

2.7 Watershed Summary: Parameter Relationships

Several relationships among watershed parameters become apparent when watershed-wide data are examined. These relationships are discussed here in general, while specific subwatershed related relationships are discussed in more detail in subsequent sections.

2.7.1 Soils, Topography, and Land Forms

Topography of the watershed is generally undulating to nearly level, but there are narrow steep slopes adjacent to the Iroquois River and its small tributary streams. The steeper slopes adjacent to streams would be characteristic of areas prone to soil loss, especially if they are farmed or lack vegetative cover year round. These would be a potential source of sediments and excess nutrients in the watershed. These areas should be mapped and then targeted for appropriate treatment BMP's based on site conditions.

Most soils occurring on nearly level areas of the watershed are generally classified as prime farmland. These areas can be a significant source of sediment and nutrients if not managed properly. They can also be a source of nitrogen leaching when artificially drained. Conservation tillage and other best management practices are extremely important to minimize or eliminate the deposition of windblown particles in waterways.

As noted earlier, most of the soil types on the nearly level and depressional areas within the watershed are hydric and require the installation of subsurface drainage tile and/or open drainage channels to facilitate farming operations. These extensive drainage networks, as seen in Figure 10 Legal and Private Drains in Iroquois Watershed, often facilitate nitrogen leaching from the soil. Specific watersheds with both extensive tile drain networks and open ditches, plus low use of conservation tillage methods could be significant sources of excess nitrogen to waterways. These areas will be noted in the subwatersheds section.

2.7.2 Development and Population Centers

The largest population center is the City of Rensselaer with 8 CSO outfalls and significant impervious surfaces. In terms of largest urban non-point pollution sources, this is most likely the area, especially given that the Iroquois River flows right through the middle of the city.

Other towns and communities in the area, especially unsewered areas as mapped in Figure 21 Unsewered Areas with Significant Populations could be sources of urban non-point pollution, especially failing septic tanks that could be contributing E.coli and excess nutrients to the waterways. Given that more than 90% of the soils in the watershed are poorly suited for conventional septic systems, alternative wastewater treatment systems and regional sewer districts should be encouraged. Separation

of combined sewer overflow (CSO) systems and the use of low impact developments and management practices should also be encouraged.

In urban and suburban areas, water conservation and the use of storm water best management practices should be encouraged.

2.7.3 High Quality Habitat, ETR Species, and Recreational Opportunities

A significant amount of publicly-owned land located within the Upper Iroquois watershed exists, especially in the Oliver Ditch subwatershed. Since increasing recreational access to the river is a stakeholder concern the variety of high quality habitats and endangered, threatened, and rare species in these areas and outside already protected areas creates a unique opportunity in the watershed. Publicly-owned land and non-profit conservation land that is not routinely visited by watershed stakeholders could provide a great opportunity to positively impact water quality. It is clear from the social indicators survey that stakeholders value recreational use of land and if we can connect people to what is in their own back yards is directly connected to water quality, then we can have an impact. People care and protect what they know and are connected too. Enhancement of these areas could serve as demonstration sites which will allow stakeholders to view management options before enacting them on their own property. As stakeholder's love for these areas grows, willingness to protect high quality species and habitat, and their desire to positively impact water quality and the environment will increase the opportunity present in the watershed to improve water quality. Greater efforts need to be made to increase the number of access points along the main stem of the Iroquois River and appropriate tributaries. Hydrology and soil types that are hydric may be the areas to focus on getting more access points, while also looking to protect these areas as high quality habitat.