,696
T-V/Woodbury Household Occupancy			3.1	3.1	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Village of Harriman OCSD Water Demand	110.2		313,405	315,799	318,211	320,641	323,090	325,558	328,044	330,550	333,075	335,618
V/Harriman Total Population			2,844	2,866	2,888	2,910	2,932	2,954	2,977	3,000	3,022	3,046
V/Harriman OCSD Populiation			2,844	2,866	2,888	2,910	2,932	2,954	2,977	3,000	3,022	3,046
V/Harriman Housing units			1,728	1,770	1,813	1,858	1,904	1,950	1,998	2,047	2,098	2,149
V/Monroe Wastewater Rqmts DEC			742,838	761,077	779,764	798,910	818,526	838,624	859,215	880,312	901,927	924,072
V/Harriman Household Occupancy			1.6	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.4	1.4
Total Non Kiryas Joel OCSD WD			**4,729,902**	**4,790,173**	**4,851,425**	**4,913,674**	**4,976,939**	**5,041,238**	**5,106,592**	**5,173,017**	**5,240,536**	**5,309,166**
Total Non Kiryas Joel Population			**57,881**	**58,529**	**59,188**	**59,857**	**60,537**	**61,228**	**61,929**	**62,641**	**63,365**	**64,100**
Total Non Kiryas Joel OCSD Population			**43,785**	**44,334**	**44,891**	**45,458**	**46,034**	**46,619**	**47,214**	**47,819**	**48,434**	**49,059**
Total Non Kiryas Joel Housing units			**16,225**	**16,439**	**16,657**	**16,878**	**17,103**	**17,331**	**17,563**	**17,799**	**18,038**	**18,281**
Total Non Kiyras Wastewater Rqmts DEC			**6,976,634**	**7,068,868**	**7,162,545**	**7,257,692**	**7,354,336**	**7,452,500**	**7,552,215**	**7,653,507**	**7,756,404**	**7,860,937**
Total Non Kiryas Joel Household Occupancy			**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**

B. Kiryas Joel's Population, Water Demand and Wastewater Projections from 2031 to 2040

Kiryas Joel OCSD total water demand & wastewater projections 2031 to 2040	Per Capita Water Demand KJ FEIS		2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
V/Kiryas Joel OCSD WD	72		6,015,857	6,391,550	6,791,911	7,218,647	7,673,591	8,158,708	8,676,107	9,228,054	9,816,979	10,445,494
V/Kiryas Joel Total Population			60,350	63,582	66,988	70,576	74,356	78,339	82,535	86,956	91,613	96,520
V/Kiryas Joel OCSD Populiation			60,350	63,582	66,988	70,576	74,356	78,339	82,535	86,956	91,613	96,520
V/Kiryas Joel Housing units			23,039	25,003	26,342	27,753	29,239	30,805	32,455	34,194	36,025	37,955
V/Kiyras Joel Wastewater Rqmts DEC			12,060,615	13,085,767	14,198,058	15,404,892	16,714,308	18,135,025	19,676,502	21,349,004	23,163,670	25,132,581
V/Kiryas Joel Household Occupancy			2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5

Comments: Note that the population of Kiryas Joel, using the 2000 to 2010 population growth rate now has an occupancy rate almost equal to that of the other OCSD Communities. However, based on their FEIS stated growth dynamics this cannot be correct. Therefore, the current population growth rate supported by the U.S. Census is suspect as bases for projecting Growth in Kiryas Joel.

C. Combined OCSD Municipalities Population, Water Demand and Wastewater Projections from 2031 to 2040

Combined Kiryas Joel and Other OCSD communities total water demand & wastewater projections 2031 to 2040			2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Combined OCSD WD			10,745,759	11,181,723	11,643,336	12,132,321	12,650,530	13,199,946	13,782,699	14,401,072	15,057,515	15,754,660
Combined Population			118,231	6,141,072	6,225,784	6,311,937	6,399,561	6,488,690	6,579,357	6,671,597	6,765,445	2,853,858
Combined OCSD Population			104,135	107,916	111,879	116,034	120,390	124,958	129,749	134,775	140,047	145,579
Combined Housing units			39,264	41,442	42,999	44,631	46,342	48,137	50,019	51,993	54,063	56,236
Combined Wastewater Rqmts DEC			19,037,249	20,154,635	21,360,603	22,662,585	24,068,643	25,587,524	27,228,716	29,002,511	30,920,074	32,993,518
Combined Household Occupancy			2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	1.6

OCSD Wastewater Projections Could Result in a Significant Financial Burden on the User Communities

Note that the occupancy rate has leveled off by 2040 and begins to increase for Kiryas Joel.

This scenario increases the 2040 Kiryas Joel population by 55,034 over the U.S. Census population growth presented above and will result in a 25% increase in the water demand for this community. Since wastewater is based on DEC guidelines of number of bedrooms per housing unit, it does not change. (This is the weakness in using bedrooms per housing unit for determining capacity.)

However, wastewater is a major concern because:

1. We have wastewater capacity of 6.9 million gallons per day with Kiryas Joel requiring 2.5 mgd (based on this analysis).
2. In 2040 they will require 25 mgd so they will require an additional 22.5 mgd to support the projected housing growth in this assessment.
3. However, there are a couple issues that need to be addressed related to the Pre-industrial treatment of the chicken processing plant that is located in Kiryas Joel. As the population grows so will the demand for the chicken processed in this facility and that will drive an increased need for water. By 2040 this Chicken plant will require 3.1 mgd and the problems associated with preventing the animal waste from entering the wastewater treatment plant will be 1,000 times as high as they are now.
4. Now what will this additional capacity cost?

a.) **Assumptions for all wastewater projections**.

1.) In 2006 the county added 1.5 mgd to the OCSD at a cost of $24 million. This was to an already existing facility so the expansion identified in this analysis will have to have a 10% contingency added to support the impact of new locations being identified. This will be applied to the final cost.

- If each location has the same size as our current OCSD then it would require 4 locations so I would suggest that this would add 10% to the estimated additional cost for each location. This would add at least 4 times the $41.4 million, or $165.2 million.

2.) An inflation rate needs to be applied to the $24 million from 2006 to 2013, I used 2% per year to get to 2013 price estimates of $27.6 million which calculates out to $18.34 per gallon of additional capacity in 2013.

3.) Cost of additional infrastructure to dispose of the effluence to other tributaries depends on the distance. Using Kiryas Joel's estimate of $30 million in 2010 to run a pipeline from New Windsor to Kiryas Joel (15 miles) and since

Mr. Benton has been proposing running a pipeline along that route to the Hudson River, we can use this as the worst case example.

- Since we need to get to 2013 prices we need to add 2% a year for inflation. This gives us $32 million to lay the pipe.
- No savings if we lay it parallel to the water pipe for Kiryas Joel since there is a required separation between these two pipes and a new ditch will have to be dug to support the effluence pipe.

Estimated cost of supporting the additional wastewater capacity projected for Kiryas Joel's is (Assumes 2013 prices):

To add 22.5 mgd of wastewater capacity will require an average of 833,333 gallons per year and the information below raises some serious environmental and financial concerns about the viability of this growth and the impact on the environment.

- Added capacity of 22.5 mgd *$18.34 = $413.5 million.
- Additional pipes connecting the communities/users to this new facility and discharging the effluence into a surface water way has not be included.
- Contingency for each additional locations at 10% = $41.4 million to $165.2 million.
- Additional infrastructure to dispose of effluence = $32 million.

Total cost to support Kiryas Joel's growth = $ 486.9 million.

Total interest would depend on the scheduled implementation.

Question: Should the Orange County sewer districts have to help pay for the cost of this?

Estimated cost of supporting the additional wastewater capacity projected for the non Kiryas Joel communities (Assumes 2013 prices):

To add 4.1 mgd of wastewater capacity will require an average of 152,000 gallons per year and combining this to the Kiryas Joel wastewater needs raises the level of concern on how serious the total financial and environmental impacts will be on all of the users of these communities.

- Added capacity of 4.1 mgd *$18.34 = $75.4 million.

- Contingency for each additional locations at 10% = $7.5 million.
- Additional infrastructure to dispose of effluence = $32 million.

Total cost to support non Kiryas Joel communities growth = $ 114.7 million.

Total interest would depend on the scheduled implementation.

Question: Should the Orange County sewer districts have to help pay for the cost of this?

Total Cost of all OCSD communities expansions:

Total cost to support All OCSD communities growth = $ 601.6 million over the next 27 years.

Total interest would depend on the scheduled implementation.

Commercial and Governmental units need to be added and I would assume that the capacity would be about 20% higher than reported.

New sewer extension to link the users to any new plant needs to be determined and added to the total costs.

Question: Can the Orange County sewer district, given the poverty levels that exist within Kiryas Joel, afford this expansion?

D. Kiryas Joel's Population, Water Demand and Wastewater Projections from 2031 to 2040 using the U.S. Housing growth rate from 2000 to 2010 (Converts to a 6.35% rate of growth per year.

Kiryas Joel OCSD total water demand projections 2010 to 2020			2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
V/Kiryas Joel OCSD WD			8,127,146	8,684,507	9,215,475	9,779,060	10,377,277	11,012,262	11,686,284	12,401,754	13,161,231	13,967,433
V/Kiryas Joel Total Population			87,083	92,612	98,493	104,748	111,399	118,473	125,996	133,997	142,505	151,555
V/Kiryas Joel OCSD Populiation			87,083	92,612	98,493	104,748	111,399	118,473	125,996	133,997	142,505	151,555
V/Kiryas Joel Housing units			23,039	25,003	26,342	27,753	29,239	30,805	32,455	34,194	36,025	37,955
V/Kiyras Wastewater Rqmts DEC			12,060,615	13,085,767	14,198,058	15,404,892	16,714,308	18,135,025	19,676,502	21,349,004	23,163,670	25,132,581
V/Kiryas Joel Household Occupancy			3.8	3.7	3.7	3.8	3.8	3.8	3.9	3.9	4.0	4.0

Comments:

Note that the occupancy rate begins to grow in 2039.

Appendix C – Kiryas Joel Housing growth and wastewater requirements projection based on KJ housing growth and DEC wastewater requirements.

A. 2011 to 2020 Wastewater projections for Kiryas Joel's housing growth.

Kiryas Joel Village Housing unites and Wastewater capacity requirements	2000 Census Data	2010 Census Data	2011 projection	2012 projection	2013	2014	2015	2016	2017	2018	2019	2020
Kiryas Joel housing units	2,233	4,136	4,488	4,871	5,286	5,737	6,225	6,756	7,332	7,957	8,635	9,371
#1: KJ WW Capacity for 3 bedrooms units required @ 400 gpd (35% of households)	446,600	827,200	897,695	974,198	1,057,221	1,147,319	1,245,096	1,351,205	1,466,357	1,591,322	1,726,938	1,874,110
#2: KJ WW Capacity for 4 bedrooms units required @ 475 gpd (50% of households)	371,236	687,610	746,209	809,802	878,815	953,709	1,034,986	1,123,189	1,218,909	1,322,787	1,435,517	1,557,854
#3: KJ WW Capacity for 5 bedrooms units required @ 550 gpd (15%)	184,223	341,220	370,299	401,857	436,104	473,269	513,602	557,372	604,872	656,421	712,362	773,070
#4 Chicken processing plant demand.	125,000	306,646	332,711	360,991	391,675	424,968	461,090	500,283	542,807	588,945	639,006	693,321
Total Wastewater estimate	**1,002,059**	**2,162,676**	**2,346,915**	**2,546,849**	**2,763,816**	**2,999,266**	**3,254,774**	**3,532,049**	**3,832,946**	**4,159,475**	**4,513,822**	**4,898,356**

B. 2021 to 2030 Wastewater Projections for Kiryas Joel's housing growth

Kiryas Joel Village Housing units and Wastewater capacity requirements	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Kiryas Joel housing units	10,169	11,036	11,976	12,997	14,104	15,306	16,611	18,027	19,563	21,230
#1: KJ WW Capacity for 3 bedrooms units required @ 400 gpd (35% of households)	2,033,825	2,207,151	2,395,248	2,599,375	2,820,898	3,061,300	3,322,189	3,605,311	3,912,562	4,245,997
#2: KJ WW Capacity for 4 bedrooms units required @ 475 gpd (50% of households)	1,690,617	1,834,694	1,991,050	2,160,731	2,344,872	2,544,706	2,761,570	2,996,915	3,252,317	3,529,485
#3: KJ WW Capacity for 5 bedrooms units required @ 550 gpd (15%)	838,953	910,450	988,040	1,072,242	1,163,621	1,262,786	1,370,403	1,487,191	1,613,932	1,751,474
#4 Chicken processing plant water demand	752,254	816,195	885,572	960,845	1,042,517	1,131,131	1,227,277	1,331,596	1,444,781	1,567,588
Total Wastewater estimate	**5,325,817**	**5,779,526**	**6,271,886**	**6,806,190**	**7,386,012**	**8,015,229**	**8,698,050**	**9,439,040**	**10,243,156**	**11,115,774**

C. 2031 to 2040 Wastewater projections for Kiryas Joel's housing growth

Kiryas Joel Village Housing unites and Wastewater capacity requirements		2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Kiryas Joel housing units		23,039	25,003	26,342	27,753	29,239	30,805	32,455	34,194	36,025	37,955
#1: KJ WW Capacity for 3 bedrooms units required @ 400 gpd (35% of households)		3,225,494	3,500,376	3,687,864	3,885,394	4,093,504	4,312,761	4,543,762	4,787,135	5,043,545	5,313,688
#2: KJ WW Capacity for 4 bedrooms units required @ 475 gpd (50% of households)		5,471,820	5,938,137	6,256,197	6,591,293	6,944,337	7,316,291	7,708,167	8,121,033	8,556,014	9,014,292
#3: KJ WW Capacity for 5 bedrooms units required @ 550 gpd (15%)		1,900,737	2,062,721	2,173,205	2,289,607	2,412,243	2,541,448	2,677,574	2,820,991	2,972,089	3,131,281
#4 Chicken processing plant demand.		1,663,971	1,805,409	1,958,868	2,125,372	2,306,029	2,502,041	2,714,715	2,945,465	3,195,830	3,467,475
Total Wastewater estimate		**12,282,892**	**13,326,938**	**14,459,727**	**15,688,804**	**17,022,352**	**18,469,252**	**20,039,139**	**21,742,466**	**23,590,575**	**25,595,774**

Assumptions and Methodology for this projection:

This projection for wastewater capacity uses the 2000 to 2010 Housing growth for Kiryas Joel of 8.5% to project wastewater capacity required to support their growth. Wastewater capacity is based on a - per housing unit growth and not population.

- Wastewater capacity required for Kiryas Joel is calculated based on Kiryas Joel's U.S. census Housing unit growth 2000 to 2010 and DEC guidance for gallons per day.[36] We assumed the following types of units within Kiryas Joel to estimate capacity:

    a. #1: 35% of the Kiryas Joel housing units have 3 Bedrooms
    b. #2: 50% of the Kiryas Joel housing units have 4 Bedrooms
    c. #3: 15% of the Kiryas Joel housing units have 5 Bedrooms

[36] DEC Publication Division of Water, Design standards for wastewater treatment works 1988.

- *With the exception of the chicken processing plant in Kiryas Joel the non housing units such as commercial and government space is not included in this estimate as I have no way to identify them so the total wastewater is understated as it is calculated above.*
    - *The chicken processing plant located in Kiryas Joel used approximately 306,646 gpd in 2010 and the growth in the demand for that facility is projected above. The chicken plants wastewater growth projection is consistent with the projected growth from 2000 when the water capacity used was 125,000 gpd and at 8.5% growth it would be 306,646 in 2010.*

Appendix D – Other OCSD municipality housing growth and wastewater requirements projection are based on the U.S. Census housing growth and DEC wastewater requirements.

A. 2011 to 2020 Wastewater projections for Non Kiryas Joel Communities Based Housing Growth

Users outside of Kiryas Joel Village Housing and Wastewater Capacity Required to support growth through 2020	% of pop'tion hooked to District	2000 Census Housing Units	2010 Census Housing Units	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Village of South Blooming Grove	86%	1,035	1,092	1,098	1,104	1,110	1,116	1,123	1,129	1,135	1,141	1,147	1,154
Village of Monroe	99%	2,620	2,846	2,871	2,895	2,920	2,945	2,971	2,997	3,022	3,048	3,075	3,101
Town of Monroe	41%	1,201	1,395	1,407	1,419	1,432	1,444	1,456	1,469	1,482	1,494	1,507	1,520
Village of Chester	96%	1,455	1,646	1,668	1,689	1,712	1,734	1,757	1,780	1,803	1,827	1,851	1,875
Town of Chester	38%	961	1,036	1,044	1,052	1,060	1,069	1,077	1,085	1,094	1,102	1,111	1,119
Town/Village of Woodbury	91%	2,852	3,348	3,406	3,465	3,526	3,587	3,649	3,713	3,777	3,843	3,910	3,978
Village of Woodbury													
Village of Harriman	100%	958	1,038	1,063	1,090	1,116	1,144	1,172	1,201	1,230	1,260	1,291	1,323
Total OCSD Population:		**11,083**	**12,401**	**12,557**	**12,715**	**12,876**	**13,039**	**13,205**	**13,373**	**13,543**	**13,717**	**13,892**	**14,071**
Wastewater requirement for OCSD residents		**4,931,745**	**5,332,516**	**5,399,582**	**5,467,652**	**5,536,743**	**5,606,871**	**5,678,056**	**5,750,314**	**5,823,666**	**5,898,129**	**5,973,724**	**6,050,469**

B. 2021 to 2030 Wastewater projections for Non Kiryas Joel Communities Based Housing Growth

Users outside of Kiryas Joel Village Housing and Wastewater Capacity Required to support growth through 2030	% of population hooked to District			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Village of South Blooming Grove	86%			1,160	1,166	1,173	1,179	1,186	1,192	1,199	1,205	1,212	1,219
Village of Monroe	99%			3,128	3,155	3,182	3,210	3,237	3,265	3,293	3,322	3,350	3,379
Town of Monroe	41%			1,533	1,547	1,560	1,574	1,587	1,601	1,615	1,629	1,643	1,657
Village of Chester	96%			1,900	1,925	1,950	1,976	2,002	2,028	2,055	2,082	2,109	2,137
Town of Chester	38%			1,128	1,137	1,146	1,155	1,164	1,173	1,182	1,191	1,200	1,210
Town/Village of Woodbury	91%			4,047	4,117	4,189	4,262	4,336	4,411	4,488	4,566	4,645	4,726
Village of Woodbury													
Village of Harriman	100%			1,355	1,389	1,423	1,458	1,494	1,530	1,568	1,606	1,646	1,686
Total Non KJ OCSD Population:				14,252	14,436	14,623	14,812	15,005	15,201	15,399	15,601	15,806	16,014
Wastewater requirement for OCSD residents				6,128,385	6,207,492	6,287,811	6,369,364	6,452,171	6,536,255	6,621,639	6,708,345	6,796,397	6,885,819

C. *2031 to 2040 Wastewater projections for Non Kiryas Joel Communities Based Housing Growth*

Users outside of Kiryas Joel Village Housing and Wastewater Capacity Required to support growth through 2030	% of population hooked to District			2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Village of South Blooming Grove	86%			1,225	1,232	1,239	1,246	1,253	1,259	1,266	1,273	1,280	1,287
Village of Monroe	99%			3,409	3,438	3,468	3,498	3,528	3,558	3,589	3,620	3,651	3,682
Town of Monroe	41%			1,671	1,685	1,700	1,715	1,729	1,744	1,759	1,775	1,790	1,805
Village of Chester	96%			2,165	2,193	2,222	2,251	2,280	2,310	2,341	2,371	2,403	2,434
Town of Chester	38%			1,219	1,229	1,238	1,248	1,258	1,267	1,277	1,287	1,297	1,307
Town/Village of Woodbury	91%			4,808	4,892	4,977	5,064	5,152	5,241	5,333	5,425	5,520	5,616
Village of Woodbury													
Village of Harriman	100%			1,728	1,770	1,813	1,858	1,904	1,950	1,998	2,047	2,098	2,149
Total Non KJ OCSD Population:				16,225	16,439	16,657	16,878	17,103	17,331	17,563	17,799	18,038	18,281
Wastewater requirement for OCSD residents				**6,976,634**	**7,068,868**	**7,162,545**	**7,257,692**	**7,354,335**	**7,452,500**	**7,552,215**	**7,653,507**	**7,756,404**	**7,860,937**

Assumptions and Methodology for this projection:

This projection for wastewater capacity uses the 2000 to 2010 Housing growth for each OCSD municipality to project wastewater capacity required to support their growth. Wastewater capacity is based on a - per housing unit growth and not population.

- Wastewater capacity required for these communities is based on the U.S. census Housing unit growth 2000 to 2010 and DEC guidance for gallons per day.[37] We assumed the following types of housing units within all of the municipalities outside of Kiryas Joel to estimate capacity:

    d. #1: 70% of the housing units have 3 Bedrooms
    e. #2: 20% of the housing units have 4 Bedrooms
    f. #3: 10% of the housing units have 5 Bedrooms

- *We have no idea what commercial or governmental housing units exist within the municipalities outside of Kiryas Joel. So the total would be higher than is stated in this analysis. I would assume a 25% uplift to provide an estimate but I am sure the municipalities would be able to provide a better estimate.*

[37] DEC Publication Division of Water, Design standards for wastewater treatment works 1988.

Appendix E _01, 2011 to 2020 Non Kiryas Joel OCSD communities housing growth, water and wastewater projections based on the U.S. Census housing growth and DEC wastewater requirement

A. *Non*- Kiryas Joel Municipalities in the OCSD – Population, Water Demand and Wastewater Projections from 2011 to 2020 based on housing growth rate.

Non Kiryas Joel OCSD total water demand projections 2010 to 2020 based on Housing growth rate	Per Capita Water	2000	2010	2011	2012	2013	2014	2015	1016	2017	2018	2019	2020
So. Blooming Grove OCSD Water Demand	77	203,764	214,859	216,040	217,227	218,420	219,621	220,827	222,041	223,261	224,488	225,721	226,961
VSBG Total Population		3,067	3,234	3,252	3,270	3,288	3,306	3,324	3,342	3,360	3,379	3,397	3,416
VSBG OCSD Population		2,646	2,790	2,806	2,821	2,837	2,852	2,868	2,884	2,899	2,915	2,931	2,948
VSBG Housing units		1,035	1,092	1,098	1,104	1,110	1,116	1,123	1,129	1,135	1,141	1,147	1,154
V/SBG Wastewater Req'mts		445,184	469,646	472,227	474,821	477,430	480,054	482,692	485,344	488,011	490,692	493,388	496,100
VSBG Occupancy rates		2.56	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55
Town of Chester OCSD Water Demand	110.9	340,157	342,807	345,477	348,168	350,880	353,614	356,368	359,144	361,942	364,761	367,602	370,466
T/Chester Total Population		8,074	8,137	8,201	8,265	8,329	8,394	8,459	8,525	8,592	8,658	8,726	8,794
T/Chester OCSD Population		3,067	3,091	3,115	3,139	3,164	3,189	3,213	3,238	3,264	3,289	3,315	3,341
T/Chester Housing units		961	1,036	1,044	1,052	1,060	1,069	1,077	1,085	1,094	1,102	1,111	1,119
T/Chester Wastewater Req'mts		413,239	445,428	448,898	452,395	455,919	459,470	463,049	466,656	470,292	473,955	477,647	481,368
T/Chester Occupancy rates		3.2	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Village of Chester OCSD Water Demand	156.6	520,322	599,465	607,335	615,307	623,384	631,568	639,858	648,258	656,768	665,389	674,124	682,973
V/Chester Total Population		3,445	3,969	4,021	4,074	4,127	4,182	4,236	4,292	4,348	4,405	4,463	4,522
V/Chester OCSD Population		3,323	3,828	3,878	3,929	3,981	4,033	4,086	4,140	4,194	4,249	4,305	4,361
V/Chester Housing units		1,455	1,646	1,668	1,689	1,712	1,734	1,757	1,780	1,803	1,827	1,851	1,875
V/Chester Wastewater Req'mts		625,650	707,780	717,071	726,484	736,021	745,683	755,471	765,389	775,436	785,615	795,928	806,376
V/Chester Occupancy rates		2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Town of Monroe OCSD Water Demand	79	313,401	318,461	323,602	328,826	334,134	339,528	345,009	350,579	356,238	361,989	367,833	373,771
T/Monroe Total Population		9,755	9,913	10,073	10,235	10,401	10,568	10,739	10,912	11,089	11,268	11,449	11,634
T/Monroe OCSD Population		3,967	4,031	4,096	4,162	4,230	4,298	4,367	4,438	4,509	4,582	4,656	4,731
T/Monroe Housing units		1,201	1,395	1,407	1,419	1,432	1,444	1,456	1,469	1,482	1,494	1,507	1,520
T/Monroe Wastewater Req'mts		516,559	599,949	605,124	610,344	615,609	620,919	626,275	631,677	637,126	642,622	648,165	653,756
T/Monroe Occupancy rates		3.3	2.9	2.9	2.9	3.0	3.0	3.0	3.0	3.0	3.1	3.1	3.1

Non Kiryas Joel OCSD total water demand projections 2010 to 2020 based on Housing growth rate	Per Capita Water	2000	2010	2011	2012	2013	2014	2015	1016	2017	2018	2019	2020
Village of Monroe OCSD Water Demand	111.6	936,266	944,342	952,488	960,704	968,991	977,349	985,780	994,283	1,002,860	1,011,510	1,020,235	1,029,036
V/Monroe Total Population		8,436	8,509	8,582	8,656	8,731	8,806	8,882	8,959	9,036	9,114	9,193	9,272
V/Monroe OCSD Populiation		8,389	8,462	8,535	8,608	8,683	8,758	8,833	8,909	8,986	9,064	9,142	9,221
V/Monroe Housing units		2,620	2,846	2,871	2,895	2,920	2,945	2,971	2,997	3,022	3,048	3,075	3,101
V/Monroe Wastewater Req'mts		1,126,600	1,223,780	1,234,336	1,244,984	1,255,723	1,266,555	1,277,480	1,288,499	1,299,614	1,310,824	1,322,131	1,333,536
V/Monroe Occupancy rates		3.2	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Town-Village of Woodbury OCSD Water Demand	103.2	1,024,127	1,041,936	1,060,056	1,078,490	1,097,245	1,116,326	1,135,739	1,155,489	1,175,583	1,196,026	1,216,825	1,237,985
T-V/Woodbury Total Population		10,888	11,077	11,270	11,466	11,665	11,868	12,074	12,284	12,498	12,715	12,937	13,162
T-V/Woodbury OCSD Population		9,924	10,096	10,272	10,450	10,632	10,817	11,005	11,197	11,391	11,589	11,791	11,996
T-V/Woodbury Housing units		2,852	3,348	3,406	3,465	3,526	3,587	3,649	3,713	3,777	3,843	3,910	3,978
T-V/Woodbury Wastewater Req'mts		1,226,334	1,439,593	1,464,627	1,490,097	1,516,010	1,542,373	1,569,195	1,596,483	1,624,245	1,652,491	1,681,228	1,710,464
T-V/Woodbury Occupancy rates		3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Village of Harriman OCSD Water Demand	110.2	248,170	267,125	269,552	272,025	274,545	277,112	279,728	282,394	285,111	287,881	290,704	293,582
V/Harriman Total Population		2,252	2,424	2,446	2,468	2,491	2,515	2,538	2,563	2,587	2,612	2,638	2,664
V/Harriman OCSD Population		2,252	2,424	2,446	2,468	2,491	2,515	2,538	2,563	2,587	2,612	2,638	2,664
V/Harriman Housing units		958	1,038	1,063	1,090	1,116	1,144	1,172	1,201	1,230	1,260	1,291	1,323
V/Monroe Wastewater Req'mts		411,940	446,340	457,299	468,528	480,032	491,818	503,894	516,266	528,943	541,930	555,236	568,869
V/Harriman Occupancy rates		2.4	2.3	2.3	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.0	2.0
Total Other OCSD Municipalities WD		**3,586,207**	**3,728,995**	**3,774,548**	**3,820,746**	**3,867,599**	**3,915,117**	**3,963,309**	**4,012,187**	**4,061,762**	**4,112,044**	**4,163,044**	**4,214,775**
Other OCSD Municipalities Pop'tion totals		**45,918**	**47,263**	**47,844**	**48,434**	**49,032**	**49,639**	**50,254**	**50,878**	**51,510**	**52,152**	**52,803**	**53,464**
Other OCSD only Population		**33,568**	**34,723**	**35,148**	**35,580**	**36,017**	**36,461**	**36,911**	**37,368**	**37,831**	**38,301**	**38,778**	**39,261**
Other OCSD only Housing units		**11,083**	**12,401**	**12,557**	**12,715**	**12,876**	**13,039**	**13,205**	**13,373**	**13,543**	**13,717**	**13,892**	**14,071**
Other OCSD Wastewater Req'mts		**4,765,506**	**5,332,516**	**5,399,582**	**5,467,652**	**5,536,743**	**5,606,871**	**5,678,056**	**5,750,314**	**5,823,666**	**5,898,129**	**5,973,724**	**6,050,469**
Other OCSD Occupancy rates		**3.0**	**2.8**	**2.8**	**2.8**	**2.8**	**2.8**	**2.8**	**2.8**	**2.8**	**2.8**	**2.8**	**2.8**

B. Kiryas Joel Municipalities in the OCSD – Population, Water Demand and Wastewater Projections from 2011 to 2020 based on housing growth rate.

Kiryas Joel OCSD total water demand projections 2011 to 2020 based on KJ FEIS water demand critieria and U.S. Census Population	Per Capita Water Demand KJ FEIS	2000	2010	2011	2012	2013	2014	2015	1016	2017	2018	2019	2020
V/Kiryas Joel OCSD WD	72	1,064,367	1,749,158	1,898,157	2,059,847	2,235,311	2,425,721	2,632,350	2,856,581	3,099,913	3,363,973	3,650,526	3,961,488
V/Kiryas Joel Total Population		13,138	20,175	21,894	23,760	25,785	27,983	30,367	32,955	35,764	38,812	42,119	45,709
V/Kiryas Joel OCSD Population		13,138	20,175	21,894	23,760	25,785	27,983	30,367	32,955	35,764	38,812	42,119	45,709
V/Kiryas Joel Housing units		2,233	4,136	4,488	4,871	5,286	5,737	6,225	6,756	7,332	7,957	8,635	9,371
V/Kiyras Wastewater Rqmts DEC		1,002,059	2,162,676	2,346,915	2,546,849	2,763,816	2,999,266	3,254,774	3,532,049	3,832,946	4,159,475	4,513,822	4,898,356
V/Kiryas Joel Household Occupancy		5.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9

C. Combined Municipalities in the OCSD – Population, Water Demand and Wastewater Projections from 2011 to 2020 based on housing growth rate.

OCSD total water demand projections 2011 to 2020 based on KJ FEIS water demand critieria and U.S. Census Population		2000	2010	2011	2012	2013	2014	2015	1016	2017	2018	2019	2020
Combined OCSD WD		**4,650,574**	**5,478,153**	**5,672,705**	**5,880,593**	**6,102,910**	**6,340,837**	**6,595,660**	**6,868,769**	**7,161,675**	**7,476,017**	**7,813,570**	**8,176,262**
Combined Population		**59,056**	**67,438**	**69,739**	**72,194**	**74,817**	**77,621**	**80,621**	**83,833**	**87,274**	**90,964**	**94,923**	**99,172**
Combined OCSD Population		**46,706**	**54,898**	**57,042**	**59,340**	**61,802**	**64,444**	**67,278**	**70,323**	**73,595**	**77,113**	**80,897**	**84,970**
Combined Housing units		**13,316**	**16,537**	**17,046**	**17,586**	**18,162**	**18,776**	**19,430**	**20,129**	**20,875**	**21,673**	**22,527**	**23,441**
Combined Wastewater Rqmts DEC		**5,767,565**	**7,495,192**	**7,746,497**	**8,014,501**	**8,300,558**	**8,606,137**	**8,932,830**	**9,282,364**	**9,656,611**	**10,057,604**	**10,487,546**	**10,948,825**
Combined Household Occupancy		**3.5**	**3.3**	**3.3**	**3.4**	**3.4**	**3.4**	**3.5**	**3.5**	**3.5**	**3.6**	**3.6**	**3.6**

Appendix E _02, 2021 to 2030 Non Kiryas Joel OCSD communities housing growth, water and wastewater projections based on the U.S. Census housing growth and DEC wastewater requirement

A. Non- Kiryas Joel Municipalities in the OCSD – Population, Water Demand and Wastewater Projections from 2021 to 2030 based on housing growth rate

Other OCSD municipalities Projections 2021 to 2030	Per Capita Water		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
So. Blooming Grove OCSD Water Demand	77		228,208	229,462	230,723	231,991	233,266	234,547	235,836	237,132	238,435	239,745
VSBG Total Population			3,435	3,454	3,473	3,492	3,511	3,530	3,550	3,569	3,589	3,609
VSBG OCSD Population			2,964	2,980	2,996	3,013	3,029	3,046	3,063	3,080	3,097	3,114
VSBG Housing units			1,160	1,166	1,173	1,179	1,186	1,192	1,199	1,205	1,212	1,219
V/SBG Wastewater Req'mts			498,825	501,566	504,322	507,094	509,880	512,682	515,499	518,331	521,179	524,043
VSBG Occupancy rates			2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55
Town of Chester OCSD Water Demand	110.9		367,602	370,466	373,352	376,260	379,191	382,145	385,121	388,121	391,145	394,192
T/Chester Total Population			8,726	8,794	8,862	8,931	9,001	9,071	9,142	9,213	9,285	9,357
T/Chester OCSD Population			3,315	3,341	3,367	3,393	3,419	3,446	3,473	3,500	3,527	3,554
T/Chester Housing units			1,128	1,137	1,146	1,155	1,164	1,173	1,182	1,191	1,200	1,210
T/Chester Wastewater Req'mts			485,117	488,896	492,704	496,542	500,410	504,308	508,237	512,196	516,186	520,206
T/Chester Occupancy rates			2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Village of Chester OCSD Water Demand	156.6		691,939	701,022	710,224	719,547	728,993	738,563	748,258	758,080	768,032	778,114
V/Chester Total Population			4,581	4,641	4,702	4,764	4,827	4,890	4,954	5,019	5,085	5,152
V/Chester OCSD Population			4,419	4,477	4,535	4,595	4,655	4,716	4,778	4,841	4,904	4,969
V/Chester Housing units			1,900	1,925	1,950	1,976	2,002	2,028	2,055	2,082	2,109	2,137
V/Chester Wastewater Req'mts			816,962	827,686	838,551	849,559	860,711	872,010	883,457	895,054	906,804	918,708
V/Chester Occupancy rates			2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Town of Monroe OCSD Water Demand	79		367,833	341,700	344,630	347,585	350,565	353,572	356,603	359,661	362,745	424,859
T/Monroe Total Population			11,449	10,636	10,727	10,819	10,912	11,006	11,100	11,195	11,291	13,225
T/Monroe OCSD Population			4,656	4,325	4,362	4,400	4,438	4,476	4,514	4,553	4,592	5,378
T/Monroe Housing units			1,533	1,547	1,560	1,574	1,587	1,601	1,615	1,629	1,643	1,657
T/Monroe Wastewater Req'mts			659,395	665,083	670,820	676,607	682,443	688,330	694,267	700,256	706,296	712,389
T/Monroe Occupancy rates			3.0	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	3.2
Village of Monroe OCSD Water Demand	111.6		1,020,235	1,029,036	1,037,912	1,046,865	1,055,896	1,065,004	1,074,190	1,083,456	1,092,802	1,102,229
V/Monroe Total Population			9,193	9,272	9,352	9,433	9,514	9,596	9,679	9,762	9,847	9,932

Other OCSD municipalities Projections 2021 to 2030	Per Capita Water		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
V/Monroe OCSD Populiation			9,142	9,221	9,300	9,381	9,461	9,543	9,625	9,708	9,792	9,877
V/Monroe Housing units			3,128	3,155	3,182	3,210	3,237	3,265	3,293	3,322	3,350	3,379
V/Monroe Wastewater Req'mts			1,345,039	1,356,641	1,368,344	1,380,147	1,392,052	1,404,060	1,416,171	1,428,387	1,440,708	1,453,136
V/Monroe Occupancy rates			2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Town-Village of Woodbury OCSD Water Demand	103.2		1,216,825	1,237,985	1,259,514	1,281,417	1,303,700	1,326,372	1,349,437	1,372,904	1,396,779	1,421,068
T-V/Woodbury Total Population			12,937	13,162	13,390	13,623	13,860	14,101	14,346	14,596	14,850	15,108
T-V/Woodbury OCSD Population			11,791	11,996	12,205	12,417	12,633	12,852	13,076	13,303	13,535	13,770
T-V/Woodbury Housing units			4,047	4,117	4,189	4,262	4,336	4,411	4,488	4,566	4,645	4,726
V/Monroe Wastewater Req'mts			1,740,209	1,770,471	1,801,259	1,832,583	1,864,451	1,896,874	1,929,861	1,963,421	1,997,564	2,032,302
T-V/Woodbury Occupancy rates			2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Village of Harriman OCSD Water Demand	110.2		296,516	299,508	302,558	305,669	308,842	312,077	315,377	318,744	322,178	325,681
V/Harriman Total Population			2,691	2,718	2,746	2,774	2,803	2,832	2,862	2,892	2,924	2,955
V/Harriman OCSD Population			2,691	2,718	2,746	2,774	2,803	2,832	2,862	2,892	2,924	2,955
V/Harriman Housing units			1,355	1,389	1,423	1,458	1,494	1,530	1,568	1,606	1,646	1,686
V/Harriman Wastewater Req'mts			582,837	597,148	611,810	626,832	642,223	657,992	674,148	690,701	707,660	725,035
V/Harriman Occupancy rates			2.0	2.0	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8
Other OCSD Municipalities WD			**4,189,159**	**4,209,179**	**4,258,913**	**4,309,335**	**4,360,453**	**4,412,279**	**4,464,824**	**4,518,099**	**4,572,116**	**4,685,888**
Other OCSD Municipalities Pop'tion			**53,012**	**52,677**	**53,253**	**53,836**	**54,427**	**55,026**	**55,633**	**56,247**	**56,870**	**59,337**
Other OCSD Population			**38,977**	**39,057**	**39,511**	**39,971**	**40,438**	**40,911**	**41,391**	**41,877**	**42,370**	**43,617**
Other OCSD Housing units			**14,252**	**14,436**	**14,623**	**14,812**	**15,005**	**15,201**	**15,399**	**15,601**	**15,806**	**16,014**
Other OCSD Wastewater Req'mts			**6,128,385**	**6,207,492**	**6,287,811**	**6,369,364**	**6,452,171**	**6,536,255**	**6,621,639**	**6,708,345**	**6,796,397**	**6,885,819**
Other OCSD Occupancy rates			**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**

B. Kiryas Joel Municipalities in the OCSD – Population, Water Demand and Wastewater Projections from 2021 to 2030 based on housing growth rate.

Kiryas Joel OCSD total water demand projections 2021 to 2030	Per Capita Water Demand KJ FEIS		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
V/Kiryas Joel OCSD WD	72		4,385,638	4,759,389	5,164,993	5,605,162	6,082,843	6,601,233	7,163,801	7,774,312	8,436,852	9,155,855
V/Kiryas Joel Total Population			49,604	53,831	58,419	63,397	68,800	74,664	81,027	87,932	95,425	103,558
V/Kiryas Joel OCSD Populiation			49,604	53,831	58,419	63,397	68,800	74,664	81,027	87,932	95,425	103,558
V/Kiryas Joel Housing units			10,169	11,036	11,976	12,997	14,104	15,306	16,611	18,027	19,563	21,230
V/Kiyras Joel Wastewater Rqmts DEC			5,325,817	5,779,526	6,271,886	6,806,190	7,386,012	8,015,229	8,698,050	9,439,040	10,243,156	11,115,774
V/Kiryas Joel Household Occupancy			4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9

C. Combined m unicipalities in the OCSD – Population, Water Demand and Wastewater Projections from 2021 to 2030 based on housing growth rate.

Kiryas Joel OCSD total water demand projections 2021 to 2030	Per Capita Water Demand KJ FEIS		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Combined OCSD WD			**8,574,797**	**8,968,568**	**9,423,906**	**9,914,496**	**10,443,296**	**11,013,512**	**11,628,625**	**12,292,411**	**13,008,968**	**13,841,743**
Combined Population			**102,616**	**5,791,870**	**5,874,343**	**5,958,429**	**6,044,183**	**6,131,662**	**6,220,928**	**6,312,047**	**6,405,088**	**2,860,895**
Combined OCSD Population			**88,581**	**92,888**	**97,930**	**103,369**	**109,238**	**115,575**	**122,417**	**129,809**	**137,796**	**147,175**
Combined Housing units			**24,421**	**25,472**	**26,599**	**27,809**	**29,110**	**30,507**	**32,010**	**33,627**	**35,368**	**37,244**
Combined Wastewater Rqmts DEC			**11,454,202**	**11,987,018**	**12,559,697**	**13,175,554**	**13,838,183**	**14,551,485**	**15,319,689**	**16,147,385**	**17,039,553**	**18,001,593**
Combined Household Occupancy			**3.6**	**3.6**	**3.7**	**3.7**	**3.8**	**3.8**	**3.8**	**3.9**	**3.9**	**4.0**

Appendix E _03, 2031 to 2040 Non Kiryas Joel OCSD communities housing growth, water and wastewater projections based on the U.S. Census housing growth and DEC wastewater requirement

A. Non- Kiryas Joel Municipalities in the OCSD – Population, Water Demand and Wastewater Projections from 2031 to 2040 based on housing growth rate

Other OCSD municipalities Projections 2030 to 2040	Per Capita Water		2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
South Blooming Grove OCSD Water Demand	77		241,063	242,387	243,719	245,058	246,405	247,759	249,120	250,489	251,865	253,249
VSBG Total Population			3,628	3,648	3,668	3,689	3,709	3,729	3,750	3,770	3,791	3,812
VSBG OCSD Populiation			3,131	3,148	3,165	3,183	3,200	3,218	3,235	3,253	3,271	3,289
VSBG Housing units			1,225	1,232	1,239	1,246	1,253	1,259	1,266	1,273	1,280	1,287
V/SBG Wastewater Rqmts DEC			526,923	529,818	532,729	535,656	538,600	541,559	544,535	547,527	550,536	553,561
VSBG Household Occupancy			2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55
Town of Chester OCSD Water Demand	110.9		397,262	400,357	403,475	406,618	409,786	412,978	416,195	419,437	422,704	425,997
T/Chester Total Population			9,430	9,503	9,577	9,652	9,727	9,803	9,879	9,956	10,034	10,112
T/Chester OCSD Populiation			3,582	3,610	3,638	3,667	3,695	3,724	3,753	3,782	3,812	3,841
T/Chester Housing units			1,219	1,229	1,238	1,248	1,258	1,267	1,277	1,287	1,297	1,307
T/Chester Wastewater Rqmts DEC			524,259	528,342	532,458	536,606	540,786	544,998	549,243	553,522	557,834	562,179
T/Chester Household Occupancy			2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Village of Chester OCSD Water Demand	156.6		788,328	798,677	809,161	819,783	830,544	841,447	852,493	863,684	875,021	886,508
V/Chester Total Population			5,219	5,288	5,357	5,428	5,499	5,571	5,644	5,718	5,793	5,869
V/Chester OCSD Populiation			5,034	5,100	5,167	5,235	5,304	5,373	5,444	5,515	5,588	5,661
V/Chester Housing units			2,165	2,193	2,222	2,251	2,280	2,310	2,341	2,371	2,403	2,434
V/Chester Wastewater Rqmts DEC			930,768	942,986	955,365	967,906	980,612	993,484	1,006,526	1,019,739	1,033,125	1,046,687
V/Chester Household Occupancy			2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Town of Monroe OCSD Water Demand	79		431,718	438,687	445,769	452,965	460,278	467,708	475,259	482,931	490,727	498,649
T/Monroe Total Population			13,438	13,655	13,875	14,099	14,327	14,558	14,793	15,032	15,275	15,521
T/Monroe OCSD Populiation			5,465	5,553	5,643	5,734	5,826	5,920	6,016	6,113	6,212	6,312
T/Monroe Housing units			1,671	1,685	1,700	1,715	1,729	1,744	1,759	1,775	1,790	1,805
T/Monroe Wastewater Rqmts DEC			718,534	724,732	730,983	737,289	743,649	750,063	756,533	763,059	769,641	776,280
T/Monroe Household Occupancy			3.3	3.3	3.3	3.3	3.4	3.4	3.4	3.4	3.5	3.5
Village of Monroe OCSD Water Demand	111.6		1,111,736	1,121,326	1,130,999	1,140,755	1,150,595	1,160,520	1,170,530	1,180,627	1,190,811	1,201,083
V/Monroe Total Population			10,017	10,104	10,191	10,279	10,367	10,457	10,547	10,638	10,730	10,822
V/Monroe OCSD Populiation			9,962	10,048	10,134	10,222	10,310	10,399	10,489	10,579	10,670	10,762
V/Monroe Housing units			3,409	3,438	3,468	3,498	3,528	3,558	3,589	3,620	3,651	3,682

Other OCSD municipalities Projections 2030 to 2040	Per Capita Water		2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
V/Monroe Wastewater Rqmts DEC			1,465,670	1,478,313	1,491,065	1,503,927	1,516,900	1,529,984	1,543,182	1,556,493	1,569,920	1,583,462
V/Monroe Household Occupancy			2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Town-Village of Woodbury OCSD Water Demand	103.2		1,445,781	1,470,923	1,496,502	1,522,526	1,549,003	1,575,940	1,603,345	1,631,227	1,659,594	1,688,454
T-V/Woodbury Total Population			15,371	15,638	15,910	16,187	16,468	16,754	17,046	17,342	17,644	17,951
T-V/Woodbury OCSD Populiation			14,010	14,253	14,501	14,753	15,010	15,271	15,536	15,806	16,081	16,361
T-V/Woodbury Housing units			4,808	4,892	4,977	5,064	5,152	5,241	5,333	5,425	5,520	5,616
T/Woodbury Wastewater Rqmts DEC			2,067,643	2,103,600	2,140,181	2,177,399	2,215,263	2,253,787	2,292,980	2,332,855	2,373,423	2,414,696
T-V/Woodbury Household Occupancy			2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Village of Harriman OCSD Water Demand	110.2		329,256	332,903	336,625	340,423	344,298	348,254	352,292	356,413	360,620	364,915
V/Harriman Total Population			2,988	3,021	3,055	3,089	3,124	3,160	3,197	3,234	3,272	3,311
V/Harriman OCSD Populiation			2,988	3,021	3,055	3,089	3,124	3,160	3,197	3,234	3,272	3,311
V/Harriman Housing units			1,728	1,770	1,813	1,858	1,904	1,950	1,998	2,047	2,098	2,149
V/Monroe Wastewater Rqmts DEC			742,838	761,077	779,764	798,910	818,526	838,624	859,215	880,312	901,927	924,072
V/Harriman Household Occupancy			1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.5
Other OCSD Municipalities WD			**4,745,144**	**4,805,260**	**4,866,250**	**4,928,128**	**4,990,908**	**5,054,605**	**5,119,233**	**5,184,808**	**5,251,343**	**5,318,855**
Other OCSD Municipalities Pop'tion			**60,091**	**60,857**	**61,634**	**62,422**	**63,222**	**64,033**	**64,856**	**65,691**	**66,539**	**67,399**
Other OCSD Population			**44,171**	**44,733**	**45,303**	**45,882**	**46,469**	**47,065**	**47,670**	**48,283**	**48,906**	**49,538**
Other OCSD Housing units			**16,225**	**16,439**	**16,657**	**16,878**	**17,103**	**17,331**	**17,563**	**17,799**	**18,038**	**18,281**
Other OCSD Wastewater Req'mts			**6,976,634**	**7,068,868**	**7,162,545**	**7,257,692**	**7,354,335**	**7,452,500**	**7,552,215**	**7,653,507**	**7,756,404**	**7,860,937**
Other OCSD Occupancy rates			**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**	**2.7**

B. *Kiryas Joel Municipalities in the OCSD – Population, Water Demand and Wastewater Projections from 2031 to 2040 based on housing growth rate*

Kiryas Joel OCSD total water demand projections 2030 to 2040	Per Capita Water Demand KJ FEIS		2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
V/Kiryas Joel OCSD WD	72		9,936,132	10,782,906	11,636,539	12,559,422	13,557,269	14,636,272	15,803,138	17,065,137	18,430,146	19,906,699
V/Kiryas Joel Total Population			112,383	121,961	132,354	143,634	155,874	169,158	183,574	199,219	216,197	234,621
V/Kiryas Joel OCSD Populiation			112,383	121,961	132,354	143,634	155,874	169,158	183,574	199,219	216,197	234,621
V/Kiryas Joel Housing units			23,039	25,003	26,342	27,753	29,239	30,805	32,455	34,194	36,025	37,955
V/Kiyras Joel Wastewater Rqmts DEC			12,060,615	13,085,767	14,198,058	15,404,892	16,714,308	18,135,025	19,676,502	21,349,004	23,163,670	25,132,581
V/Kiryas Joel Household Occupancy			4.9	4.9	5.0	5.2	5.3	5.5	5.7	5.8	6.0	6.2

C. *Combined Municipalities in the OCSD – Population, Water Demand and Wastewater Projections from 2031 to 2040 based on housing growth rate*

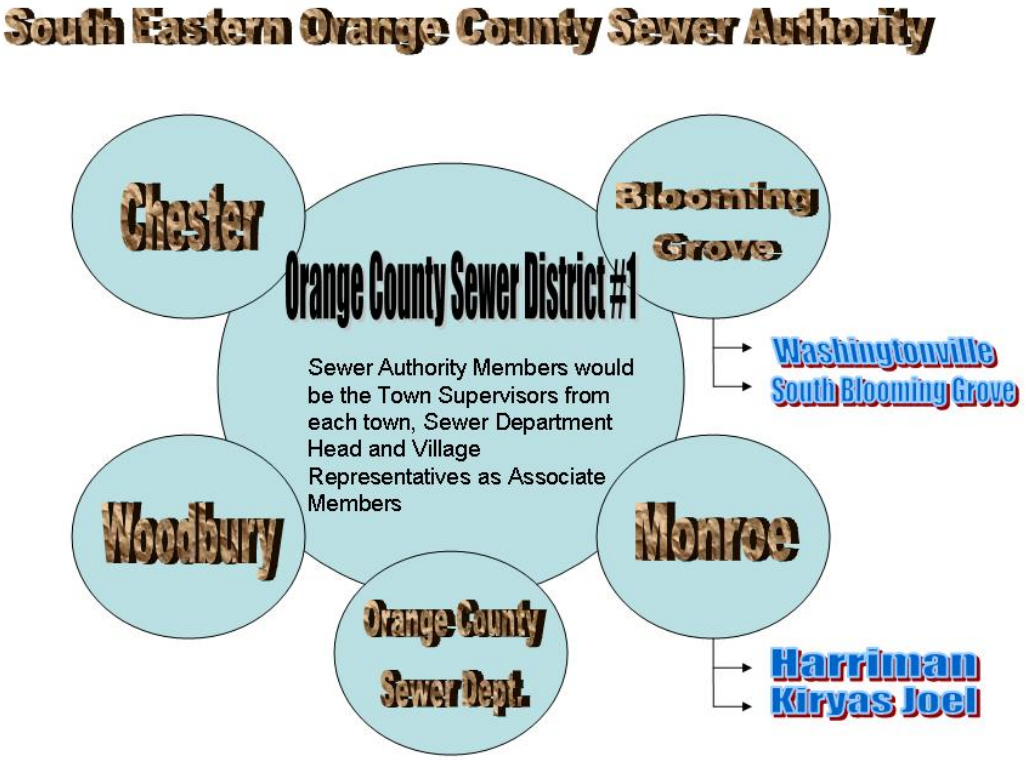
Combined OCSD total water demand projections 2030 to 2040	Per Capita Water Demand KJ FEIS		2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Combined OCSD WD			**14,681,276**	**15,588,166**	**16,502,789**	**17,487,550**	**18,548,177**	**19,690,877**	**20,922,372**	**22,249,945**	**23,681,489**	**25,225,554**
Combined Population			**172,475**	**6,199,450**	**6,291,151**	**6,384,994**	**6,481,079**	**6,579,509**	**6,680,396**	**6,783,860**	**6,890,029**	**2,991,959**
Combined OCSD Population			**156,554**	**166,693**	**177,657**	**189,516**	**202,344**	**216,223**	**231,244**	**247,502**	**265,103**	**284,159**
Combined Housing units			**39,264**	**41,442**	**42,999**	**44,631**	**46,342**	**48,137**	**50,019**	**51,993**	**54,063**	**56,236**
Combined Wastewater Rqmts DEC			**19,037,249**	**20,154,635**	**21,360,603**	**22,662,585**	**24,068,643**	**25,587,524**	**27,228,716**	**29,002,511**	**30,920,074**	**32,993,518**
Combined Household Occupancy			**4.0**	**4.0**	**4.1**	**4.2**	**4.4**	**4.5**	**4.6**	**4.8**	**4.9**	**5.1**

Appendix F – A proposal for a change in Governance for the OCSD

A proposal

Changing the Governance of the

Orange County Sewer District



Robert A. Fromaget
August 1, 2006

Proposal for an Orange County Sewer Authority

The purpose of this document is to suggest a "Home Rule" alternative to the proposed Local Law No. 6 of 2006 for the Harriman Sewage Treatment Plan. The law will still need to be defined but with the involvement of the communities that are using the capacity and paying the bills.

Current Problems that need to be addressed

There are currently a number of problems that exist in the Orange County Sewer District that the proposed law does not address. They are as follows:

1. The municipalities were not consulted on the new law that is being voted on August 3, 2006.
2. The change to the EPA was a surprise to the users of the OCSD when they found out.
3. The municipalities that use the Orange County Sewer District are not consulted when the Orange County Budget is built.
    1.) When the municipalities have questions concerning the Sewer District they cannot get answers.
    2.) Budget expenses have been identified that have not been discussed with the members who are paying for them.
        a.) From 2000 to 2003 the OCSD #1 paid approximately $320,000 for excess capacity. In 2004 it was zero but in 2005 and 2006 the payment went to $750,000?
        b.) There are charges for Administration but no information on what this is for. Also, this expense went up approximately 30% in the 2006 budget
    3.) Surpluses have not been applied to future expenses
        a.) 1999 to 2004 Actual data in the Orange County Budget of the Sewer Department has had $3.1 million in surpluses which has not been applied to that department.
        b.) The 2006 Orange County Budget shows an estimated $2.1 million surplus in 2005. Thus, $5.2 million of the funds from the district users has been taken from the OCSD under the current law. The new law suggests that this will be addressed, but the old law was supposed to address this also?
4. The municipalities that pay for this facility are not involved in the decisions concerning borrowing. There are errors/differences between the capital plan and the budget that are not understandable.
5. Requests to the DEC for additional municipal wells are submitted without approval/input from the OCSD No. 1. This has resulted in erroneous information being used to cause that capacity to be brought online ahead of when the sewer capacity required was available. Also, the information presented was misleading in that it suggested that the capacity was "all" available to the requestor.

These are some of the problems that exist. In fact it appears that the municipalities that use this district are told to just pay your bill and go away. Now this new law says, if you don't there will

be expense consequences. Also, this law suggests that there are specific laws for the Moodna group (Section 3.9) but they do not apply to the users within the OCSD? Will this new law give us better control, or any control, over the decisions made for this sewer district? Is that likely with the same people managing the facility?

Orange County Sewer Authority

A better alternative is to create an Orange County Sewer Authority (OCSA) for Orange County Sewer District No. 1. Since the Kiryas Joel Plant is wholly contained within the boundaries of the OCSD No. 1 and both of them dump effluence into the Ramapo River, it should be integrated into OCSD No. 1. This authority would be responsible for managing the Harriman and Kiryas Joel Waste Treatment plants with expenses broken out with each communities usage/flows.

Organization

The OCSA would have a board that is comprised of the Supervisors from each town, a representative from the Orange County Sewer Department, with associate membership from the Villages within each of these towns.

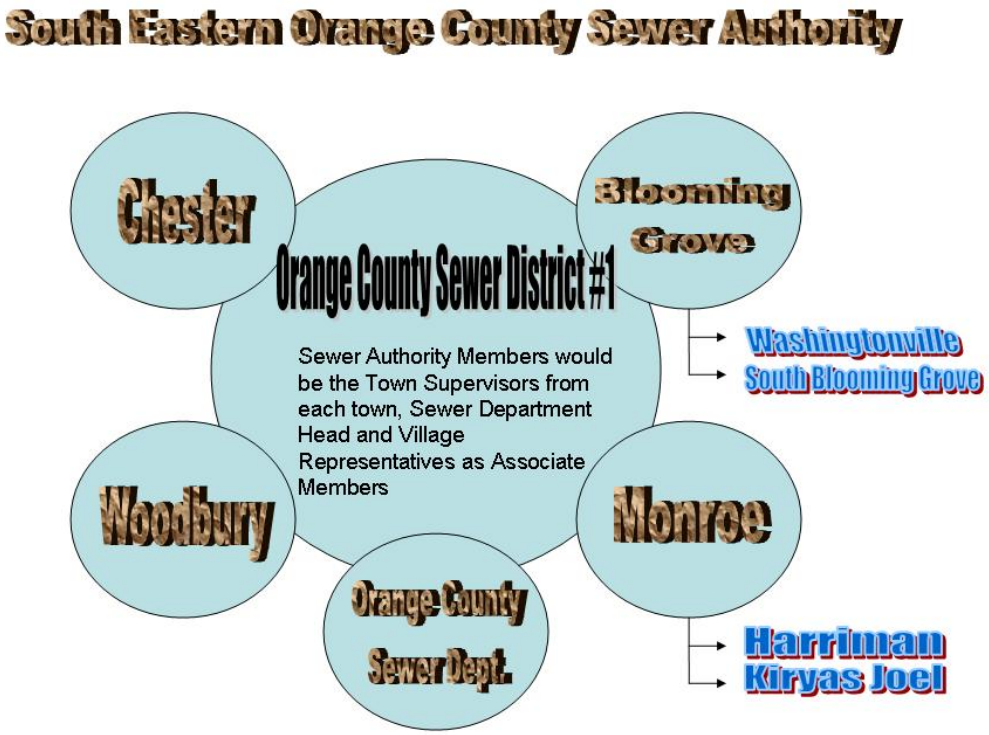


Figure 1.0, Orange County Sewer Authority Organization

This organization would then place the control of this facility within the municipalities that use this facility and ensure that what happens at this facility is in the best interest of the whole user community. Consistent with the Orange County Charter, the County Executive would still be responsible for managing the day to day operation, the County Legislature will still be responsible for the laws and budget, and the OCSA members would have a role in these activities.

Roles and Responsibilities

Chairman of the Board of Directors

The Chairman of the board will be responsible for scheduling and conducting the meetings necessary to complete the activities of the OCSA. In addition, s/he will be responsible for resolving all concerns that are raised by the members of the Authority. This resolution should require a majority vote from the Board of Directors.

OCSA Board of Directors

The Board of Directors would be responsible for the following:

1. Selecting the Chairman from the Board members (A town Supervisor or his/her representative).
2. Defining the methodology for determining the distribution of the available capacity.
3. Working with the County Executive to identify 3 candidates who are acceptable to them to administer this Department.
    a. Once selected this person should be identified as working in that position at the “pleasure of the Board members”.
4. Work with the County legislature to define the law that will govern this facility.
5. Working with the Villages in their municipalities to collect and consolidate their needs for the coming year.
6. Working with the Orange County Sewer Department head to ensure that:
    a. S/he has all the requirements for support in the operating plan year.
    b. The budget is built to include their requirements.
    c. They understand all the expenses identified by the Sewer Department head.
    d. They approve all budget entries for the coming year.
    e. They review any new water sources that are planned during the year that will increase the flows from any of the municipalities who participate in this Authority.
7. Monitoring the budget during the year to ensure that all any changes needed are documented and submitted to the County Executive and County Legislators for their action.

Orange County Sewer Department Head

This person will report to the County Executive and will be responsible for:

1. Representing the County Executive on the board.
2. Manage the day to day operations and work with the County Executive and the Board of Directors to execute the budget as approved.
3. Provide reports during the year as requested by the board and/or County Executive.
4. Identify issues that need to be resolved and/or addressed throughout the operating plan year and provide all supporting documentation needed for further action by the County Executive and County Legislature.

Associate Members

These people will be responsible for:

1. Working with their respective supervisors to ensure their requirements are submitted to their Town Supervisor for consolidation and inclusion in the Orange County Budget (i.e., current capacity needs additional capacity requirements and new water sources that would increase flows.)

Appendix G: Orange County Sewer District Surplus

Year	Revenue	Expenditures	Total:	County Reported Surplus	Surplus as a % of Expenditures	Recommended surplus at 7% (Per Neil Blair)	Excess surplus	Comments
2000	4,502,048	3,959,365	542,683					
2001	4,550,419	4,506,583	43,836					KJ Lease agreement $12,786
2002	4,964,241	4,421,059	543,182					KJ Lease agreement $320,839
2003	5,372,290	4,379,999	992,291					KJ Lease agreement $316,627
2004	5,264,438	4,388,562	875,876					KJ Lease agreement $0
2005	7,010,589	5,845,813	1,164,776	4,162,644	71%	409,207	3,753,437	KJ Lease agreement $279,386
2006	6,916,969	7,775,255	(858,286)	3,304,358	42%	544,268	3,753,437	KJ Lease agreement $316,627
2007	7,625,376	8,283,704	(658,328)	2,646,030	32%	579,859	2,066,171	KJ Lease agreement jumped to $1.5 million[38]
2008	8,176,258	6,422,862	1,753,396	4,3,99,426	68%	449,600	3,949,826	KJ Lease agreement reported -$50,000
2009	8,045,774	8,777,128	(731,354)	3,668,072	42%	614,399	3,053,673	KJ Lease agreement reported - $846,013
2010	8,362,777	7,721,952	640,825	4,308,897	56%	540,537	3,768,360	KJ Lease agreement reported - $700,000
2011	8,991,443	8,789,324	202,119	4,511,016	51%	615,253	3,895,762	KJ Lease agreement reported - $713,421

Table 1.0, contains the actual revenue and expenditures for 2001 through 2011 and the associated surplus / (Deficit) for each of those years. The Kiryas Joel lease agreement is provided because of the sudden growth in that amount despite the continuous problems with animal waste issues and the pretreatment of the waste from the Kiryas Joel Chicken plant.

Note:

The cost of this facility from 2001 to 2011 has grown by 95%, or 9.5% a year. Most of this growth occurred between 2005 and 2006 and is partly due to the lease agreement with Kiryas Joel.

This surplus does not reflect the $742,250 grant received in 2008 or the $500,000 grant received in 2011. These grants are being held in the Capital Plan.

A discussion on OCSD Surplus that occurred at the Physical Services Committee meeting:

[38] Memo to Ms. Manju Cherian, PE, Envirionmental Engineer 2 of the NYS DEC from Deputy Commissioner Richard Hammond dated April 9, 2012, page 2. This document states that "… the Kiryas Joel plant is still only operating at 400,000 gpd …" and that a contributing factor …the unprecedented discharges from the KJ Meat Market [300,000 per day] and the inability of the Village to perform capital repairs both the department and the County have sought over the last several years"

In response to some questions from the legislators at the Physical Services meeting that were not answered by the County employees I put together the above table and provide you with a summary of those questions and what the county budget data shows.

Legislators Question: What is the suggested surplus for a facility like the OCSD?
Neil Blair, Budget Director stated that it is recommended to be about 7.5% of the cost of operating the service/facility.
Legislators Question: What is the cost of operating the OCSD?
Neil Blair, Budget Director stated he did not know.
Facts: The budget surplus accumulated from 2001 to 2011 is $4.5 million and is 51% of the actual cost of the facility.
Legislators Question: If we have a large surplus does this mean we are overcharging the users of that facility?
Response: Based on the guidelines provided by Mr. Neil Blair**, YES!**

In 2008, I advised the Democratic Caucus that the $1.5 million bond that was being requested by the county for OCSD enhancements was not necessary since there was over $5 million in the OCSD Surplus. When Mr. Berkman checked on it he confirmed it was over $5 million. However, my data only goes back to 2001 so I cannot show where the $5 million came from at this time so I changed the surplus to represent the data that I have available to me in the budgets from 2001 t o 2013.

Additional comment on the Request for Equipment Replacement:

1. The county just approved an $865,000 for equipment replacement because it was stated they need this equipment for emergency backup. However, there is another equipment replacement capital item # 842 for equipment replacement for $400,000 that was opened in 2011 and by August 20, 2012 not one dime was spent on that project. So how urgent can this be?
2. When Capital project # 842 was originally proposed in 2011 it was for the Orange County Sewer District Capital Project # 118[39]. In 2012 it appeared on the Authorized and Approved list for the Sewer District but in 2013 it was moved to the Environmental Facilities Services section of the Capital Plan. Why? Is this because it is a Kiryas Joel Project? Who is paying for it? This raises questions regarding the urgency of this bond and it needs to be investigated further as does everything that is going on in the Orange County Sewer District.

********** End of Document **********

[39] 2011 Capital Plan, Proposed Sewer Projects list, Page 10.