



VILLAGE OF WALWORTH DRAINAGE STUDY - SOUTH

Village of Walworth
Friendly Village on the Square

BAXTER & WOODMAN
Consulting Engineers

VILLAGE OF WALWORTH DRAINAGE STUDY - SOUTH

- CHRONIC FLOODING
- RAIN EVENTS
- LEVEL OF PROTECTION
- IMPROVEMENT ALTERNATIVES
- PHASED IMPROVEMENTS

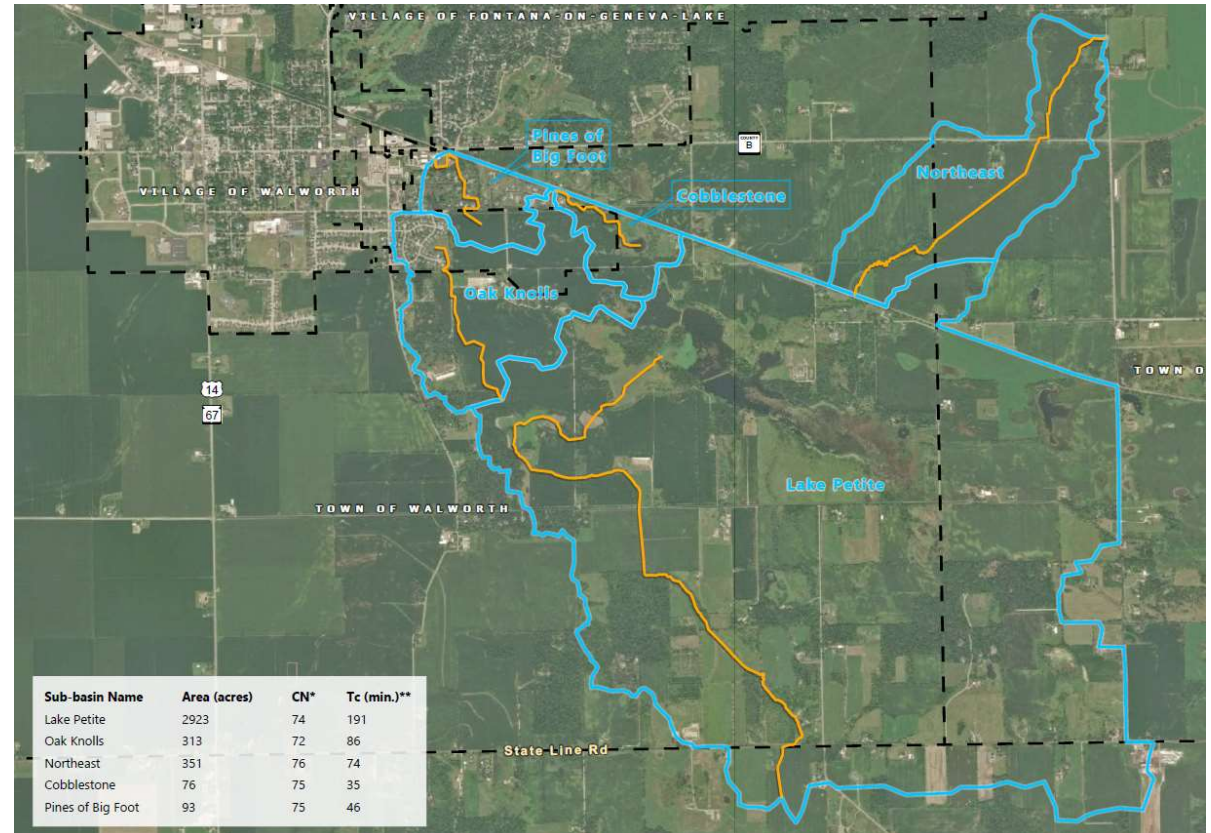
VILLAGE OF WALWORTH DRAINAGE STUDY - SOUTH

- OAK KNOLLS SUBDIVISION - CHRONIC FLOODING
- WALKOUT BASEMENTS SUSCEPTIBLE TO FLOODING
- STREET AND YARD FLOODING
- EXISTING DRAINAGE SYSTEM



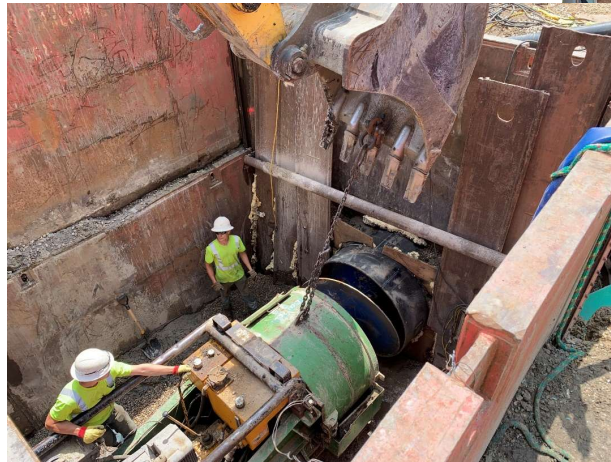
VILLAGE OF WALWORTH DRAINAGE STUDY - SOUTH

- RAIN EVENTS
 - 4% CHANCE OF OCCURRENCE (4.9"/24 HR, 25-YEAR STORM)
 - 2% CHANCE (5.6"/24 HR, 50-YEAR STORM)
 - 1% CHANCE (6.4"/24 HR, 100-YEAR STORM)
 - SEPTEMBER 2019 STORM EVENT (11"/4 DAYS, 0.2% TO 0.1% CHANCE, 500 TO 1000 YR)
- TRIBUTARY DRAINAGE AREA
 - 6 SQUARE MILES
 - LAKE PETITE
- COMPUTER MODELING
 - UPSTREAM TRIBUTARY
 - OAK KNOLLS BASIN ELEVATIONS
 - LEVEL OF PROTECTION



VILLAGE OF WALWORTH DRAINAGE STUDY - SOUTH

- IMPROVEMENT ALTERNATIVES
 - RAISE BERM AROUND BASIN
 - ELIMINATE WALKOUT BASEMENTS
 - FILL REAR YARDS
 - POND OUTFALL
 - GRAVITY SEWER OUTFALL
 - PUMPING SYSTEM
 - OUTFALL SWALES AND CULVERTS
 - ENLARGE OAK KNOLLS INFILTRATION BASIN
 - EXPAND BASIN TO EAST INTO FUTURE PINES OF BIG FOOT DEVELOPMENT






ALTERNATE . 1



Source(s): Walworth County GIS 2019; Baxter & Woodman, 2020



-  Option A - Gravity Sewer
-  Option B - Berm
-  Option C - Storage Basin

ATTACHMENT B

ALTERNATIVE 1 - GRAVITY STORM SEWER OUTLET WITH OPTIONS

Storm Water Drainage Study - South

Village of Walworth, WI

ALTERNATE . 2



Source(s): Walworth County GIS 2019; Baxter & Woodman, 2020



- PS → Option A - Pump Station and Forcemain
- Option B - Berm
- ▨ Option C - Storage Basin

ATTACHMENT C

ALTERNATIVE 2 - PUMPED OUTLET TO FULL LENGTH PIPE WITH OPTIONS

Storm Water Drainage Study - South
Village of Walworth, WI

ALTERNATE . 3



Source(s): Walworth County GIS 2019; Baxter & Woodman, 2020



- Option A - Pump Station and Forcemain
- Option A - Culvert
- Option A - Swale
- Option B - Berm
- Option C - Storage Basin

ATTACHMENT D

ALTERNATIVE 3 - PUMPED OUTLET TO PIPE AND SWALES WITH OPTIONS

Storm Water Drainage Study - South
Village of Walworth, WI

VILLAGE OF WALWORTH

DRAINAGE STUDY - SOUTH

PHASED IMPROVEMENTS

IMPROVEMENT	LEVEL OF PROTECTION	INCREMENTAL COST	TOTAL COST
EXISTING CONDITION	4% CHANCE OCCURRENCE (25-YR, 24 HR STORM EVENT)	\$0	\$0
RAISE BERM DREDGE BASIN	2% CHANCE OCCURRENCE (50-YR, 24 HR STORM EVENT)	\$850,000	\$850,000
36" GRAVITY SEWER	1.67% CHANCE OCCURRENCE (60-YR, 24 HR STORM EVENT)	\$3.6M	\$4.5M
EXPAND OAK KNOLLS BASIN	1.33% CHANCE OCCURANCE (75-YR, 24 HR STORM EVENT)	\$2.9M	\$7.4M

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QUESTIONS?

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