Stream Restoration Outline (See Sheet 2 for Detailed Descriptions of Work)

A. Tributary 111

1. Area 1 & 2 (740 LF)
   Station 1=+33.47'- 20+17.21'
   a. Work between Area 1 and Area 2 to be connected to provide stable transition.
   b. Large head-cuts that have formed in the downstream of extent of Area 1 will dictate the elevations of any work within the channel.

2. Area 3 (445 LF)
   Station 20+27'- 36+00.21'
   a. Stabilize Core Crossing
   b. Remove trash/debris between Area 2 and Area 3.
   c. Failing springhouse to be removed and stable transition provided to its connection to the tributary. Existing conditions are hazardous.

B. Tributary 110

1. Areas 4 & 5 (240 LF)
   Station 10+23.52'- 8+86.60'
   a. Stabilize/abandon ford crossings of tributary.
   c. Remove trash/debris between Area 2 and Area 3.
   d. Large head-cuts that have formed in the downstream of extent of Area 1 will dictate the elevations of any work within the channel.

2. Area 6 (70 LF)
   Station 3+27.08'- 2+56.21'
   a. Stabilize/abandon ford crossings of tributary.
   b. Remove trash and debris, including a collapsed shelter/trailer home.

C. All tributaries

1. Remove all abandoned stream monitoring equipment and batteries.
Work between Areas 1 and 2 will occur between stations 33+35.47' and 26+17.21', approximately 740 linear feet. The channel is currently flattened out at Area 3 and has transitioned into a wetland area. Channelization begins again at station 33+31.75'. Downstream, at Area 2, the stream banks are eroded and headcutting is occurring. The stream between Areas 1 and 2 will be reconstructed to form a stable transition. A cow crossing at Area 3, located between stations 25+27.36 and 24+53.21, has resulted in bank erosion in need of stabilization. Based on velocities, the placement of rip-rap on Natural Fiber Rolls planted with native, wetland tolerant species, along the stream bank in these areas will help stabilize the channel and prevent further erosion. An abandoned riparian buffer in this location will be addressed. As vegetation cover becomes established, the stability of the banks will become increasingly stabilized and protected. Trash and debris is to be removed at Station 24+79.72'. An existing uprooted tree and pushover at station 23+09.32' is hazardous and will be removed. Abandoned stream monitoring equipment that is present at Area 3 will be removed. See Sheet 3 - Existing Conditions Photos for documentation of the existing stream conditions described above for these areas. See Sheet 4 - Waterway Construction Details for potential stream restoration techniques to consider during final design and engineering.

Areas 4 and 5

Work in Areas 4 and 5 will occur between stations 10+23.52' and 8+86.60', approximately 140 linear feet. The stream channel within these Areas is severely eroded and headcutting, with a significant drop-off occurring at station 9+83.25' that leads to another step drop-off at station 8+30.02'. Work between Areas 4 and 5 will need to connect in order to stabilize the channel. Due to significant headcutting, step pools are proposed to raise the elevation to reconnect the stream bed. The construction of step pools will provide a gradual elevation change and will disperse flow/reduce downstream velocity, and encourage sediment deposition to improve downstream conditions over time. Random boulder placement and/or cross vanes can also be used in areas of higher stream velocity (above 5 ft/s). Trash and debris will be removed within the headwater wetland and along the stream reach in these areas. See Sheet 3 - Existing Conditions Photos for photo documentation of the existing stream conditions described above for these areas. See Sheet 4 - Waterway Construction Details for potential stream restoration techniques to consider during final design and engineering.

Areas 6 and 7

Ford crossings at Areas 6 and 7 have resulted in the stream flow to dam up and destabilize and widen the channel. Proposed uplift will occur between stations 3+27.08' and 2+56.21' at Area 6, approximately 30 linear feet, and stations 20+37.61-19+77.61' at Area 7, approximately 60 linear feet, and will include removing the fords and re-establishing a stream channel. Random boulder placement and/or cross vanes in these areas can be used to reduce velocities prior to the tributaries connection to Ten Mile Creek mainstem. Downstream from Area 6 at station 0+56.73', the hand removal of tires dumped within and along the stream channel is also proposed. An abandoned structure/trailer at Area 7 is located at station 19+76.70' will be removed. See Sheet 3 - Existing Conditions Photos for photo documentation of the existing stream conditions described above for these areas. See Sheet 4 - Waterway Construction Details for potential stream restoration techniques to consider during final design and engineering.

Areas 8

Work at Area 8 will occur between stations 36+92.89' - 36+52.69', approximately 70 linear feet, includes the removal and stabilization of a historic ford crossing. Random boulder placement and/or cross vanes can be placed within the re-established channel to help reduce water velocities. See Sheet 3 - Existing Conditions Photos for photo documentation of the existing stream conditions described above for these areas. See Sheet 4 - Waterway Construction Details for potential stream restoration techniques to consider during final design and engineering.
Areas 1 and 2

Looking upstream at Area 1 from where channel begins to spread out into wetland area.

Looking upstream at Area 2. Numerous tire tracks observed throughout area.

Area 3

Abandoned monitoring equipment and batteries throughout site.

Pump house at Area 3.

Creekside at Area 3.

Erosion and headcutting at Area 4 downstream of steep drop-off.

Trash and debris around and within stream channel at Areas 4 and 5.

Erosion and headcutting at Area 5 downstream of steep drop-off.

Debris at Area 2.

Erosion occurring at low crossing area at Area 3.

Erosion occurring at low crossing at Area 3.

Abandoned monitoring equipment and batteries throughout site.

Areas 4 and 5

Leaves, erosion and headcutting formed a steep drop-off at Area 6.

Erosion and headcutting at Area 6 downstream of steep drop-off.

Trash and debris around and within stream channel at Areas 4 and 5.

Erosion and headcutting occurring at Area 6, with debris within the stream channel.

Tires in and around stream channel downstream from Area 6.

Historic ford crossing at Area 7.

Historic crossing at Area 3.

Area 6

Historic ford crossing of stream is currently unstable and damming water flow.

Erosion and headcutting occurring at Area 6, with debris within the stream channel.

Tree in and around stream channel downstream from Area 6.

N/A

Area 7

Collapsed structure and other trash/debris at Area 7.

Historic ford crossing at Area 7.

Historic ford crossing at Area 3.

Undercutting of the bank at Area 8.

Area 8

Historic ford crossing of stream that damming water flow.

Undercutting of the bank at Area 8.

N/A
PRELIMINARY STREAM RESTORATION EXHIBIT WATERWAY CONSTRUCTION DETAILS

Note: Details provided for reference. Methods selected may change at final design/engineering.
TO:                     Maryland National-Capital Park and Planning Commission, Planning Staff

FROM:                   Rodgers Consulting, Inc.

SUBJECT:                Creekside at Cabin Branch – Noise Analysis

DATE:                   October 6, 2020

As noted in the 1983 Staff Noise Guidelines specific criteria is provided on pages 6-8, the residential noise level of 60 to 65 dBA is the outside residential noise guideline. Generally applied to rear outside spaces for residential homes. Creekside is zoned residential with residential development proposed. On page 8 there is reference to Map 2-1, with language that subsequent Master Plans may update the 1983 information.

The areas where these exterior guideline values would apply are shown on Map 2-1. This map should be used for general reference purposes only. Recommended exterior noise levels shown for specific areas in subsequent sector and master plans may differ from Map 2-1 due to updated, more detailed traffic information for existing and future.

The 1994 Clarksburg Master Plan, Roadway Noise Impact Areas (Figure 47, attached) established the 60 dBA and 65 dBA impact areas.

The Creekside residential development is west of Clarksburg Road (A-27), therefore outside the noise impact area established by the 1994 Master Plan and is below the basic residential noise dBA level. With no further noise study required.

In addition to the Master Plan the land plan mitigates noise for rear yards similar to the approvals for Cabin Branch east of MD Rte. 121. No specific noise studies were required for Cabin Branch based on the Master Plan finding. Cabin was approved with units facing the road. The residential unit, or building is the noise mitigation so that the rear yard is below the 65 dBA outside criteria. The interior noise level of 45 dBA is mitigated by building materials to meet the standard at building permit. As the Cabin Branch homes are close to MD Rte. 121, the Creekside homes are a minimum of 140’ or farther from the road, with grade changes and landscaping. The homes face MD Rte. 121, with the rear outdoor spaces behind the buildings.

Respectfully,

Gary F. Unterberg, RLA, LEED AP BD+C
Senior Vice President
NOTE: At the Master Plan mapping scale, it is impossible to pinpoint accurate noise contours that take into account topographic features that muffle noise. Therefore, the noise contours show the worst case scenario, which will likely be modified at the subdivision stage to allow development closer to roads in most locations.