Plant to Plant Agreement
Between
Ithaca Area Wastewater Treatment Plant
And
Village of Cayuga Heights Wastewater Treatment Plant

This agreement is made the _ _ day of December, 2003., between the ITHACA AREA WASTEWATER TREATMENT PLANT, a municipally owned facility with offices at 535 Third Street, Ithaca, New York 14850, hereafter known as the “IAWWTP”, and “The VILLAGE OF CAYUGA HEIGHTS WASTEWATER TREATMENT PLANT, a municipally owned facility with offices at 951 East Shore Drive, Ithaca, New York 14850, hereafter known as the “VCHWWTP”.

WITNESSTH

WHEREAS, the IAWWTP, owned by the Municipal Corporations the City of Ithaca, the Town of Ithaca, and the Town of Dryden, treats municipal wastewater from the City and Town of Ithaca, as well as portions of the Town of Dryden under the terms of their individual sewer use ordinances, and

WHEREAS, the VCHWWP, owned by the Village of Cayuga Heights, a municipal corporation, treats municipal wastewater from the Village of Cayuga Heights as well as portions of the Towns of Ithaca, Dryden, Lansing and the Village of Lansing under the terms of individual agreements with the Village of Cayuga Heights and their individual sewer use ordinances, and

WHEREAS, the six municipal corporations have met numerous times and in various combinations seeking solutions to the need for additional wastewater treatment capacity in portions of the community served by the VCHWWTP, while excess treatment capacity exists in the IAWWTP following a recent capacity upgrade, and

WHEREAS, the municipalities believe that it is in the communities’ best interest to make full use of existing community assets before building new or expanding existing facilities, provided any proposed agreement makes allowance for future demands within those municipalities during the agreement period, and that the costs are distributed in accordance to the benefits received, including avoided costs,

Now, Therefore, in consideration of the promises, and the mutual covenants, and agreements herein contained the parties agree as follows:
Section 1 – Overview and Method

The Village of Cayuga Heights was originally served by a downtown plant so much of the Village, as well as portions of the northeast quadrant of the Town of Ithaca, can use gravity and topography to redirect wastewater flows to the current downtown plant. Demand exists now for new sewer service in areas of the Village and Town of Lansing, and the Town of Dryden, close to the Village of Cayuga Heights and the Tompkins County Airport. Additional demand exists in northern portions of the Town of Lansing such as the Lansing School District complex and the Cargil Salt mine facilities, which seek to replace individually owned facilities with connections to municipal treatment facilities. It is generally believed that the water quality in Cayuga Lake can be improved by connecting individual properties whose on site treatment systems are built in areas of high water table or shallow bed rock.

Diverting existing wastewater flows from the VCHWWTP to the IAWWTP can free up capacity in the VCHWWTP to receive wastewater flows from areas north of that plant. Flows diverted from areas south of the Village’s plant can reach the downtown plant by gravity. The load sharing approach makes use of existing treatment capacity at the IAWWTP, relieves existing excess demand at the VCHWWTP, and allows adequate flexibility to meet projected demands over the next twenty (20) years while adjusting for real demands as they develop.

Section 2 – Basis for Agreement

In order to meet the goals set forth in this agreement a series of meetings were held between engineers representing the six communities being served by the two plants. The current operation of the two plants, current flow contributions by the six communities, and estimates for changes in flows were reviewed. Since current and future flows were still within the existing combined treatment capacity, a more detailed review was made of sub-area flows and topography to consider the feasibility of the proposed solution. The initial implementation appeared simple and the benefits to the VCHWWTP would be immediate.

The basis of the proposed solution is summarized in detail in a memo dated August 22, 2003 and revised December 17, 2003, written by the City’s Superintendent of Public Works to the other Joint Engineers. It is contained in Attachment 1 of this Agreement.

Section 3 – Engineering Assumptions

This Agreement looks at plant treatment capacity limitations and collection system wastewater flows in terms of volume and time, i.e. gallons per minute (gpm) or million gallons per day (MGD). The age of major portions of the collection system, the make up of local municipal wastewater (due to the largely residential, professional, and
high technology make up of the communities), and the configuration of both plants makes this approach to capacity reasonable. Peaking factors (peak flow/average flow) appear to be comparable for the plants and the portions of the collection systems for which data was available. Should other wastewater properties that limit a plant’s permitted capacity come into play, e.g. biological treatment, chemical treatment, or solids handling, both parties agree to make their best efforts to amend this agreement.

The preliminary review of plant operations at the IAWWTP did not uncover any disproportionate impacts or costs that would be triggered by receiving these diverted flows. No ratchet effect or sudden increase is anticipated in chemical, electrical, or staffing demands at the plant. This appears to be due to the relative size of the two plants (13.1 MGD and 2.0 MGD) and the actually size of the anticipated flow transfers. Should these items develop at a later date, both parties agree to make their best efforts to amend this agreement.

Section 4 – Request For and Implementation of Flow Transfers

The Basis of Agreement (Attachment 1) of the Agreement contains two (2) alternate methods for transferring flows from the VCWWTP to the IAWWTP. For the purposes of this agreement all flow transfers will be made under Alternate 1 and will occur as permanent diversions. Short-term diversions or peak shaving diversions made under Alternate 2 will be considered emergency events.

Permanent diversions may be requested by the VCHWWTP with a three (3) month lead time as long as the five (5) year average peak flow at the IAWWTP is less than ninety percent (90%) of the plant’s permitted capacity and the one (1) year peak flow is less than ninety-five percent (95%) of the plant’s capacity. If either of these values is exceeded, a six (6) month lead time is required in order to review a request and assess the impacts, collect supplemental data where required, and verify transmission capacity. VCHWWTP will be notified in writing of acceptable diversions to be treated at the IAWWTP and the date on which diversions may start.

It is possible that some requests can be processed very rapidly, or even administratively, once both parties have experience and the IAWWTP operating group has developed guidelines for the application of the agreement. The values provided in this agreement are not meant to limit the ability of the two parties to work together.

Section 5 – Transportation of Flows to IAWWTP

The City of Ithaca installed a new 36 inch interceptor sewer north along the east side of Route 13 to relieve flow constraints within the city grid. The new interceptor has adequate capacity to transfer all flows currently anticipated by this agreement provided they are delivered to the city’s collection system at the Ithaca High School complex. It is possible that this new interceptor will become a jointly owned interceptor shared by the owners of the IAWWTP. The owners agree to provide transportation of diverted flows.
on the same terms that they are using to share transportation costs among themselves. This charge will appear as part of the quarterly billing for treatment.

Section 6 – Treatment

The IAWWTP will treat and dispose of transferred flows on a continuous basis. The transferred flows will comply with the requirements of the sewer use ordinances of the communities through which they flow and the Industrial Pretreatment Regulations adopted for the IAWWTP, as required by the EPA. This is to insure that the flows do not cause pass through violations, interference with plant operations, sludge contamination, a threat to IAWWTP worker safety or nuisance orders. Verification testing required by permits or as needed by plant operations will be a cost of this agreement. The Industrial Pretreatment Regulations of the IAWWTP are attached as Attachment 2. A copy of the IAWWTP operating permit issued by NYSDEC is available upon request to the Chief Operator.

Section 7 – Measurement of Flows

Where possible, transferred flows shall be routed through existing sewage flow meters. When no existing meter is available, flows of 20,000 gpd and larger will require a meter installation at a location close to the municipal boundary which will be in place within six (6) months of the start of flows. Flows less than 20,000 gpd may be estimated and then verified on a six month basis using portable flow meters. Both the six month period and the 20,000 gpd cut off may be adjusted by mutual agreement as experience accumulates.

While it is the intention of this agreement to use the measurement of actual sewage flows for the purpose of billing for service to the VCHWWTP, the IAWWTP currently shares costs among the plant users based on metered water consumption and the rates are set on that basis. The owners of the IAWWTP have stated their desire to convert to measured wastewater flows. If the VCHWWTP requests a flow transfer under the terms of this agreement before the IAWWTP has converted to metered wastewater flows for rate setting and billing, both parties must agree to an appropriate adjustment factor to be applied to the measured flow or to a comparable metered water consumption measurement for billing purposes, prior to beginning the flow transfer.
Section 8 – Payment Terms

The cost of treating wastewater is a function of flow rates, volume, and wastewater properties. It is anticipated that diverted wastewater will have the characteristics and flow patterns of normal domestic sewage, currently received and treated by the plant. It is further anticipated that all diverted flows in the early years of the agreement and possibly for the duration of the agreement will occur within the boundaries of, and be attributed to the Town of Ithaca, including the Village of Cayuga Heights. As such, costs will be developed and charged in accordance with the existing Joint Sewer Agreement or any succeeding agreement adopted by the owners.

Costs are currently distributed based on metered water consumption, while anticipating the incorporation of or conversion to measured sewage flows. A uniform billing rate is developed based on the adopted operating budget and the preceding twelve months metered water consumption, and then adjusted in the following year to reflect actual expenses. Bills are sent quarterly and due within thirty (30) days. Interest on balance due after thirty (30) days from the date of the bill is determined by current IRS interest.

The measure of sewage strength, or any wastewater quality other than volume, and its impact on cost, if and when needed, shall be determined by accepted engineering standards. Both parties agree to make their best efforts to amend this agreement to adjust payment terms if a factor should be applied to any particular flow measurement to properly reflect its cost of treatment. The factor could be greater than or less than 1.0.

Section 9 – Agreement Modification

This agreement can be modified upon acceptance by both parties. It will become effective 10 days after a fully signed copy of the amendment has been distributed as required in the Notification Section, or as otherwise agreed to in the amendment itself. This contract constitutes the entire agreement between the parties and may only be amended in writing with the consent of both parties. Ratification of any amendments shall be by the same process used to adopt the original agreement.

Section 10 – Notification

Where notification is required, by the terms of this agreement, it shall be delivered by hand or by mail, during business hours, to the Chief Operator of the respective wastewater treatment plant at the address given at the start of the Agreement.
Section 11 – Length of Contract

The length of this contract shall be for a period of twenty (20) years. The “basis for agreement” shall be updated in years 10 and 15 to verify assumptions and projections on which this agreement is based. Contract extensions may be requested in years 15 and year 20 for a 10 year period, ending in year 25 and year 30. These periods are chosen due to planning effort and capital investments that could be required to substitute for this agreement should it become fully implemented.

Section 12 – Termination

Either party may terminate this agreement with adequate prior notice. Notice from IAWWTP to VCHWWTP will require five (5) years to provide time to respond, design, and build alternate facilities. Notice from VCHWWTP to IAWWTP will provide one (1) year advance warning. These periods are based on the assumption that no capital investments are needed at the IAWWTP to meet the terms of this agreement. Other periods of notice will be acceptable if agreed to by both parties or as may be agreed to should a capital improvement be necessary or desirable.

However, nothing in the agreement is intended to result in the IAWWTP violating the terms of its operating permit with NYSDEC. The IAWWTP may withdraw, in whole or in part, from the terms of this agreement in order to comply with its permit.

Section 13 – Emergency Operations

Both parties agree to work together to avoid or minimize a sewage spill outside of their respective plants, or violations of their permitted operations within their plants, in the case of unanticipated and unforeseeable events. The costs born by the supporting party will be billed at cost and paid according to the terms of this agreement. For the purposes of this section, emergency operations will not exceed collectively two weeks in duration or more than one percent (1%) of the operating budget of the supporting plant, during any one operating year. Events outside these guidelines will require a separate agreement between the plants and their owners.

Section 14 – Dispute Resolution

Disputes should initially be referred to the individuals responsible for the plant operations, which will be the Chief Operators of both plants and their immediate supervisors. If resolution cannot be reached by these four individuals the matter shall be referred in writing to the two Boards responsible for plant operations, currently the Village Trustees for VCHWWTP and the SJS or SJC for the IAWWTP. Ultimately, the
parties may seek whatever recourse is available under the law, but no sooner than ninety (90) days after the matter has been referred to the respective boards in writing.

Section 15 – General Items

Item 15.1 - Insurance and Liability Requirements: Each party shall be responsible for all damage to life and property due to negligent acts, errors or omissions that party, its sub-consultants, agents or employees, in the performance of service under this Agreement. Further, it is expressly understood that each party shall indemnify and save harmless the other party from claims, suits, actions, damages and costs of every name and description resulting from the negligent performance of the services of the first party under this Agreement, and such indemnity shall not be limited by reason of remuneration of any insurance coverage herein provided. Negligent performance of service, within the meaning of this section shall include, in addition to negligence founded upon tort, negligence based upon the party’s failure to meet professional standards and resulting in obvious or patent errors in the progression of their work. Nothing in this section or in this Agreement shall create or give to third parties any claim or right of action against the parties beyond such as may legally exist irrespectively of this Article or this Agreement.

Each party shall secure and maintain policies of general and automobile liability insurance during the life of this agreement. Such insurance shall protect against liability arising from, general liability and automobile liability in the performance of this agreement in the sum of at least One Million Dollars ($1,000,000) each.

Each party shall furnish to the other party a certificate or certificates in a form which is mutually satisfactory showing that the parties have complied with this section which certificate or certificates, shall provide that the policies shall not be changed or canceled until thirty (30) days written notice has been given to the other party.

Item 15.2 - Worker’s Compensation and Disability Coverage: A condition for entry into this agreement is the presentation, by both parties, of either proof that the Contractor provides the levels of workers compensation and disability coverage required by the State of New York or that the party is not required to provide such coverage.

Item 15.3 - Anti-Discrimination Clause: Each party agrees that they will not discriminate against any employee, applicant for employment, sub-contractor, supplier of materials or services, or program participant because of actual or perceived: a age, creed, color, disability, ethnicity, familial status, gender, height, immigration or citizenship status, marital status, national origin, race, religion, sexual orientation, socio-economic status, or weight as required by the State of New York.

Item 15.4 - Governing Law: This Agreement shall be governed under the laws of the State of New York. The parties further agree that the Supreme Court of the State of New York held in and for the County of Tompkins shall be the forum to resolve disputes arising out of either this agreement or work performed according thereto. The parties
waive all other venue or forum selections. The parties may agree between themselves on alternative forums.

Item 15.5 – Non-assignment Clause: The party’s agree, as required by the State Finance Law, Section 138, that they are prohibited by law from assigning, transferring, conveying, subletting or otherwise disposing of the Agreement or of their right, title or interest therein, or their power to execute such Agreement, to any other person, company or corporation, without the previous consent in writing of both parties.
In Witness hereto the Parties have caused this Agreement to executed by their duly authorized officers and sealed with their corporate seals, effective on the day and year aforementioned.

VILLAGE OF CAYUGA HEIGHTS WASTEWATER TREATMENT PLANT

Attest: Village of Cayuga Heights

__________________________________
Village Clerk
Village of Cayuga Heights, New York

By: ________________________________
Mayor
Village of Cayuga Heights

CITY OF ITHACA WASTEWATER TREATMENT PLANT

Attest: City of Ithaca

__________________________________
City Clerk
City of Ithaca

By: ________________________________
Mayor
City of Ithaca

Attest: Town of Ithaca

__________________________________
Town Clerk
Town of Ithaca

By: ________________________________
Supervisor
Town of Ithaca

Attest: Town of Dryden

__________________________________
Town Clerk
Town of Dryden

By: ________________________________
Supervisor
Town of Dryden
Plant to Plant Agreement

Attachment 1

Basis for Agreement
MEMORANDUM

TO: Joint Engineers
    - Brent Cross, P. E., Village of Cayuga Heights
    - David Herrick, P. E., Village and Town of Lansing, Town of Dryden
    - Dan Walker, P. E., Town of Ithaca
    - Larry Fabbroni, P. E., L.S., City of Ithaca

FROM: William J. Gray, P. E., Superintendent of Public Works

RE: Plant to Plant Agreement

DATE: August 22, 2003

REISSUED: December 17, 2003 to update tables and edit text

As I sat down to put together enough information for Nick Hatala and Jerry Hook to help me with a plant to plant agreement for us to consider, I started to explain/explore the concept. The following is my explanation to them and attached are copies of various notes we have exchanged over the last several years. These provide the source for numbers I have used to look at the concept and sketch out some possible approaches.

I would like you to review the presentation to see if it captures the concept as you understand it. Your review of my use of the numbers would be helpful. I have a simplified presentation, which uses several assumptions as outlined below. I wanted to capture the idea for the agreement and explore an order of magnitude for the dollars because both help to focus attention on areas needing change and more careful development.

Finally, after looking through this, it may be possible to simplify the agreement once the Town of Ithaca and the Village of Cayuga Heights know what they want to do and have explored the related costs. I have tried to explore two flow diversion schemes because they appear to represent the two ends of the scale over which any plant to plant agreement must work. At one end of the scale enough flow is permanently diverted so that the Cayuga Heights Plant can operate within its permitted capacity. Both plants operate in parallel and the Ithaca Area Plant is available for back up, which is only needed in emergency or mutual aid situations. At the other end of the scale, flows are diverted from the Cayuga Heights Plant on a continuous basis so that it can operate at a high annual average flow rate but not exceed its permitted capacity. Both plants operate in parallel and capacity is reserved at the Ithaca Area Plant to absorb the excess
flows in the Cayuga Heights collection system. Capacity, treatment, and transmission costs are billed to and paid by the users of the Cayuga Heights Plant.

**Background**

The communities as a whole would like to better utilize current resources before building any thing new. Collectively, there is 15.10 MGD of permitted treatment capacity available and peak month flows are (8.92 + 2.55=) 11.47 MGD, using data covering 1996 to 2000, or (8.61 + 2.47=) 11.08 for years 1998 to 2003. The flows are projected to grow by 3.00 MGD over the next twenty years to a peak month flow of between 14.47 and 14.08 MGD, or about 95% of the available capacity. (Reference: WJG 12/01, tables 3.0 & 4.0; DRW, 1/24/02) Enough capacity exists to treat current and future flows, provided the flows can be delivered to the right place.

Since peak flows at the Cayuga Heights Plant are averaging 2.55 MGD for a five year period (1996 – 2001) we need to transfer flows now and, because about 1.04 MGD of the 3.00 MGD projected growth will occur in areas that would be served by that plant, future flows will also need to be transferred to the Ithaca Area Plant. In the near term, the Town of Ithaca produces approximately 0.56 MGD of the Cayuga Heights peak flow. If all of that (or its equivalent) were transferred both plants would meet their operating permits. Over the next twenty years, as flows increase, the Town of Ithaca flow in that area is projected to increase by 0.12 MGD and the Village of Cayuga Heights flow would rise to 0.78 MGD which combine to make 0.90 MGD or about 90% of the additional flow which would need to be diverted over the next twenty years to keep the plants within their permits and to avoid building new wastewater facilities until they were needed.

Since the flows from the north east corner of the Town of Ithaca, including the Village of Cayuga Heights, appear to be ones that can be "easily" diverted into the Ithaca Area collection system there is a reasonably simple solution available. The flow diversions can occur as flow reductions (permanent diversions) at the Cayuga Heights Plant by redirecting the Town of Ithaca flows (or their equivalent) to the downtown plant full time. Alternately flows could be diverted through flow splitting on a main trunk sewer by proportional flows or by peak flows. Each approach has operational impacts on the plants and any agreement should reflect that so informed decisions can be made.

Finally, it should be noted that both plants are currently flow limited and that the BOD and suspended solids in their influents are within the plants capacity to treat. Similarly, the plants currently handle the phosphorous loadings which is delivered to them. While we do not anticipate that these things will become the controlling factors in flow diversions, they need to be considered for their possible impacts. Both plants are about to be retrofitted for phosphorus treatment and it will add an operational cost to both budgets.
Re: Plant to Plant Agreement  
Date: August 22, 2003

**Plant to Plant Diversions**

As stated above, diversions of flows can be done by outright flow reduction of flow at one plant by full time diversion to another, and then range up to a continuous peak shaving effort at the other end of the scale. The first appears attractive because of the relative simplicity of the approach. Once the service area diversion was in place very little additional effort or plant interaction would be required. The plant to plant agreement would basically amount to the mutual aid pact for emergency conditions and both plants would operate with characteristics similar to what they have now, except that the Cayuga Heights Plant would see a lower annual flow. The Cayuga Heights Plant would see a higher cost per customer as it lost flows to meet its permit.

The second approach may prove advantageous if analysis shows that handling higher average flows at the Cayuga Heights Plant is cost effective. The cost savings would have to offset the expense of adding peak flows from one plant to the peak flows for the second plant, and the cost of tying up capacity at the second plant so it will be available for peak flows from the first. While both plants currently have similar peaking factors (Peak Month/Average Annual Flow) of 1.33 and 1.36, (1996 – 2000 data) a peak shaving approach at one will increase the peak loading at the other, affecting electrical, chemical, and staffing demands.

A consideration, which will eventually provide flow reductions, is a healthy I/I reduction program. It is expected that the new sewers built to serve new flows, and the sewer replacement/repair programs of several communities, will combine to change projections and reduce impacts. However, the need to reduce flows at the Cayuga Heights Plant exists now so I have not factored in any I/I reductions that may occur.

**Alternate 1 Flow Reduction at VCH Plant**

The flow reduction needed at the VCH plant is calculated using the permit capacity and peaking factor. A plant designed for a 2.00 MGD peak month and operating at a peaking factor of 1.36 (1996 – 2000 data) should have an Average Annual Flow less than \((2.00/1.36=)\) 1.47 MGD. Since the current five (5) year average flow is 1.88 MGD, the needed reduction is 0.41 MGD or about 149.7 MG per year. Since the plant currently treats \(1.88 \times 365 = 686.2\) MG per year, this reduction represents about 22% of the plant flow. Ignoring all the other things (possible reduction in staffing, electrical demand, chemical demand, etc.), this would increase plant cost of operation per 1,000 gal. by roughly 25%. The transfer of 0.41 MGD to the downtown plant would not be expected to change that plant's cost per 1,000 gal because it is within the operational variations of the last few years. If the transferred flows were from areas within the Town of Ithaca, made up of the town's northeast area flow \((0.56 + 1.36 = 0.41 \text{ MGD})\), they own adequate capacity once the service area for the plant is adjusted. If the flows are redirected on a 365 day basis and have the same wastewater characteristics as the Ithaca Area plant currently receives, there doesn't appear to be any other special costs related to the transfer.
The Plant to Plant Agreement could be drawn up to address emergency operations (such as the plugged sewer under Route 13 in early 2003) but should also address future flow transfers from within the Village of Cayuga Heights as demand grows north of the Village. If these transfers are within the new plant service area and the Town of Ithaca's treatment capacity no other concerns are obvious at this time. Since the town's growth and the village's flows appear to be close to the amount that needs to be transferred over the next 20 years, this approach may be expected to work for that period of time.

Alternate 2 Peak Flow Shaving at VCH Plant

It may be possible to operate the VCH plant in a manner that literally meets the permit limitations of not exceeding 2.00 MGD during any month by shaving peak flows rather than reducing base level flows. This is a more sophisticated solution because it requires flow diversion devices, based on flow cutoff or proportional flows, and their related flow monitoring devices to function all the time. Because it transfers the peak to the other plant it ties up capacity and pushes peaks higher without providing the base flows to carry the costs. Since the receiving plant is six (6) times larger than the sending plant and because the sending plant is already operating at an annual average flow of 1.88 MGD (1996 – 2000 data) or 94% of its peak capacity (the usual percentage would be 75%), the flow diversions may effectively be similar to the flow reductions outlined above.

The peak three (3) month flow at the Cayuga Heights plant has averaged 2.36 MGD or 93% of the 2.55 MGD peak month flow.

<table>
<thead>
<tr>
<th>Period</th>
<th>Flow (MGD)</th>
<th>Volume Treated (MG)</th>
<th>Flow Rate (MG/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual</td>
<td>1.88</td>
<td>365</td>
<td>686.2</td>
</tr>
<tr>
<td>Peak Mo.</td>
<td>2.55</td>
<td>30.5</td>
<td>77.8</td>
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<tr>
<td>Peak 3 Mo.</td>
<td>2.36</td>
<td>91.5</td>
<td>215.9</td>
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</table>

Using a perfect peak shaving approach, it would be necessary to transfer 0.36 MGD for a three (3) month period or (0.36 x 91.5 =) 32.9 MG downtown. If we estimate that over the course of the year this volume would double, then 66 MG would be transferred downtown. This represents about 10% of the Cayuga Heights annual plant flow. In addition, it would be necessary to reserve at least .55 MGD of the downtown plant on a continuous basis to cover the peak month, or (.55/13.1=) 4.2% of the downtown's plant capacity. Let's say that local costs for treatment capacity were $1.5/Million/MGD and that carrying costs for that capacity are 5% per year to the owners. Reserving .55 MGD in treatment capacity would cost (0.55 x 1.5 x 0.05 =) $41,300/year. This would be in addition to treatment and transmission costs.

If we assume that approximately 0.3 MG of the projected 20 year 1.04 MG expansion in peak flows appears immediately (within two (2) years), then the downtown reserve would grow from 0.55 MG to 0.85 MG of treatment capacity and diverted flows will increase from about 66 MG per year to 100 MG per year. Actual figures could be less in the early years of the new
sewers but the averages have held up well over the last 30 years of new sewer additions. In very round numbers, 100 MG per year represents 4% of the \((6.74 \times 365=) \) 2,460 MG per year treated at the Ithaca area plant for an annual budget of $2.2 Million. Four percent (4%) of the annual budget is $88,000. Figures should be adjusted to eliminate capital projects and debt payments if a reserve capacity payment is charged. Operating costs will change with phosphorous treatment. At this time we have not uncovered any ratchet costs in the electric bills which might be triggered as peak flows are transferred.

**Alternate 3 Combined Flow Reductions and Peak Shaving**

Certainly there is a full spectrum of possibilities between Alternatives 1 and 2 which have different capital costs and operating costs. As stated early on, improvements in I/I reduction techniques continue to get better. Actual flow measurements collected in the next several years will further refine our analysis.

**Closing Comment**

I am using this memo and its attachments to transfer information and ideas to Nick Hatala and Jerry Hook for their review. If you see simplifications or complications please provide them now. If there are things which are unacceptable to various parties, it may (or may not) simplify a proposed agreement. As we understand the order of magnitude of the choices we may be able to refine the solutions.

Alternate 1 appears to be simple with medium capital costs for the diversions and relatively low operating costs. The biggest impact is reduced base loading over which operating costs are spread at Cayuga Height's plant as it conforms to its operating permit and plant design. Alternate 2 is more sophisticated with moderate to high capital costs for flow diversion and flow monitoring and variable operating costs. Alternate 2 probably provides the most direct reward for I/I improvements but some added analysis would be necessary to see if the cost of the solution is offset by potential savings.

WJG/dmlt
### Additional Information Considered

References: BC memo, 9/18/02

#### Water Consumption (Annual)
- **Estimate for VCH WWTP users**: 325,580,000 gal
- **Budgeted for IAWWTP users**: 1,536,758,190 gal

#### Wastewater Treated (5 year Annual avg)
- **VCH**: 1.88 MGD x 365 = 686,200,000 gal
- **IAWWTP**: 6.74 MGD x 365 = 2,460,100,000 gal

#### Wastewater/Water
- **VCH**: 6862/3256 = 2.11
- **IAWWTP**: 24601/15368 = 1.60
- **Both**: 31463/18623 = 1.69

#### Cost of Operation = Budget/Water
- **VCH**: \( \$ \frac{675,000}{325,580} = \$2.07/1000\) gal
- **IAWWTP**: \( \$ \frac{2,222,041}{1,536,758} = \$1.45/1000\) gal
## TABLE 1.1
IAWWTP
Avg. Daily Flow By Month (MGD)

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<thead>
<tr>
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<td>5.23</td>
<td>8.99</td>
<td>10.00</td>
<td>6.08</td>
</tr>
<tr>
<td>June</td>
<td>6.39</td>
<td>7.39</td>
<td>5.63</td>
<td>7.32</td>
<td>4.18</td>
<td>6.66</td>
<td>6.35</td>
<td>5.17</td>
</tr>
<tr>
<td>July</td>
<td>6.68</td>
<td>5.52</td>
<td>5.29</td>
<td>6.33</td>
<td>4.47</td>
<td>6.69</td>
<td>6.14</td>
<td>5.74</td>
</tr>
<tr>
<td>Aug</td>
<td>6.13</td>
<td>5.14</td>
<td>5.37</td>
<td>5.63</td>
<td>4.74</td>
<td>5.32</td>
<td>6.39</td>
<td>5.25</td>
</tr>
<tr>
<td>Sept</td>
<td>6.88</td>
<td>6.19</td>
<td>6.40</td>
<td>5.85</td>
<td>6.64</td>
<td>6.13</td>
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</tr>
<tr>
<td>Oct</td>
<td>6.75</td>
<td>6.45</td>
<td>5.80</td>
<td>5.85</td>
<td>6.17</td>
<td>5.82</td>
<td>7.37</td>
<td>6.89</td>
</tr>
<tr>
<td>Nov</td>
<td>6.73</td>
<td>5.54</td>
<td>5.17</td>
<td>4.84</td>
<td>5.31</td>
<td>9.35</td>
<td>7.30</td>
<td></td>
</tr>
<tr>
<td>Dec</td>
<td>7.06</td>
<td>5.84</td>
<td>4.57</td>
<td>5.67</td>
<td>4.39</td>
<td>8.85</td>
<td>6.13</td>
<td></td>
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<table>
<thead>
<tr>
<th></th>
<th>Annual avg</th>
<th>6.48</th>
<th>6.10</th>
<th>6.93</th>
<th>5.60</th>
<th>7.05</th>
<th>7.82</th>
<th>6.22</th>
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</thead>
<tbody>
<tr>
<td>Peak mo</td>
<td>8.27</td>
<td>7.46</td>
<td>10.79</td>
<td>7.33</td>
<td>9.18</td>
<td>10.00</td>
<td>7.30</td>
<td></td>
</tr>
<tr>
<td>Avg Peak 3 Mo</td>
<td>7.57</td>
<td>7.57</td>
<td>9.54</td>
<td>6.86</td>
<td>9.09</td>
<td>9.74</td>
<td>7.12</td>
<td></td>
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</table>

### 5 year Averages
<table>
<thead>
<tr>
<th></th>
<th>Annual Avg</th>
<th>6.43</th>
<th>6.70</th>
<th>6.72</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak Mo</td>
<td>8.61</td>
<td>8.95</td>
<td>8.92</td>
<td></td>
</tr>
<tr>
<td>Avg Peak 3 Mo</td>
<td>8.13</td>
<td>8.56</td>
<td>8.47</td>
<td></td>
</tr>
<tr>
<td>Peak Mo/Ann Avg</td>
<td>1.37</td>
<td>1.37</td>
<td>1.33</td>
<td></td>
</tr>
<tr>
<td>Peak Mo/Peak 3 Mo</td>
<td>1.08</td>
<td>1.07</td>
<td>1.05</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
2) Flow figures are taken from monthly DMRs submitted to DEC.
3) Averages will improve with time as the sewer construction period is replaced with newer data or as communities improve their collection systems to reduce infiltration and inflow.

WJG - 12/03
**TABLE 2.1**

**VCH WWTP**

Avg. Daily Flow By Month (MGD)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>2.01</td>
<td>1.59</td>
<td>1.59</td>
<td>1.82</td>
<td>1.75</td>
<td>2.68</td>
<td>1.92</td>
<td>2.15</td>
</tr>
<tr>
<td>Feb</td>
<td>2.07</td>
<td>1.70</td>
<td>1.80</td>
<td>2.52</td>
<td>1.21</td>
<td>2.56</td>
<td>2.13</td>
<td>1.99</td>
</tr>
<tr>
<td>March</td>
<td>2.37</td>
<td>1.57</td>
<td>3.29(1)</td>
<td>2.25</td>
<td>2.27</td>
<td>2.52</td>
<td>2.31</td>
<td>2.32</td>
</tr>
<tr>
<td>April</td>
<td>2.19</td>
<td>1.63</td>
<td>2.07</td>
<td>2.73</td>
<td>1.83</td>
<td>2.30</td>
<td>2.19</td>
<td>2.76</td>
</tr>
<tr>
<td>May</td>
<td>1.81</td>
<td>1.94</td>
<td>1.61</td>
<td>2.30</td>
<td>1.39</td>
<td>1.95</td>
<td>2.14</td>
<td>2.61</td>
</tr>
<tr>
<td>June</td>
<td>1.75</td>
<td>1.83</td>
<td>1.75</td>
<td>1.92</td>
<td>1.25</td>
<td>1.66</td>
<td>1.53</td>
<td>1.92</td>
</tr>
<tr>
<td>July</td>
<td>1.71</td>
<td>1.12</td>
<td>1.57</td>
<td>1.47</td>
<td>1.21</td>
<td>1.53</td>
<td>1.39</td>
<td>1.78</td>
</tr>
<tr>
<td>Aug</td>
<td>1.58</td>
<td>1.06</td>
<td>1.87</td>
<td>1.34</td>
<td>1.25</td>
<td>1.32</td>
<td>1.28</td>
<td>1.86</td>
</tr>
<tr>
<td>Sept</td>
<td>1.80</td>
<td>1.24</td>
<td>1.94</td>
<td>1.49</td>
<td>1.56</td>
<td>1.45</td>
<td>1.43</td>
<td>1.83</td>
</tr>
<tr>
<td>Oct</td>
<td>2.25</td>
<td>1.38</td>
<td>1.48</td>
<td>1.55</td>
<td>1.50</td>
<td>1.49</td>
<td>1.36</td>
<td>2.00</td>
</tr>
<tr>
<td>Nov</td>
<td>1.71</td>
<td>1.55</td>
<td>1.52</td>
<td>1.38</td>
<td>2.06</td>
<td>2.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec</td>
<td>2.12</td>
<td>1.89</td>
<td>1.59</td>
<td>1.65</td>
<td>1.36</td>
<td>2.00</td>
<td>2.51</td>
<td></td>
</tr>
</tbody>
</table>

| Annual avg | 1.57 | 1.81 | 1.91 | 1.53 | 1.98 | 1.81 | 1.81 | 2.17 |
| Peak mo     | 2.12 | 2.55(1)| 2.73 | 2.27 | 2.68 | 2.31 | 2.76 |
| Avg Peak    | 1.96 | 2.43 | 2.51 | 1.95 | 2.59 | 2.21 | 2.56 |

<table>
<thead>
<tr>
<th>5 year Averages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Avg</td>
</tr>
<tr>
<td>Peak Mo</td>
</tr>
<tr>
<td>Avg Peak 3 Mo</td>
</tr>
<tr>
<td>Peak Mo/Ann Avg</td>
</tr>
<tr>
<td>Peak Mo/Peak 3 Mo</td>
</tr>
</tbody>
</table>

**Notes:** (1) Figure for March 2001 was so unusual it was dropped and the 5 year average for 2000-1996 was substituted. It will be discounted from future calculations unless some new patterns develop.
TABLE 3.1
Gross Excess Capacity (Hydraulic) (MGD)

<table>
<thead>
<tr>
<th>Plant</th>
<th>Current Peak</th>
<th>Rated Flow</th>
<th>Excess Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>IAWWTP</td>
<td>8.92</td>
<td>13.1</td>
<td>4.18</td>
</tr>
<tr>
<td>VCH WWTP</td>
<td>2.55</td>
<td>2.00</td>
<td>-(0.55)</td>
</tr>
<tr>
<td></td>
<td><strong>11.47</strong></td>
<td><strong>15.10</strong></td>
<td><strong>3.63</strong></td>
</tr>
</tbody>
</table>

Notes:
1) Figures here address hydraulic loadings on the WWTPs because that currently is the limiting factor. Other factors such as biological or solids loadings could become important if the communities continue to improve I/I in their collection systems.
2) Peak Flow shown here is the average daily flow during the peak month of the year. To reduce impact of some unusual combination of events, the peak flow is an average of the last five years under peak months. Data shown here is for years 1996 - 2000 from Tables 1 & 2.
3) Excess capacity is shown as the difference between the current peak flow and the plant's rated capacity.
### TABLE 4.1
Distributed Excess Capacity (MGD)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>IAWWTP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>City of Ithaca</td>
<td>65%</td>
<td>5.80</td>
<td>57.14%</td>
<td>7.48</td>
<td>1.68</td>
</tr>
<tr>
<td>Town of Ithaca</td>
<td>33.3%</td>
<td>2.97</td>
<td>40.88%</td>
<td>5.36</td>
<td>2.39</td>
</tr>
<tr>
<td>Town of Dryden</td>
<td>1.7%</td>
<td>0.15</td>
<td>1.98%</td>
<td>0.26</td>
<td>0.11</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>8.92</td>
<td>100%</td>
<td>13.10</td>
<td>4.18</td>
</tr>
<tr>
<td>Village of C.H.</td>
<td>24.90%</td>
<td>0.64</td>
<td>flow +22%</td>
<td>0.78</td>
<td>0.14</td>
</tr>
<tr>
<td>Village of Lansing</td>
<td>34.90%</td>
<td>0.84</td>
<td>46.5% remain</td>
<td>0.57</td>
<td>-0.32</td>
</tr>
<tr>
<td>Town of Lansing</td>
<td>17.70%</td>
<td>0.45</td>
<td>23.5% remain</td>
<td>0.29</td>
<td>-0.16</td>
</tr>
<tr>
<td>Town of Ithaca</td>
<td>22.00%</td>
<td>0.56</td>
<td>29.3% remain</td>
<td>0.35</td>
<td>-0.21</td>
</tr>
<tr>
<td>Town of Dryden</td>
<td>0.50%</td>
<td>0.01</td>
<td>1.7% remain</td>
<td>0.01</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>2.55</td>
<td></td>
<td>2.00</td>
<td>-0.55</td>
</tr>
</tbody>
</table>

**Notes:**
1) Plant usage numbers are based on several years of recent plant billings, e.g., city billings for plant operations: 2002, 63.4%; 2001, 65.3%; 2000, 64.7%; 1999, 65.5%; 1998, 65.7%
2) It is assumed that plant billings for operational expenses are derived from figures for plant usage and that usage is proportional flows. Any user that was being surcharged for special loadings (chemical biological or solids) is not reflected here.

WJG 12/03
TABLE 5.1
Future Flows versus Treatment Capacity
Peak Flows in MGD

<table>
<thead>
<tr>
<th></th>
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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>City of Ithaca</td>
<td>5.80</td>
<td>1.28</td>
<td>7.08</td>
<td>7.48</td>
<td>0.40</td>
</tr>
<tr>
<td>Town of Ithaca</td>
<td>2.97</td>
<td>0.65</td>
<td>3.62</td>
<td>5.36</td>
<td>1.74</td>
</tr>
<tr>
<td>Town of Dryden</td>
<td>0.15</td>
<td>0.03</td>
<td>0.18</td>
<td>0.26</td>
<td>0.08</td>
</tr>
<tr>
<td>SUBTOTALS</td>
<td>0.09</td>
<td>1.96</td>
<td>10.88</td>
<td>13.10</td>
<td>2.22</td>
</tr>
<tr>
<td>Village of C.H.</td>
<td>0.64</td>
<td>1.04</td>
<td>0.78</td>
<td>0.78</td>
<td>0.00</td>
</tr>
<tr>
<td>Village of Lansing</td>
<td>0.89</td>
<td>0.2</td>
<td>1.09</td>
<td>0.57</td>
<td>-0.52</td>
</tr>
<tr>
<td>Town of Lansing</td>
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<td>0.57</td>
<td>1.02</td>
<td>0.29</td>
<td>-0.73</td>
</tr>
<tr>
<td>Town of Ithaca</td>
<td>0.56</td>
<td>0.12</td>
<td>0.68</td>
<td>0.35</td>
<td>-0.33</td>
</tr>
<tr>
<td>Town of Dryden</td>
<td>0.01</td>
<td>0.01</td>
<td>0.02</td>
<td>0.01</td>
<td>-0.01</td>
</tr>
<tr>
<td>SUBTOTALS</td>
<td>2.55</td>
<td>1.04</td>
<td>3.59</td>
<td>2.00</td>
<td>-1.59</td>
</tr>
<tr>
<td>TOTALS</td>
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<td>3.00</td>
<td>14.47</td>
<td>15.10</td>
<td>0.63</td>
</tr>
</tbody>
</table>

Notes:

1) Peak Flow estimate are a distribution plant peak flows in proportion to plant billings for usage, usually based on metered water consumption.

2) Future flows are based on community requests or 1% growth for 20 years = 1.220 multiplier

WJG 12/03
Plant to Plant Agreement

Attachment II

Code of the City of Ithaca

Chapter 264

Sewer Use

Article I  General Provisions

Article II  Regulation of Wastewater Discharges
[HISTORY: Adopted by the Common Council of the City of Ithaca 8-5-1992 by L.L. No. 4-1992. Amendments noted where applicable.]

GENERAL REFERENCES
Transportation of hazardous materials -- See Ch. 201.
Building sewers and connections -- See Ch. 262.
Board of Public Works rules for sewers -- See Ch. 348.

ARTICLE I, General Provisions

§ 264-1. Purpose and applicability.
A. The purposes of this chapter are the following:

(1) To set forth uniform requirements for contributors into the wastewater collection and treatment system currently owned jointly by the City of Ithaca, the Town of Ithaca and the Town of Dryden (hereinafter collectively referred to as the "municipalities") and to enable the municipalities to comply with all applicable requirements under New York and federal law, including, without limitation, the Clean Water Act of 1977, as amended, and the General Pretreatment Regulations promulgated thereunder at 40 CFR 403. Additional municipalities may in the future join in the ownership of this wastewater collection and treatment system.

(2) To prevent the introduction of pollutants into the municipalities' publicly owned treatment works (POTW) which will:

(a) Interfere with its operations, including interference with the use or disposal of municipal sludge;

(b) Pass through or otherwise be incompatible with the POTW;

(c) Limit opportunities to recycle and reclaim municipal and industrial wastewaters and sludges; or

(d) Endanger the health or safety of sewer workers.

(3) To prevent new sources of infiltration and inflow and, to the extent possible, eliminate existing sources of infiltration and inflow; and

(4) To provide for equitable distribution and recovery of the cost of the municipal wastewater system.

B. This chapter shall apply to all users of the POTW in the municipalities and to persons who are, by resolution, agreement, contract or permit with the municipalities, Special Joint Subcommittee or POTW, users of the POTW.
§ 264-2. Administration.

Except as otherwise provided herein, the Special Joint Subcommittee and its representative, the Chief Operator, shall have the authority to administer, implement and enforce the provisions of this chapter. To the extent practicable and consistent with the requirements of the General Pretreatment Regulations set forth at 40 CFR 403, the Special Joint Subcommittee shall keep officials in the City of Ithaca, Town of Ithaca, Town of Dryden and any other municipality which contracts with the municipalities or Special Joint Subcommittee to discharge wastewater to the POTW reasonably informed of implementation and enforcement activities involving users located in their respective municipalities and shall consult with such officials in appropriate implementation and enforcement activities with respect to users located in their respective municipalities.

§ 264-3. Definitions and word usage.

A. Definitions. Unless the context specifically indicates otherwise, the following terms and phrases, as used in this chapter, shall have the meanings hereinafter designated:

ACT -- The Federal Water Pollution Control Act, also known as the Clean Water Act, as amended, 33 U.S.C. § 1251 et seq., and the regulations promulgated thereunder, as amended from time to time.

APPROVAL AUTHORITY -- The Regional Administrator of the EPA, unless and until New York State receives EPA approval of a state pretreatment program. Once New York State receives such approval, then the approval authority will be the Commissioner of the DEC.

AUTHORIZED REPRESENTATIVE -- An authorized representative of an industrial user shall be:

(1) A responsible corporate officer, if the user is a corporation, provided that the responsible corporate officer is:

   (a) A president, vice president, secretary or treasurer of the corporation in charge of a principal business function;

   (b) Any other person who performs similar policy- or decision-making functions for the corporation; or

   (c) The manager of a facility or facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25,000,000 (in second-quarter 1980 dollars), provided that the manager has received the authority to sign documents in accordance with corporate procedures.

(2) A general partner or proprietor, if the user is a partnership or sole proprietorship, respectively.

(3) A member of the governing board or executive office of a governmental entity, if the user is a governmental facility.

(4) A duly authorized representative of the individual designated above if such representative is responsible for the overall operation of the facility from which the industrial discharge originates, or has overall responsibility for environmental
matters for the company; provided, however, that the authorization is made in
writing by the individual described above and the written authorization is submitted
to the Chief Operator.

BYPASS -- The intentional diversion of waste streams from any portion of an industrial
user's treatment facility.

CATEGORICAL PRETREATMENT STANDARD -- A national pretreatment standard
which applies to a specific industrial subcategory and is published at 40 CFR Chapter I,
Subchapter N.


CHIEF OPERATOR -- The person appointed by the City of Ithaca and approved by the
Special Joint Subcommittee to supervise the operation of the POTW, or his or her duly
authorized representative, including the Pretreatment Coordinator. The Chief Operator or
his or her representative shall be the Special Joint Subcommittee's authorized agent and
representative in the administration and enforcement of this chapter.

COOLING WATER -- The water discharged from any use, such as air conditioning,
cooling or refrigeration, to which the only pollutant added is heat.

DEC -- The New York State Department of Environmental Conservation.

DIRECT DISCHARGE -- The discharge of treated or untreated wastewater directly to the
waters of the State of New York or of the United States.

DISCHARGE -- See "indirect discharge."

DOMESTIC SOURCE -- Any residence, building, structure, facility or installation from
which there is or may be discharged to the POTW only sanitary sewage.

EPA -- The United States Environmental Protection Agency.

FIVE-DAY BIOCHEMICAL OXYGEN DEMAND (BOD5) -- The quantity of oxygen
utilized in the biochemical oxidation of organic matter under standard laboratory
procedure for five days at 20° C., expressed in terms of weight and concentration
[milligrams per liter (mg/l)].

GARBAGE -- The solid waste from the preparation, cooking and dispensing of food and
from the handling, storage and sale of produce.

INDIRECT DISCHARGE -- The introduction of pollutants into the POTW from any
source, other than a domestic source, regulated under Section 307(b), (c) or (d) of the
Act.

INDUSTRIAL USER -- A source of indirect discharge.

INDUSTRIAL WASTE -- Any liquid, gaseous or solid waste substance or a combination
thereof resulting from any process of industry, manufacturing, trade or business, from
any process related to services or activities performed by any public or private institution
or facility or from the development or recovery of any natural resources.

INTERFERENCE -- A discharge which, alone or in conjunction with a discharge or
discharges from other sources, inhibits or disrupts the POTW, its treatment processes or
operations or its sludge processes, use or disposal and which is a cause of a violation of
any requirement of the POTW's SPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal by the POTW in accordance with applicable federal, state or local statutes and regulations or permits issued thereunder, as set forth in 40 CFR 403.3(i).

MUNICIPALITIES -- The City of Ithaca, Town of Ithaca and Town of Dryden, collectively, as well as any other municipalities which may in the future become owners of the Ithaca Area Wastewater Treatment Facility. "Municipality" used in the singular form shall mean any one of the municipalities.

NATIONAL PRETREATMENT STANDARD, PRETREATMENT STANDARD or STANDARD -- Any regulation containing pollutant discharge limits promulgated by the EPA in accordance with Section 307(b) and (c) of the Act which applies to industrial users, including prohibitive discharge limits established pursuant to 40 CFR 403.5, and Categorical Pretreatment Standards.

NEW SOURCE -- Any building, structure, facility or installation, as described in 40 CFR 403.3(k), from which there is or may be a discharge of pollutants, the construction of which commenced after the publication of proposed pretreatment standards under Section 307(c) of the Act which will be applicable to such source if such standards are thereafter promulgated in accordance with that section.

PASS-THROUGH -- A discharge which exits the POTW into waters of New York State or the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's SPDES permit (including an increase in the magnitude or duration of a violation).

PERSON -- Any individual, partnership, firm, company, public or private corporation or authority, association, joint-stock company, trust, estate, governmental entity, agency or political subdivision of a municipality, of the State of New York or of the United States or any other legal entity or their legal representatives, agents or assigns. The masculine gender shall include the feminine, and the singular shall include the plural where indicated by the context.

pH -- The logarithm (base 10) of the reciprocal of the concentration of hydrogen ions expressed in grams per liter of solution.

POLLUTANT -- Any element or property of sewage, agricultural, industrial, commercial or municipal waste, leachate, heated effluent, dredged spoil, solid waste, incinerator residue, garbage, chemical wastes, biological materials, radioactive materials, rock, sand and cellar dirt which is discharged into the POTW.

POTW TREATMENT PLANT -- That portion of the POTW designed to provide treatment (including recycling and reclamation) of municipal sewage and industrial waste.

PRETREATMENT -- The reduction of the amount of pollutants, the elimination of pollutants or the alteration of the nature of pollutant properties in wastewater to a less harmful state prior to or in lieu of discharging or otherwise introducing such pollutants into the POTW. The reduction or alteration can be obtained by physical, chemical or biological processes, process changes, or other means, except as prohibited by 40 CFR 403.6(d).
PRETREATMENT REQUIREMENT -- Any substantive or procedural requirement related to pretreatment, other than a National Pretreatment Standard, imposed on an industrial user. [Amended 7-1-1998 by L.L. No. 5-1998]

PUBLICLY OWNED TREATMENT WORKS or POTW -- The treatment works, as defined by Section 212 of the Act, owned by the municipalities and known as the "Ithaca Area Wastewater Treatment Facility." This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes those sewers, pipes and other conveyances which convey wastewater to the POTW's treatment plant. For the purposes of this chapter, "POTW" shall also include any sewers and other facilities that convey wastewater to the POTW treatment plant from persons who are, by permit, resolution, contract or agreement with the municipalities, Special Joint Subcommitteee or POTW, users of the POTW.

SANITARY SEWAGE -- Liquid- and water-carried human and domestic wastes from residences, commercial buildings, industrial plants and institutions, exclusive of ground-, storm- and surface water and exclusive of industrial wastes.

SANITARY SEWER -- A sewer that carries liquid- and water-carried wastes from residences, commercial buildings, industrial plants and institutions, together with minor quantities of ground-, storm- and surface waters that are not admitted intentionally.

SEPTAGE -- All liquids and solids in and removed from septic tanks, holding tanks, cesspools or chemical toilets, including but not limited to those serving private residences, commercial establishments, industries and institutions. Septage shall not contain pollutants which the Chief Operator determines may cause problems at the POTW.

SEWER -- A pipe or conduit that carries wastewater.

SEWERAGE SYSTEM -- Any device, equipment or works used in the transportation, pumping, storage, treatment, recycling and reclamation of wastewater.

SIGNIFICANT INDUSTRIAL USER -- All industrial users subject to Categorical Pretreatment Standards, and any other industrial user that discharges an average of 25,000 gallons per day or more of process wastewater to the POTW (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process waste stream which makes up 5% or more of the average dry-weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Chief Operator on the basis that the industrial user has a reasonable potential for adversely affecting the POTW’s operation or for violating any pretreatment standard or requirement. Upon a finding that an industrial user meeting the foregoing criteria has no reasonable potential for violating any pretreatment standard or requirement or for adversely affecting the POTW's operation, the Chief Operator may, at any time, upon his or her own initiative or in response to a petition received from an industrial user, and in accordance with 40 CFR 403.8(f)(6), determine that such industrial user is not a significant industrial user. Such a determination may not be made, however, if the industrial user is subject to a Categorical Pretreatment Standard.

SLUDGE -- Waste containing varying amounts of solid contaminants removed from water, sanitary sewage, wastewater or industrial wastes by physical, chemical or biological treatment.
SLUG -- Any discharge of a nonroutine, episodic nature, including but not limited to an accidental spill or noncustomary batch discharge.


SPECIAL JOINT SUBCOMMITTEE -- A subcommittee of the City of Ithaca's Board of Public Works which is charged with oversight of the POTW, as provided for by agreement among the City of Ithaca and Towns of Ithaca and Dryden. This subcommittee currently consists of representatives from the City of Ithaca and Towns of Ithaca and Dryden, and may in the future include representatives from other municipalities which become joint owners of the POTW.

SUSPENDED SOLIDS -- The total suspended matter that floats on the surface of or is suspended in water, wastewater or other liquids, and which is removable by laboratory filtering in accordance with the current standard methods.

TOXIC POLLUTANT -- Any pollutant or combination of pollutants listed as toxic in regulations promulgated by EPA under Section 307(a) of the Act, or other acts, or in regulations promulgated under New York State law.

USER -- Any domestic source or industrial user which discharges wastewater to the POTW.

WASTEWATER -- The liquid- and water-carried industrial, nondomestic or domestic wastes, including sewage, industrial waste, other wastes or any combination thereof, from dwellings, commercial buildings, industrial facilities and institutions, together with any ground- , surface and stormwater that may be present, whether treated or untreated, which is discharged into the POTW.

WASTEWATER DISCHARGE PERMIT or PERMIT -- The document issued to industrial users by the Chief Operator for the discharge of wastewater, as set forth in § 264-15 of this chapter.

WATERS OF THE STATE -- All streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, drainage systems and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, which are contained within, flow through, border upon or are within the jurisdiction of the state.

B. Word usage. The word "shall" is mandatory; "may" is permissive.

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**ARTICLE II, Regulation of Wastewater Discharges**

§ 264-4. General discharge prohibition.

A. No user may introduce into the POTW any pollutant(s) which cause pass-through or interference. These general prohibitions and the specific prohibitions in § 264-5 of this chapter apply to each user introducing pollutants into the POTW, whether or not the user
is subject to National Pretreatment Standards or any other national, state or local pretreatment requirements.

B. An industrial user shall have an affirmative defense in any action brought against it alleging pass-through or interference where the industrial user can demonstrate that it did not know or have reason to know that its discharge, alone or in conjunction with discharges from other sources, would cause pass-through or interference, and either the industrial user was in compliance with the local limits for each pollutant that caused pass-through or interference directly prior to and during the pass-through or interference, or if no local limits for the pollutant(s) which caused pass-through or interference have been developed, the industrial user's discharge directly prior to and during the pass-through or interference did not change substantially in nature or constituents from the user's prior discharge activity when the POTW was regularly in compliance with its SPDES permit requirements and applicable requirements for sewage sludge use or disposal.

§ 264-5. Specific discharge prohibitions.

In addition to the provisions of § 264-4 above, the following discharges to the POTW by any user are specifically prohibited:

A. Storm- and surface waters, roof runoff and subsurface drainage. These discharges shall be made only to such sewers as are specifically designated by the Chief Operator as storm sewers, or directly to waters of the state, as may be permitted under an applicable SPDES permit. All existing discharges to the POTW of such waters shall be disconnected within 120 days of the effective date of this chapter. Groundwater and noncontact cooling water may be discharged to the POTW only if so authorized by a wastewater discharge permit and only if the Chief Operator determines that sufficient hydraulic reserve capacity exists at the POTW to accommodate such discharges. Authorization for such discharges may be revoked by the Chief Operator in his discretion at any time if he or she determines that the POTW's reserve capacity is no longer sufficient or is needed for other potential discharges, or that such discharge is detrimental in any way to the POTW. Existing unpermitted discharges of groundwater and noncontact cooling water shall be disconnected within 120 days of the effective date of this chapter.

B. Any liquids, solids, or gasses which by reason of their nature or quantity are, or may be, sufficient either alone or by interaction with other substances to cause a fire or explosion hazard in the POTW or be injurious in any other way to the POTW, its operation, or the health or safety of the POTW's workers. At no time shall a user discharge a wastestream with a closed-cup flashpoint of less than 140° F. or 60° C. using the test methods specified in 40 CFR § 261.21. Unless specifically authorized to do so by permit, no user shall discharge any quantity of the following materials: gasoline, kerosene, naphtha, benzene, toluene, xylene, fuel oil, ethers, ketones, aldehydes, chlorates, perchlorates, bromates, carbides, hydrides and sulfides, dry-cleaning fluids, and any other substance which the Chief Operator, DEC, or the EPA has notified the user is a fire hazard or explosive hazard to the system. The preceding list of substances is not a comprehensive list of prohibited substances. It a substance meets the general criteria set out in the first two sentences of this subsection, it is prohibited. [Amended 7-1-1998 by L.L. No. 5-1998]

C. Solid or viscous substances in quantities or of such size capable of causing obstruction to the flow in sewers or other interference with the proper operation of the POTW,
including but not limited to: grease, garbage with particles greater than 1/2 inch in any dimension, animal guts or tissues, paunch manure, bones, hair, hides or fleshings, entrails, whole blood, feathers, ashes, cinders, sand, spent lime, stone or marble dust, metal, glass, straw, shavings, grass clippings, rags, spent grains, spent hops, wastepaper, wood, plastics, rubber, tar, asphalt residues, residues from refining or processing of fuel or lubricating oil, mud or glass-grinding or -polishing wastes.

D. Wastewater having a pH less than 5.5 standard units or greater than 11.0 standard units, or wastewater having any other corrosive or caustic property capable of causing damage or hazard to structures, equipment and/or personnel at the POTW. Wastewater having a pH greater than 9.5 standard units, but in no case greater than 11.0 standard units, may be discharged to the POTW only if so authorized by a wastewater discharge permit, and only if the Chief Operator determines that the wastewater will not pose a hazard to or harm the POTW or treatment plant workers, will not cause pass-through or interference and will not raise the costs of operating the POTW.

E. Wastewater containing pollutants in sufficient quantity or concentration to cause the discharge of toxic pollutants in toxic amounts from the POTW into its receiving waters or to exceed the limitations set forth in a National Pretreatment Standard, in a pretreatment requirement, including the pollutant limitations referenced herein at § 264-6, or in a wastewater discharge permit issued pursuant to this chapter.

F. Any pollutants which, either singly or by interaction with other wastes, result in the presence of toxic gases, vapors or fumes within the POTW in a quantity that may cause POTW worker health and safety problems, or which create a public nuisance, or which create conditions sufficient to prevent entry into the sewers or other portions of the POTW for maintenance and repair.

G. Any substance which may cause the POTW’s effluent or other product of the POTW, such as residues, sludges or scums, to be unsuitable for disposal in any manner permitted by law or for reclamation and reuse, or to interfere with the reclamation process. In no case shall a substance discharged to the POTW cause the POTW to be in noncompliance with sludge use or disposal criteria, guidelines or regulations developed under Section 405 of the Act; or with any criteria, guidelines or regulations affecting sludge use or disposal developed pursuant to the Solid Waste Disposal Act, the Clean Air Act or state criteria applicable to the sludge management method being used.

H. Any pollutants, including oxygen-demanding pollutants (BOD, etc.) released in a discharge at a flow rate and/or pollutant concentration which will cause interference with the POTW.

I. Any wastewater with objectionable color not removed in the treatment process, such as but not limited to dye wastes and vegetable tanning solutions.

J. Heat in amounts which will inhibit biological activity in the POTW resulting in interference, but in no case heat in such quantities that the temperature at the POTW treatment plant exceeds 40° C. (104° F.). [Amended 7-1-1998 by L.L. No. 5-1998]

K. Any wastewater containing any radioactive wastes or isotopes of such half-life or concentration as may exceed limits necessary to comply with applicable state or federal regulations.
L. Any sludges or deposited solids resulting from an industrial pretreatment process. Sludges from food processing pretreatment processes may be discharged only if specifically allowed by permit.

M. Petroleum oil, nonbiodegradable cutting oil or products of mineral oil origin in amounts that will cause interference or pass-through.

N. Any trucked or hauled pollutants, except at discharge points designated by the POTW.

§ 264-6. Specific pollutant limitations.

In addition to the discharge prohibitions set forth in §§ 264-4 and 264-5 above, the POTW has developed specific discharge limitations, hereafter referred to as "local limits," to prevent pass-through and interference and to protect the safety and health of POTW workers. In no case shall a user's discharge to the POTW violate the local limits, as they may be amended from time to time, and which are set forth in separate laws adopted by the municipalities.

§ 264-7. Categorical Pretreatment Standards. [Amended 7-1-1998 by L.L. No. 5-1998]

Categorical Pretreatment Standards which the EPA has promulgated for specific industrial subcategories are hereby incorporated by reference. Where Categorical Pretreatment Standards are more stringent than the local limits, industrial users in those subcategories shall comply with the more stringent Categorical Pretreatment Standards in accordance with the compliance timetables for each Categorical Pretreatment Standard mandated by the EPA. If the EPA modifies an existing Categorical Pretreatment Standard or promulgates a new Categorical Pretreatment Standard for a particular industrial subcategory and that modified or new Categorical Pretreatment Standard contains limitations more stringent than the local limits, then upon its effective date the modified or new Categorical Pretreatment Standard shall immediately supersede, for industrial users in that subcategory, the local limits. The Chief Operator shall notify all affected industrial users of the applicable requirements under the Act, as well as of all requirements imposed by Subtitles C and D of the Resource Conservation and Recovery Act.

§ 264-8. Modification of Categorical Pretreatment Standards.

A. Pursuant to 40 CFR 403.7, where the POTW achieves consistent removal of pollutants limited by a Categorical Pretreatment Standard, the Special Joint Subcommittee may apply to the approval authority for modification of the discharge limits for a specific pollutant covered in the relevant Categorical Pretreatment Standard in order to reflect the POTW's ability to remove said pollutant. The Special Joint Subcommittee may modify pollutant discharge limits contained in a Categorical Pretreatment Standard only if the requirements of 40 CFR 403.7 are fulfilled and prior approval from the approval authority is obtained.

B. Pursuant to 40 CFR 403.13, an industrial user may apply to the approval authority for a fundamentally different factors variance from an applicable Categorical Pretreatment Standard if the factors relating to its discharge are fundamentally different from the factors considered by the EPA in establishing the standard. Such a variance can not be granted without the approval of the approval authority.
§ 264-9. State requirements.

Requirements and limitations on discharges set by the DEC shall apply in any case where they are more stringent than federal requirements and limitations or local limits.

§ 264-10. Right of revision.

The municipalities reserve the right to establish by amendment to this chapter or other local laws more stringent limitations or requirements on discharges to the POTW if deemed necessary to comply with the objectives presented in § 264-1A of this chapter. The Chief Operator also has the right to require a specific industrial user to comply with more stringent limitations or requirements than appear in this chapter or other laws if deemed necessary to comply with the objectives presented in § 264-1A of this chapter. No variances from the limitations or requirements in this chapter or other local laws will be allowed without approval of both the Chief Operator and the approval authority.


Except where expressly authorized to do so by an applicable pretreatment standard or pretreatment requirement, no industrial user shall ever increase the use of process water or in any other way attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with either a pretreatment standard or pretreatment requirement.


A. Where appropriate, the Chief Operator may impose mass limitations, concentration limitations or both types of limitations on an industrial user’s discharge. Mass limitations shall not be less stringent than the equivalent concentration-based limitations set forth in any applicable pretreatment standard or pretreatment requirement.

B. Where wastewater from a process regulated by a Categorical Pretreatment Standard is mixed prior to treatment with wastewaters other than those generated by the regulated process, the Chief Operator may fix alternative discharge limits applicable to the mixed effluent. Such alternative discharge limits shall be derived by using the combined waste stream formula as specified in 40 CFR 403.6(e).


Each industrial user shall provide necessary wastewater treatment as required to comply with the requirements of this chapter, including all National Pretreatment Standards and pretreatment requirements. Any facilities required to pretreat wastewater to a level which will achieve compliance with this chapter shall be provided, operated and maintained at the user’s expense. Detailed plans showing the pretreatment facilities and operating procedures shall be submitted to the Chief Operator for review and shall be acceptable to the Chief Operator before construction of the facility. The review of such plans and operating procedures will in no way relieve the user from the responsibility of modifying the facility as necessary to produce an effluent which complies with the provisions of this chapter.
including compliance with pretreatment standards or pretreatment requirements. Any subsequent changes in the pretreatment facilities or method of operation shall be reported to and be acceptable to the Chief Operator prior to the user's initiation of such changes. Bypasses are prohibited, except as allowed by 40 CFR 403.17.


A. Plans and procedures. All permitted industrial users and all other industrial users which store or use on-site any substance which, if discarded, would be considered hazardous waste, as that term is defined by the Resource Conservation and Recovery Act and its regulations, shall undertake measures to prevent the accidental discharge to the POTW of prohibited materials or other substances regulated by this chapter. Facilities to prevent the accidental discharge of prohibited materials and other substances shall be provided and maintained at the industrial user's own expense. Detailed plans showing facilities and operating procedures to provide this protection shall be submitted to the Chief Operator for review and shall be approved by the Chief Operator before construction of the facility. All existing industrial users required to undertake accidental discharge prevention measures shall submit such a plan within 60 days of the effective date of this chapter. No industrial user which commences discharging into the POTW after the effective date of this chapter and is required to submit such a plan shall be permitted to introduce pollutants into the system until accidental discharge procedures have been approved by the Chief Operator. Review and approval of such plans and operating procedures shall not relieve the industrial user of the responsibility to modify the user's facility as necessary to meet the requirements of this chapter.

B. Telephone notice. In the case of an accidental discharge by any industrial user, it is the responsibility of the industrial user to telephone immediately and notify the Chief Operator of the incident. The notification shall include the location of discharge, type of waste, concentration and volume of pollutants and wastewater and any and all corrective actions taken by the user.

C. Written notice. Within five days following an accidental discharge, the industrial user shall submit to the Chief Operator a detailed written report describing the cause of the discharge and the measures which have been and shall be taken by the user to prevent similar future occurrences. Such notification shall not relieve the industrial user of any expense, loss, damage or other liability which may be incurred as a result of damage to the POTW, fish kills or any other damage to persons, animals, aquatic life, property or natural resources; nor shall such notification relieve the industrial user of any fines, civil penalties or other liability which may be imposed by this chapter or other applicable law.

D. Notice to employees. A notice shall be permanently posted on the industrial user's bulletin board or other prominent place advising employees whom to call in the event of an accidental discharge. Employees shall ensure that all employees who may cause or allow such a discharge to occur, or who may know or have reason to know thereof, are advised of the emergency notification procedures.

ARTICLE III, Wastewater Discharge Permits