APPENDIX D STREAM CORRIDOR ASSESSMENT

Stream channel modification, floodway encroachment and non-point sources of pollution are evident throughout the Walnut Creek watershed. Some modifications are necessary for road and railway crossings, navigation, and stream improvements, like providing bank stabilization and fish habitat improvement. Other conditions appear to have negative environmental impacts. These conditions can create dangerous flooding problems and are causing detrimental impacts to the health and diversity of the aquatic biota.

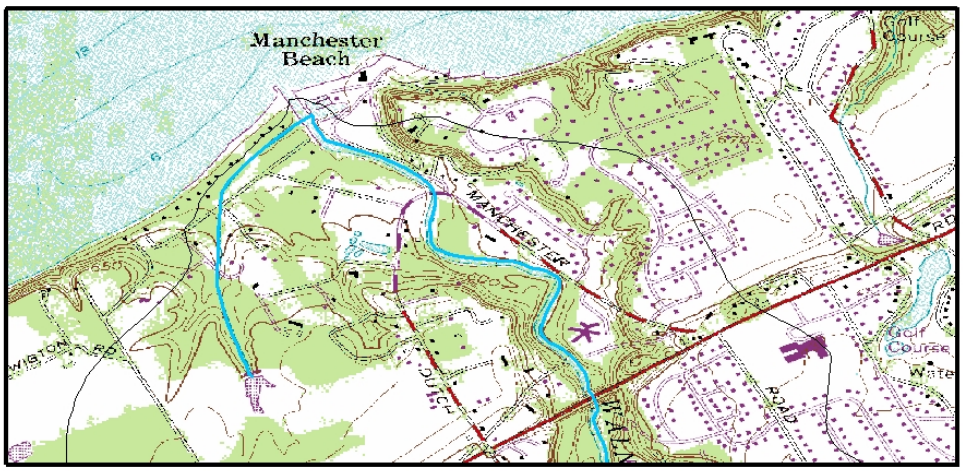
DEP staff conducted a walking survey of portions of Walnut Creek, using the Stream Corridor Assessment (SCA) survey protocols, developed by the State of Maryland - Department of Natural Resources, as a guide. These protocols are intended as a rapid assessment tool to identify potential environmental problems, such as:

- Erosion Sites
- Inadequate Stream Buffers
- Fish Migration Blockages
- Exposed or Discharging Pipes
- Channelized Stream Sections
- Trash Dumping Sites
- In or Near Stream Construction
- Unusual Conditions

Several sections of Walnut Creek, representative of the sub-watersheds, were surveyed. The observations are intended as a *general* assessment of the primary impacts observed within the stream corridor. This assessment should not be considered as an exhaustive survey of all impacts to Walnut Creek, but rather an inventory of the most common, obvious, impact types.

The conditions were photographed and are displayed to provide a tour of the Walnut Creek basin. The order of the photographs is traversing from the mouth of Walnut Creek upstream. Each photo represents a site considered as an individual and discreet “point” impact to the stream.

Walnut Creek Watershed



The following photos document the stream corridor assessment of **subwatershed 1**. Within this survey segment were also several other types of impacts, either too numerous to count or of a "non-point" type. These included: unmitigated erosional features, lack of sufficient riparian buffer zone, small storm water outfalls, uncontrolled highway and parking lot runoff, encroaching residential construction.

Photo 1 – Channel Alteration / Inadequate Buffer at the mouth of Walnut Creek

Photo 2 – Exposed Pipe, PFBC Manchester Facility

Photo 3 – Erosion Site, PFBC Manchester Facility

Photo 4 – Channel Alteration at 24 WC

Photo 5 – Erosion Site, PFBC Manchester Facility

Photo 6 – Channel Alteration for habitat improvement/ potential fish barrier, PFBC Manchester Facility

Photo 7 – Channel Alteration, Downstream Manchester Road Bridge

Photo 8 – Channel Alteration, Manchester Road Bridge

Photo 9 - Garbage deposited along the high water mark of Walnut Creek at 23WC

Photo 10 - Garbage deposited along the high water mark of Walnut Creek at 23WC

Photo 11 – Water Withdrawals / Encroachments , Upstream Manchester Rd. Bridge

Photo 12 – Water Withdrawal/Inadequate Buffer, Upstream Manchester Rd. Bridge

Photo 13 – Pipe Outfall, Upstream Manchester Rd. Bridge

Photo 14 – Unusual Condition / Unidentified Seep, Upstream Manchester Rd. Bridge

Photo 15 – Inadequate Buffer, Upstream Manchester Rd. Bridge

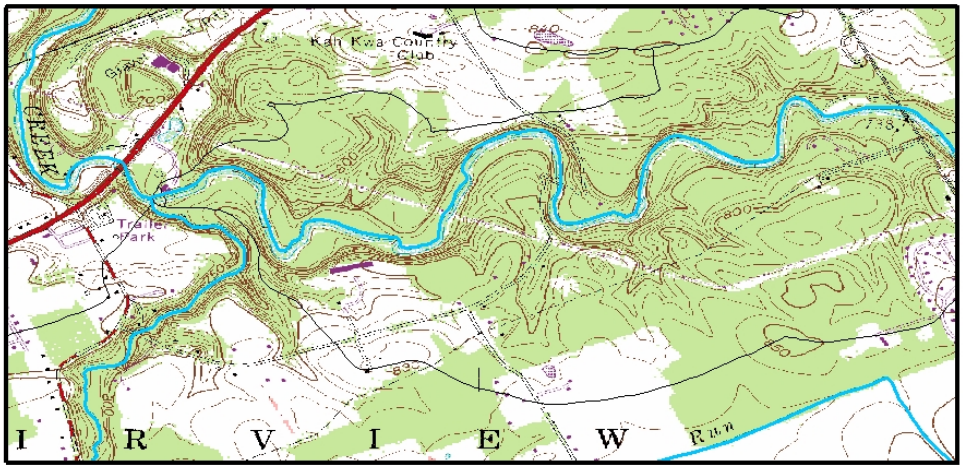
Photo 16 – Water Withdrawal / Inadequate Buffer Upstream Manchester Rd. Bridge

Photo 17 – Channel Alteration, Upstream Manchester Rd. Bridge

Photo 18 – Sedimentation, Downstream U.S. Highway 5 Bridge

Photo 19 – Channel Alteration / Sedimentation, Downstream U.S. Highway 5 Bridge

Walnut Creek Watershed



The following map depicts the second stream section surveyed as part of this assessment. The section is approximately 2.0 miles in length, between the CSXT Railroad bridge crossing, and the Millfair Road Bridge Crossing

Photo 20 – Channel Alteration / Sedimentation, Downstream CSXT RR Bridge

Photo 21 – Channel Alteration, Downstream CSXT RR Bridge

Photo 22 – Sedimentation, Downstream CSXT RR Bridge

Photo 23 – Sedimentation, Downstream CSXT RR Bridge

Photo 24 – Channel Alteration / Sedimentation, Downstream CSXT RR Bridge

Photo 25 – Erosion / Sedimentation, Downstream CSXT RR Bridge

Photo 26- Sedimentation, Downstream Elevated CSXT RR Bridge

Photo 27 – Sedimentation / Debris Jam, Downstream Elevated CSXT RR Bridge

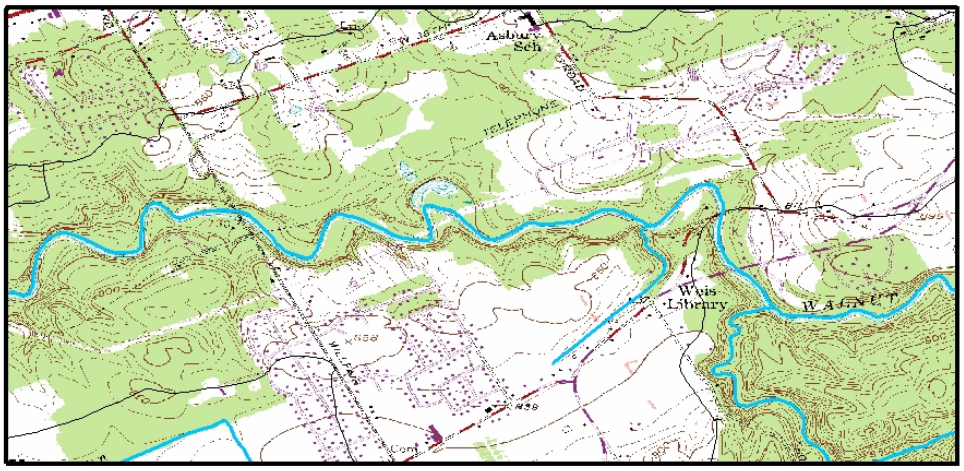
Photo 28 - Sedimentation/Debris Jam, Upstream Elevated CSXT RR Bridge

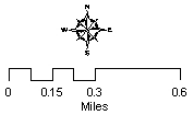
Photo 29 – Sedimentation, Upstream Elevated CSXT RR Bridge

Photo 30 – Inadequate Buffer, Upstream Elevated CSXT RR Bridge

Photo 31 – Sedimentation, Upstream Elevated CSXT RR Bridge

Walnut Creek Watershed





The following map depicts the third stream section surveyed as part of this assessment. The section is approximately 2.0 miles in length, between The Millfair Road Bridge Crossing, and approximately 0.75 miles upstream from the Old Sterrettania Road Bridge Crossing

Photo 32 – Inadequate Buffer, Downstream Millfair Road Bridge

Photo 33 – Channel Alteration, Downstream Millfair Road Bridge

Photo 34 – Channel Alteration 20UNT

Photo 35 – Channel Alteration / Pipe Outfall, Downstream Millfair Road Bridge

Photo 36 – Channel Alteration, Upstream Millfair Road Bridge

Photo 37 – Pipe Outfall, Upstream Millfair Road Bridge

Photo 38 – Unusual Condition / Unidentified Seep, Upstream Millfair Road Bridge

Photo 39 Erosion Site, Upstream Millfair Road Bridge

Photo 40 – Exposed Pipe, Upstream Millfair Road Bridge

Photo 41 – Channel Alteration, Upstream Millfair Road Bridge

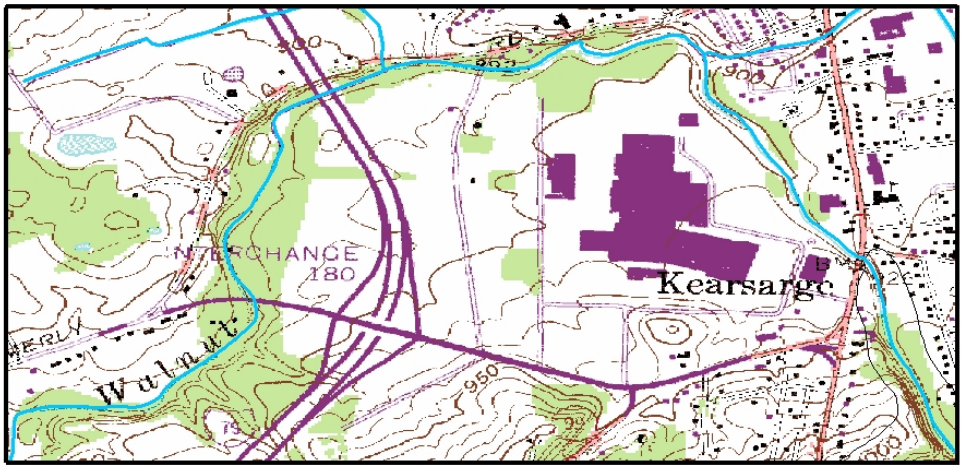
Photo 42 – Channel Alteration, Upstream Millfair Road Bridge

Photo 43 – Pipe Outfall, Upstream Old Sterritania Road Bridge

Photo 44 Channel Alteration, Upstream Old Sterritania Road Bridge

Photo 45 Lake of Riparian Buffer at 17TR

Walnut Creek Watershed



The following depicts the fourth stream section surveyed as part of this assessment. The section is approximately 1.75 miles in length from downstream of the Interstate 79 Bridge Crossing to the Peach Street Bridge Crossing.

Photo 46 – Channel Alteration, Downstream Peach Street Bridge Crossing

Photo 47 – Channel Modification/No buffer (12UNT)

Photo 48 – Pipe Outfall, Downstream Peach Street Bridge Crossing

Photo 49 – Inadequate Buffer, Downstream Peach Street Bridge Crossing

Photo 50 – Pipe Outfall, Downstream Peach Street Bridge Crossing

Photo 51 Erosion Site, Downstream Peach Street Bridge Crossing

Photo 52 Erosion site 9UNT

Photo 53 – Channel Alteration, Downstream Peach Street Bridge Crossing

Photo 54 – Fill Material, Downstream Peach Street Bridge Crossing

Photo 55 – Channel Alteration, Downstream Peach Street Bridge Crossing

Photo 56 – Erosion Site, Downstream Peach Street Bridge Crossing

Photo 57 – Erosion Site, Downstream Peach Street Bridge Crossing

Photo 58 – Pipe Outfall, Downstream Peach Street Bridge Crossing

Photo 59 – Pipe Outfall, Downstream Peach Street Bridge Crossing

Photo 60 – Fill, Downstream Peach Street Bridge Crossing

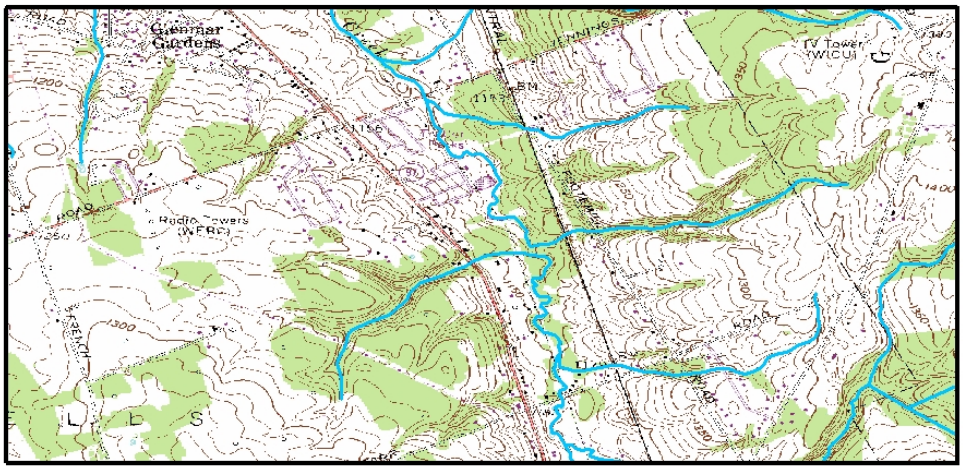
Photo 61 – Channel Alteration, Upstream Interstate 79 Bridge Crossing

Photo 62 – Pipe Outfall, Interstate 79 Bridge Crossing

Photo 63 – Inadequate Buffer / Erosion Site, Downstream Interstate 79 Bridge Crossing

Photo 64 - Obstructions to Fish Passage (15UNT).

Walnut Creek Watershed



The following depicts the fifth stream section surveyed as part of this assessment. The section includes the Peach Street Bridge Crossing to the headwaters area.

Photo 65 – Erosion Site / ATV Crossing

Photo 66 – Erosion Site / ATV Crossing

Photo 67 - Loss of Riparian Habitat / Stream Channelization (12UNT)

Photo 68 – Unusual Condition – iron staining within Walnut Creek tributary (12UNT)

Photo 69 Erosion site at 13WC

Photo 70 – Fill / Debris

Photo 71 – Channel Alteration

Photo 72 - Channel Alteration

Photo 73 – Inadequate Buffer / Erosion Site

Photo 74 – Pipe Outfall

Photo 75 – Pipe Outfall

Photo 76 – Pipe Outfall

Photo 77 – Exposed Pipe

Photo 78 – Exposed Pipe / Channel Alteration

Photo 79 – Channel Alteration / Inadequate Buffer

Photo 80 – Channel Alteration / Inadequate Buffer