

CITY OF RANDOLPH



Project background:

Approximately 70 acres of land around the City of Randolph will be used for stabilization ponds and spray irrigation for the city's new sanitary system.



What is needed:

- 10 acres for stabilization ponds
 - City purchases land for ponds
- 60 acres for spray irrigation
 - 2 options:
 1. City purchases land
 2. City purchases easement to spray irrigate – land owner retains land but agrees to spray irrigate over the land and use it for one of the crops below. Landowner keeps ownership of the crops



Crops that can be planted:

- Fodder, fiber, and seed crops
- Food crops for direct human consumption with approval from distributor.
- Orchards and vineyards with no contact between edible portion
- Non-food bearing trees, such as Christmas trees, nursery stock and sod farms not irrigated less than 14 days before harvest



Other information:

- The city is responsible for all maintenance and operation of ponds
- Effluent is municipal waste only, very clean waste in terms of water

Municipal Wastewater Reuse Fact Sheet

What does the landowner get out of the deal?

- Up to 16 million gallons of free water to be used for irrigation per year (multiple discharges throughout the growing season)
- Nutrients in water that is irrigated
- Compensation for land
- Spray irrigation equipment
- Access to the ponds if future development of land is desired
- Helping the environment and the City of Randolph
- Other items to be negotiated

How does the system work?

- Water (effluent) is collected in the city to a central pump station (a lift station)
- Water is pumped to the stabilization pond
 - Ponds are sized to hold 210 days of water to get the city through the winter
- Stabilization ponds are three separate ponds
 - Three tier system with the water getting cleaner as it flows from one pond to another
 - Water is treated naturally by UV light from the sun and microorganisms over the 210 day period going from 300 parts per million (ppm) of bacteria (BOD) to 20-30 ppm BOD
 - No bubbler is required in this system
 - Similar to the pond system on the north side of Hampton
- Water is sprayed on the fields providing nutrients and water to the field



Stabilization pond system outside the City of Elmore

Water quality

- Output from the ponds is 20-30 ppm BOD, 20-30 ppm of suspended solids (TSS)
- To put this into context:
 - Raw sewage: BOD 300 ppm, TSS 200 ppm
 - Properly functioning septic system effluent leaving a septic tank: BOD 170 ppm, TSS 60ppm
 - Typical storm water pond: BOD 5-30 ppm, TSS 12-16 ppm
 - Drinking water nitrate limit: 10 ppm

