

## Appendix A: Existing Sewer and Water Conditions in the Fort Drum region

The following section is a summary of the existing conditions of sewer and water systems in the Fort Drum region. The data contained within is based on a variety of sources, including phone interviews and e-mail with local governments, interviews with local engineering professionals, the 2004 Residential Communities Initiative (RCI) Community Presentation, the 2006 “Water and Sewer Capacity Assessment” for the City of Watertown and DANC prepared by Stearns and Wheler, and the 2006 Lewis County Comprehensive Economic Development Strategy. Information, unless otherwise indicated, is as of August of 2008. Keep in mind that a percentage of the existing usage, particularly of water systems, is a result of leakages in local distribution systems.

### Jefferson County

#### Watertown/DANC

The existing sewage treatment and water filtration facilities in Watertown serve numerous communities and organizations, including the City and Town of Watertown and the Development Authority of the North Country (DANC), who have contracted with the city for sewer treatment and water service for their system. The DANC trunk lines feed into locally maintained systems serving Fort Drum and communities adjacent to the post, including sections of the Towns of Pamela, LeRay, Rutland, Watertown, Champion, and the Village of Black River. Each of the municipalities is responsible for the maintenance of local feeder lines and pump stations that tie into the DANC system, as well as local administrative functions. A portion of the existing capacity of both of the city’s facilities is allocated to DANC and the Town of Watertown through long-term contracts between the entities, with the rest of the capacity being available to the city for its use, with DANC having additional contracts in place with each of the municipalities it serves and Fort Drum.

Watertown’s water filtration facility can treat up to 15 million gallons of water per day, with 4 million gallons allocated for use by DANC clients, including Fort Drum. As of March 2008, on average, 5.5 million gallons of water per day is processed through the facility<sup>1</sup>. Of this amount, the city and town of Watertown are using 4 million gallons with the remaining 1.5 million gallons being used by communities served by DANC, including Fort Drum. Over the last two years, the amount of water used by the city and town has decreased by over 800,000 gallons per day, due, in part, to an upgrading of significant portions of the city’s pipeline system, including trunk lines in the area of Public Square and along Arsenal Street<sup>2</sup>. Fort Drum’s usage of water from the city, however, has increased substantially over the last two years, from an average of 800,000 gallons per day in 2006 to 1.5 million gallons per day in 2008. This is due to concerns about water quality at on-post wells after a long lasting fuel spill in the vicinity of WSAAF was found in 2006<sup>3</sup>. In several of the communities served by DANC, additional water supplies exist locally, in districts that are not along the DANC trunk line.

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<sup>1</sup> “Water Usage from the City of Watertown Water Plant” E-mail from Gary Pilon, City of Watertown, August 14, 2008.

<sup>2</sup> Correspondence from Gary Pilon, August 14, 2008

<sup>3</sup> Ibid

The city's Water Pollution Control Plant (WPCP) is permitted to treat up to 16 million gallons of sewage per day, based on maximum month flow. Of this capacity, 4.3 million gallons per day of the maximum month flow is allocated to DANC, based on several contracts between DANC and the city. As of 2006, DANC was exceeding its daily usage based on maximum month flow. Between 2003 and 2005, on average the WPCP treated 13.4 million gallons per day, of which 9.9 million gallons was from the city and town of Watertown and the remaining 3.5 million gallons was generated by Fort Drum and communities that have contracted for sewage treatment through DANC. The maximum month flow for the system was 20.2 million gallons per day, of which, 14.9 million gallons was from the city and town of Watertown and the remainder from communities served by DANC. The sewage created by DANC communities is routed into the WPCP via a direct force main from the Warneck Pump Station located approximately 2.4 miles from the WPCP site<sup>4</sup>.

A concern for Watertown, however, is that in periods of heavy rainfall or snowmelt, peak flows through the WPCP exceed allowable standards. The city is in the process of instituting a long-term control plan (LTCP) that will help to identify opportunities to lessen impacts to the existing sewer system in part, through "green" planning and the creation of stormwater retention facilities that will, over time, lessen direct stormwater flows into the WPCP.

### **Carthage and West Carthage**

Carthage and West Carthage share many services and programs, including water and sewer facilities, due to their proximity to one another and the close relationship between the two communities. The water and sewer systems serve the two villages and portions of the towns of Wilna and Champion immediately adjacent to the villages. This includes the Carthage Central School District campus just outside of West Carthage. There are approximately 1,800 total connections to the sewer and water systems, of which 1,700 are residential connections<sup>5</sup>.

The Carthage and West Carthage Water Pollution Control Facility (WPCF) was built in the mid 1970's. The facility typically operates at approximately 25% of its adopted maximum capacity. Capacity for the WPCF is 2 million gallons a day and the facility processes, on average, 500,000 gallons per day of sewage. Based on typical usage (300 gallons per day) and an average household size of 2.5 persons per household, the plant could absorb the equivalent of 5,000 homes before reaching full capacity<sup>6</sup>.

The two communities have had an inter-municipal agreement for water since 1994. The facility has a 1 million gallon per day capacity for filtration and is currently using, on average, 450,000 gallons a day. While the full capacity is 1 million gallons, the villages would begin to look to plant expansion once usage reaches 750,000 gallons per day. A large portion of the existing use comes from several institutions, including the Carthage Area Hospital and a nursing home in the area. Based on typical usage (250 gallons per day per household) and average household size, the

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<sup>4</sup> Stearns and Wheler LLC (2006) "Water and Sewer Capacity Assessment City of Watertown, NY and Development Authority of the North Country"

<sup>5</sup> Interview with Carthage/West Carthage officials, August 11, 2008

<sup>6</sup> Ibid

system could absorb the equivalent of 1,200 homes before needing to think about expansion or 2,200 homes before reaching full capacity<sup>7</sup>.

### **Philadelphia**

The Village of Philadelphia's water and sewer systems serve areas in the village and town of Philadelphia. According to the village's Department of Public Works, both the water and sewer facilities that are owned and maintained by the village are operating at 75% of capacity (200,000 gallon per day capacity for both sewer and water, with approximately 50,000 gallons per day of unutilized capacity on average.) The village's water system can absorb the equivalent of roughly 200 additional homes and its sewer system can add 166 more homes before reaching capacity<sup>8</sup>.

In addition to areas in the village, the village's sewer and water systems serve the Indian River Central School campus and several residential and commercial properties between the village and the campus. The village is also the water supplier for the Village of Theresa. Service to Theresa is provided via a recently completed trunk line along Route 26 between the villages.<sup>9</sup>

The village's water source and filtration facilities are on Fort Drum. The village has an existing easement that allows access to and use of the facilities. The village is looking to expand the existing water facility on the base in order to increase total system capacity<sup>10</sup>.

### **Black River**

According to the Village of Black River's recently retired public works director, the total capacity for the village's water system is 738,000 gallons per day. The current residential and commercial customers served by the village water system are using, on average, 180,000 gallons of water per day. Based on this, the town is utilizing slightly less than 25 percent of their capacity. This includes customers in the Town of Rutland Water District #1, but not several projects proposed for the village as of August 2008, including a Wingate Inn hotel and a large residential subdivision. The town could absorb the equivalent of slightly more than 2,230 homes before reaching the capacity of its existing water system<sup>11</sup>. While the village's sewer capacity is tied into that of the City of Watertown's WPCP through the DANC trunk lines along Route 3, the village is responsible for all lines that feed into the DANC system within the village boundaries, as well as all billing for sewer use<sup>12</sup>.

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<sup>7</sup> Ibid

<sup>8</sup> Interview with Village of Philadelphia officials, August 11, 2008

<sup>9</sup> Ibid

<sup>10</sup> Ibid

<sup>11</sup> Correspondence from Karl Vebber, August 11, 2008

<sup>12</sup> Interview with DANC, August 21, 2008

## **Antwerp**

Based on an interview with the village's public works supervisor, Antwerp is in a position to absorb some additional growth in the coming years. The village's sewer facility is operating at one-half of its capacity of 120,000 gallons per day. Sewer capacity exists to serve an additional 200 homes in the village<sup>13</sup>.

The village is in a strong position with its existing water service, with enough capacity to serve the equivalent of slightly more than 930 additional homes. Water service extends northward along Route 11 to the village's water tower, approximately one mile north of Antwerp village, while sewer service is limited to the municipal boundaries of the village<sup>14</sup>.

## **Evans Mills**

Both sewer and water inside of the village boundaries serve the Village of Evans Mills, located to the north of the post. The village's sewer system is currently operating at 85 percent of capacity. There is capacity for approximately 50 additional homes to be connected to the system. The village is in the early stages of consideration in the upgrading and expansion of the existing sewer facilities<sup>15</sup>.

The capacity of the village's water filtration facility is somewhat greater, with existing capacity on hand to handle 300 more homes. While capacity exists in the overall water system, according to Evans Mills officials, the village will soon be replacing its water tower along Route 11. The village looks to construct the new tower in the spring of 2009. Once this construction is complete, the village would be able to allow a limited amount of additional development to take place, and to expand its existing sales of water to areas in the Town of LeRay adjacent to the village<sup>16</sup>.

## **Deferiet and Herrings**

The villages of Deferiet and Herrings each have independent water and sewer systems in place. In both cases, due to the small size of the municipalities limiting their ability to fund expansion of their existing systems, there is a limited additional sewer capacity of no more than a few dozen homes between the two villages.<sup>17</sup>

Deferiet has an excess of water capacity in the range of 160,000 gallons per day in their facility. This is due to the closure of the village's paper mill along the Black River, at one time the biggest user of Deferiet's water supply. At the same time, Herrings is looking for an alternative water source, since their existing water supply has been contaminated by the former location of a large scale dry cleaning business in the village. While Herrings has been able to do a great deal

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<sup>13</sup> Interview with Village of Antwerp officials, August 13, 2008

<sup>14</sup> Ibid

<sup>15</sup> Interview with Village of Evans Mills officials, August 15, 2008

<sup>16</sup> Ibid

<sup>17</sup> Interview with Kris Dimmick, Bernier Carr, August 20, 2008

of work to make their water potable, this process is costly, and the physical plant of their water facility is aging. As of August, 2008, the Village of Herrings and the Village of Deferiet are investigating the potential sale of water from Deferiet to Herrings. This water would be delivered to Herrings by a pipeline along the Route 3 corridor, a distance of approximately one mile<sup>18</sup>.

## **Lewis County**

### **Castorland**

The Village of Castorland has both sewer and water systems that serve the village. Based on the 2006 Lewis County Comprehensive Economic Development Strategy, Castorland's sewer system has a total capacity of 25,000 gallons per day. The existing village sewer system is operating at over 100% of its legal capacity, and the village is currently in non-compliance with state regulations<sup>19</sup>.

Conversely, the village's water supply is operating at less than 25 percent of its available capacity, with the village having enough remaining capacity at its water plant to add the equivalent of nearly 550 homes to the system<sup>20</sup>.

### **Copenhagen**

In Copenhagen, the village is struggling to meet its infrastructure needs. As of 2006, the village's water facility was operating at 80% of the plant's capacity, with 20,000 gallons per day of remaining capacity. Based on an interview with the village's public works supervisor, the village is in the intermediate stages of improving and expanding its water filtration facilities, having recently received a \$2 million grant and a \$1 million dollar loan from the NY State Environmental Facilities Corporation's Drinking Water State Revolving Fund to pay for the expansion<sup>21</sup>. As part of this project, Copenhagen is in the process of acquisition of a new water source since its current water supply is not a clean source<sup>22</sup>. These improvements are expected to be completed in the 2010-2011 timeframe<sup>23</sup>. Once this expansion is complete, the village may work with the Town of Denmark to extend service into areas of the town adjacent to Copenhagen.

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<sup>18</sup> Ibid

<sup>19</sup> 2006 Lewis County Comprehensive Economic Development Strategy

<sup>20</sup> Ibid

<sup>21</sup> New York State Environmental Facilities Corporation (2008) "Environmental Facilities Corporation Announces \$3 Million For Copenhagen Water Project" Retrieved on August 22, 2008 from <http://www.nysefc.org/home/index.asp?page=8&recordid=688>

<sup>22</sup> WWNY TV (2008) "Water Project in Copenhagen Moving Forward, Despite Not Owning Water Source" Retrieved on August 22, 2008 from <http://www.wwnytv.net/index.php/2008/08/01/water-project-in-copenhagen-moving-forward-despite-not-owning-water-source/>

<sup>23</sup> Interview with Village of Copenhagen Public Works, August 11, 2008

The village's sewer facility serves areas within the village boundaries. Completed in 1999, the facility is operating at its adopted capacity of 100,000 gallons per day as of 2006. There are no plans in place to expand the village's sewer facility<sup>24</sup>.

### **Harrisville**

Based on an interview with the village's Public Works Superintendent, Harrisville has village-wide water service. The village water system also serves several residential properties adjacent to the village limits. As of August, 2008, the village's water system is operating at 20% of capacity, and could handle the equivalent of nearly 2,700 additional homes before reaching capacity.

Harrisville has discussed the creation of sewer service within the village. There is no timeframe on construction of a system, since funding is not available for the construction of a village-wide sewer system at this time.

### **Lowville:**

Based on correspondence from the Lowville village administrator, the village's water system serves all of the Village, water districts within the Town of Lowville, and sections of the towns of Martinsburg and Watson. The system is currently operating at more than 80 percent of the allowed capacity, and could absorb the equivalent of 800 additional homes at the existing capacity<sup>25</sup>.

The village's sewer system serves areas mostly in the village and town of Lowville. The system is operating at 56 percent of the available capacity, . The village could absorb the equivalent of nearly 2,700 additional homes without additional capacity being added to the existing system. The village is in the process of relocating its sewage discharge point from Mill Creek, adjacent to the existing treatment facility to the Black River. This will allow the village to increase its daily discharge limit to 1.8 million gallons of waste per day<sup>26</sup>.

## **St. Lawrence County**

### **Gouverneur**

The Gouverneur sewer system serves both areas inside of the village and areas within the Town of Gouverneur's Sewer District 1. The main treatment facility has a total capacity of 3.76 million gallons. On average, the village is processing less than 1 millions gallons of waste per day. In peak periods of heavy rainfall, since storm sewers are directly tied into the overall system, the outflow from the village's sewer facility into the Oswegatchie River exceeds the allowable limit, causing the village to operate under a consent order with the NYS Department of Conservation.

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<sup>24</sup> 2006 Lewis County Comprehensive Economic Development Strategy

<sup>25</sup> Email from Village of Lowville, August 12, 2008

<sup>26</sup> Virkler S. "Lowville sewage project to cost far less than expected" *Watertown Daily Times*, April 29, 2008

In late 2008 or early 2009, the village will commence on a \$2.4 million upgrading of its existing sewer plant. These improvements will include providing aerators for the holding lagoons, aiding in providing a limited amount of increased capacity for the facility in order to draw industrial growth to the community<sup>27</sup>. Also, in 2010-2011, during the proposed NYSDOT upgrading of Main Street (Route 11), the village looks to upgrade the existing sewer and water pipes along this corridor<sup>28</sup>. While much of the existing system has been upgraded over the years, the village needs to work to separate storm sewers from the sanitary sewer system.

The village's water system serves over 4,250 residents within the village limits. On average, 715,000 gallons of water per day are purified at the town's water filtration plant<sup>29</sup>. The village's water treatment facility has a total capacity of 2 million gallons per day. However, due to the lack of 24 hour staffing or automation of the facility, its effective capacity is in the range of 850,000-900,000 gallons per day<sup>30</sup>. The village is in the early stages of investigating measures that would allow Gouverneur to increase the effective capacity of its water plant. The Town of Gouverneur contracts with the village for water for a limited number of homes and businesses adjacent to the village. DANC supplies technical assistance to the town for its water system<sup>31</sup>

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<sup>27</sup> Ellen, M. (2008) "Village to upgrade its sewage system" *Watertown Daily Times*, May 20, 2008

<sup>28</sup> Interview with Dorothy Vorce, Gouverneur Mayor, August 22, 2008.

<sup>29</sup> ***Village of Gouverneur 2007 Water Quality Report.***

<sup>30</sup> Interview with Mickey Lehman, Bernier Carr, August 19, 2008

<sup>31</sup> Interview with Village of Gouverneur Water Filtration Plant officials, August 20, 2008