

Watershed monitored with SL137 (UNT Cobbs Creek)

How did we get where we are today?

Enviro-DIY Monthly Meeting

November 19, 2020



What did our landscape used to look like?

- 1800s
- 1940s, 1950s, 1960s and 1970s
- 1980s when the need to manage stormwater was recognized
- Where are we today?

Nearby Tributaries









Case Study











<u>1887</u>

- Mostly large farms
- Few patches of Forest
- Roads along the edges of the Farms
- Lots of streams





<u>1887</u>

- Nine large landowners
- One patch of Forest
- Two streams
- Four springs
- Impervious
 - o Six roads
 - o Five farmsteads





<u>1887</u>

• Road system Today





<u>2020</u>

- More than 1,700 homes
- Impervious surfaces
- Streams are gone from the landscape!















Where the tributary first sees the light of day



1953 Development





1953 Development Today







Typical Urban lots - 52' by 135' or about 7,000 SF of land each







Two 1940s two-story brick houses = 2,875 SF A road = 1,850 SF A sidewalk = 650 SF Driveway, walks, decks, and parking = 2,400 SF

7,775 SF, = <u>56% impervious</u>



DARBY CREEK VALLEY ASSOCIATION













Base-Flow

Small Storm Flow

Mounted a Camera in June 2020





July 6, 2020





July 10, 2020





August 4, 2020



8.31" in 7 hrs. Most fell in three short bursts at a rate of 4"/hr.







What's Included

Rechargeable battery





Arlo Go camera with Arlo mobile SIM card

Power adapter







Mount



DARBY CREEK VALLEY ASSOCIATION

All-in \$562.95 Plus \$5.28/mo for cell service

\$0.78

\$13.75

\$20.90

\$1.25

\$22.15

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OPPORTUNITIES

- Potential for 1,000 + rain gardens
- 3 Large pieces of public land remain
- Underground storage/Detention opportunities

RECURRING FLOODING IN NEIGHBORHOOD NO FEDERAL FLOOD INSURANCE AVAILABLE

- About 15 houses affected Numerous automobiles lost
- 1 house purchased and razed
- 2 houses pending
- Municipal engineer's solution add a new 72" pipe and move the flooding downstream





Ongoing Work (DCVA received a Growing Greener Grant)

- Installing 8 temperature button loggers
- Installing 3 HOBO water depth pressure transducers
- Creating mathematical model
- Calibrating model to measurements
- Installing 50 rain gardens in 2021



THANK YOU

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