

## CHAPTER 3

### EXISTING STORM DRAINAGE PROBLEMS AND HYDRAULIC OBSTRUCTIONS

#### Existing Storm Drainage Problems

Existing drainage problems in the Chatham Run watershed are limited to local flooding of streets and properties. Information regarding existing drainage and flooding problems was collected from local municipalities by the Clinton County Conservation District, and is presented in Table 3-1. This study does not present specific solutions for each problem area. However, preliminary recommendations for alleviating the specific problem are provided in Table 3-1.

**Table 3-1**  
**Inventory of Existing Stormwater Drainage Problems**

Location	Municipality	Problem	Recommendation
Park Avenue from SR 1006 to Woolrich Park	Pine Creek	Street Flooding	Increase existing storm sewer capacity.
Intersection of T-439 and Park Avenue	Pine Creek	Street Flooding	Increase existing storm sewer capacity.
Park Avenue 1,500 feet south of T-439	Pine Creek	Street Flooding	Increase existing storm sewer capacity.
Sagamore Hills	Pine Creek	Yard/ Street Flooding	Clear and maintain culvert and swale. Increase existing storm sewer capacity.
Park Avenue at Pine Creek/Dunnstable Boundary	Pine Creek Dunnstable	Street Flooding	Extend existing storm sewer.
Lower Reaches of Big Plum Run Between SR 0150 and Big Plum Run Road	Dunnstable	Stream Flooding, Erosion, Sediment Deposits	Requires further study.
Intersection of SR 1008 and Park Avenue	Dunnstable	Street Flooding	Increase existing storm sewer capacity.

## **Floodplains**

The 100-year floodplain limits along Little Plum Run, Big Plum Run, and Chatham Run mainstem appear on the Flood Insurance Studies (FIS) prepared by or for the Federal Emergency Management Agency (FEMA). These studies are available for review at each municipal office. Boundaries of the 100-year flood were delineated for Dunnstable Township (September 1976), Pine Creek Township (October 1976), and Woodward Township (July 1976). Gallagher Township is located in the headwaters of the Chatham Run watershed and is less susceptible to major flooding problems. A recommendation of this Study is to update the current FIS for each of the subwatersheds in the Chatham Run watershed.

## **Flood Hazard Areas**

Based on the aforementioned 100-year floodplain information, flood hazard areas within the 100-year floodplain are limited to highways and agricultural areas located along Big Plum and Little Plum Runs, and the lower reaches of Chatham Run mainstem. In Pine Creek Township, residences between Chatham Run mainstem and Park Avenue are located within the 100-year floodplain and are designated as flood hazard areas.

The increase in runoff from upstream development impacts the flood hazard areas that are located downstream by increasing the magnitude of the flood discharges and depths in the downstream areas. However, the limited nature of proposed development in the Chatham Run watershed, and its location within the watershed would produce small increases in flood discharges, velocity, and depth in the floodplain areas.

## **Survey of Significant Hydraulic Obstructions**

Obstructions along channels limit flow capacity and can potentially cause significant ponding or diversion of water. Thirty-eight significant hydraulic obstructions were identified within the Chatham Run watershed. A list of hydraulic obstructions and structure sizes appears in Table 3-2. There are three reservoirs in the Chatham Run watershed, and these include Caldwell Dam, Woolrich Water Company Number 1, and Woolrich Water Company Number 2. Since these reservoirs do not provide any storage for flood protection or stormwater management, they are not applicable to this study.

**Table 3-2 Inventory of Obstructions**

<b>ID</b>	<b>NAME</b>	<b>TYPE</b>	<b>SUBWATERSHEDS</b>
1	CHATHAM RUN at HARLEY DR	RCB DOUBLE	CHATHAM RUN
2	UNNAMED #1at PARK AVE	RCB SINGLE	CHATHAM RUN
3	CHATHAM RUN at GRAVEL HILL RD	BRIDGE	CHATHAM RUN
4	UNNAMED at GRAVEL HILL RD	CMP ARCH	CHATHAM RUN
5	CHATHAM RUN at MAIN ST	BRIDGE	CHATHAM RUN
6	SULPHUR RUN at DUTCH HOLLOW RD	CMP	SULPHUR RUN
7	UNNAMED at DUTCH HOLLOW RD	RCP	SULPHUR RUN
8	CHATHAM RUN at LOCUST ST	BRIDGE	CHATHAM RUN
9	CHATHAM RUN at W SPRUCE ST	BRIDGE	CHATHAM RUN
10	CHATHAM RUN at ELLIS ISLAND LN	BRIDGE	CHATHAM RUN
11	CHATHAM RUN at MOORE LN	BRIDGE	CHATHAM RUN
12	UNNAMED #2 at COUDERSPORT PIKE	DOUBLE RCP	CHATHAM RUN
13	UNNAMED #3 at COUDERSPORT PIKE	CMP ARCH (5 FOOT)	CHATHAM RUN
14	LITTLE PLUM RUN at BEARPEN HOLLOW RD	RCP	LITTLE PLUM RUN
15	LITTLE PLUM RUN at LITTLE PLUM RUN RD	CMP	LITTLE PLUM RUN
16	LITTLE PLUM RUN at PRIVATE DR 835	BRIDGE	LITTLE PLUM RUN
17	LITTLE PLUM RUN at GERMAN RD	BRIDGE	LITTLE PLUM RUN
18	LITTLE PLUM RUN at WEAVER HILL RD	STRUCTURAL PLATE ARC	LITTLE PLUM RUN
19	LITTLE PLUM RUN at WEAVER HILL RD	CMP ARCH	LITTLE PLUM RUN
20	LITTLE PLUM RUN at BIG PLUM RUN RD	RCB	LITTLE PLUM RUN
21	LITTLE PLUM RUN at STEWART RD	BRIDGE	BIG PLUM RUN
27	LITTLE PLUM RUN at CIDER PRESS RD	BRIDGE	BIG PLUM RUN
22	UNNAMED #1 at N VISTA DR	HDPE TYPE S	BIG PLUM RUN
23	UNNAMED #2 at N VISTA DR	HDPE TYPE S	BIG PLUM RUN
24	LITTLE PLUM RUN at TOBACCO SHED RD	CMP	BIG PLUM RUN
25	UNNAMED at CIDER PRESS RD	RCB	BIG PLUM RUN
26	LITTLE PLUM RUN at PRIVATE DR	RCP OVAL	BIG PLUM RUN
28	UNNAMED #1 at BIG PLUM RUN RD	HDPE TYPE S	BIG PLUM RUN
29	UNNAMED #2 at BIG PLUM RUN RD	RCP (WITH CBC 3')	BIG PLUM RUN
30	UNNAMED #3 at BIG PLUM RUN RD	HDPE TYPE S	BIG PLUM RUN
31	UNNAMED #4 at BIG PLUM RUN RD	HDPE TYPE S	BIG PLUM RUN
32	BIG PLUM RUN at BIG PLUM RUN RD	BRIDGE	BIG PLUM RUN
33	BIG PLUM RUN at BIG PLUM RUN RD	BRIDGE	BIG PLUM RUN
34	BIG PLUM RUN at BIG PLUM RUN RD	BRIDGE	BIG PLUM RUN
35	UNNAMED #1 at GERMAN RD	CMP	BIG PLUM RUN
36	UNNAMED #2 at GERMAN RD	HDPE	BIG PLUM RUN
37	BIG PLUM RUN at GERMAN RD	CMP ARCH	BIG PLUM RUN
38	UNNAMED #1 at WEAVER HILL RD	RCP	BIG PLUM RUN

RCB – Reinforced Concrete Box

CMP – Corrugated Metal Pipe

RCP – Reinforced Concrete Pipe

RCB – Reinforced Concrete Box

HDPE – High Density Polyethylene Pipe (Type S= Smooth Bore)