Salon Task Force

The Soils of Salona

Dranesville Supervisor's Office
August 28, 2013

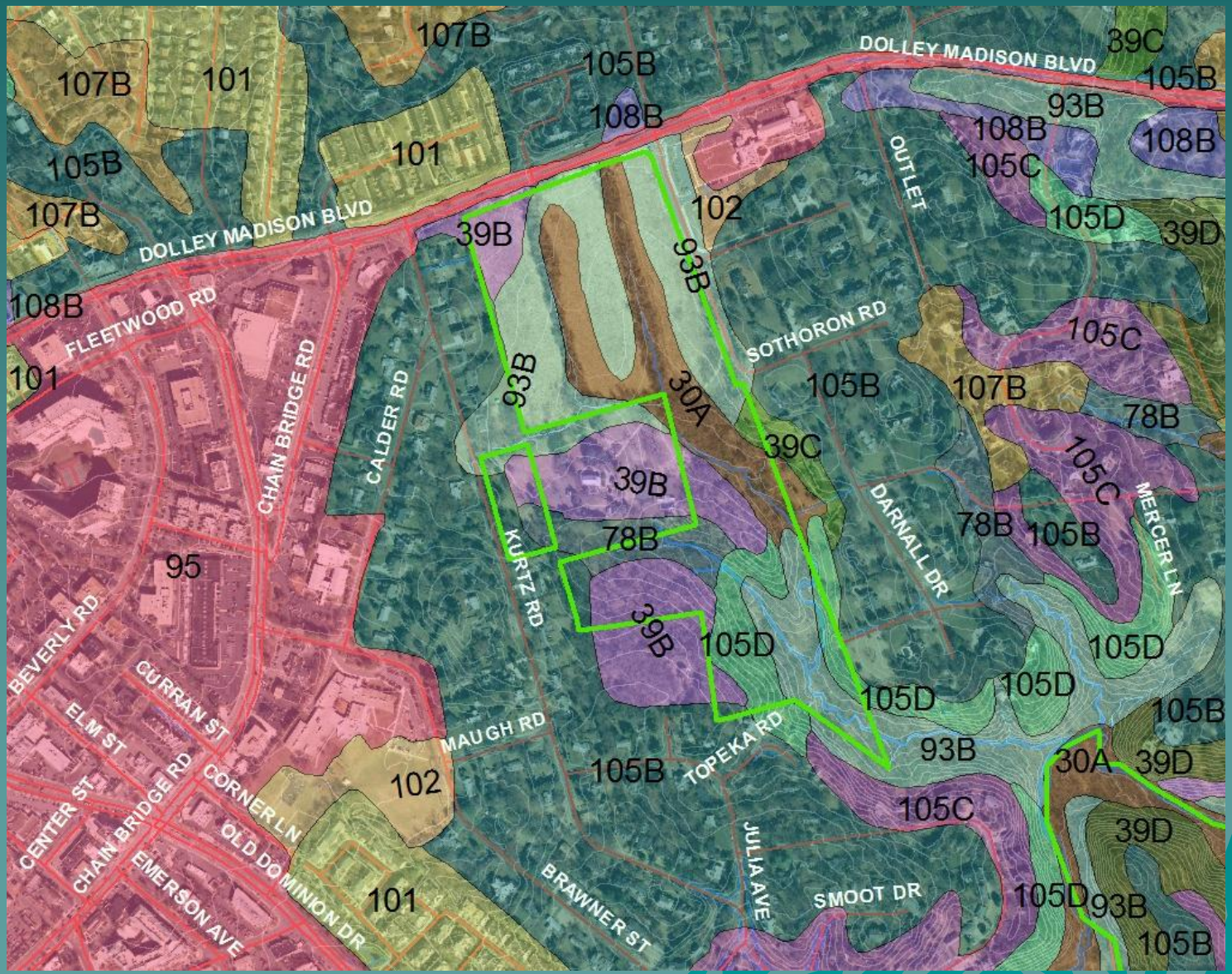
General Characteristics

- Five soil forming factors: CLORPT
  - Cl=climate
  - O=organisms
  - R=relief
  - P=parent material
  - T=time

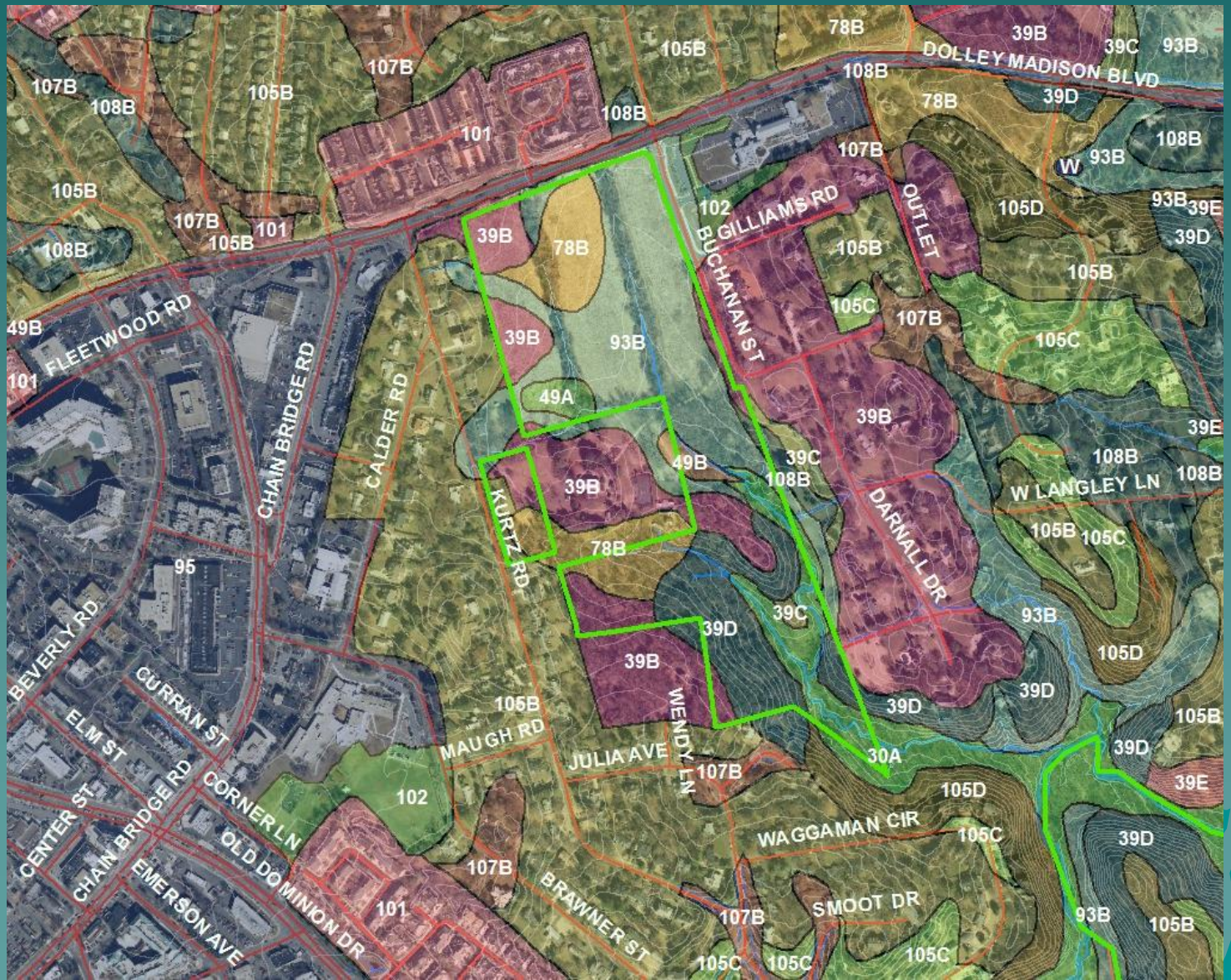
Relief and Parent Material

- Parent Material: Micaceous schist bedrock covers entire area
  - Silts and clays in the top 3 or so feet
  - Sandier material below
  - Solid bedrock at 5 or more feet
- Relief
  - Soils at higher elevations are drier
  - Soils at lower elevations are wetter
    - **Almost all variations in Salona soil are due to this simple pattern**

Salona Soils Map

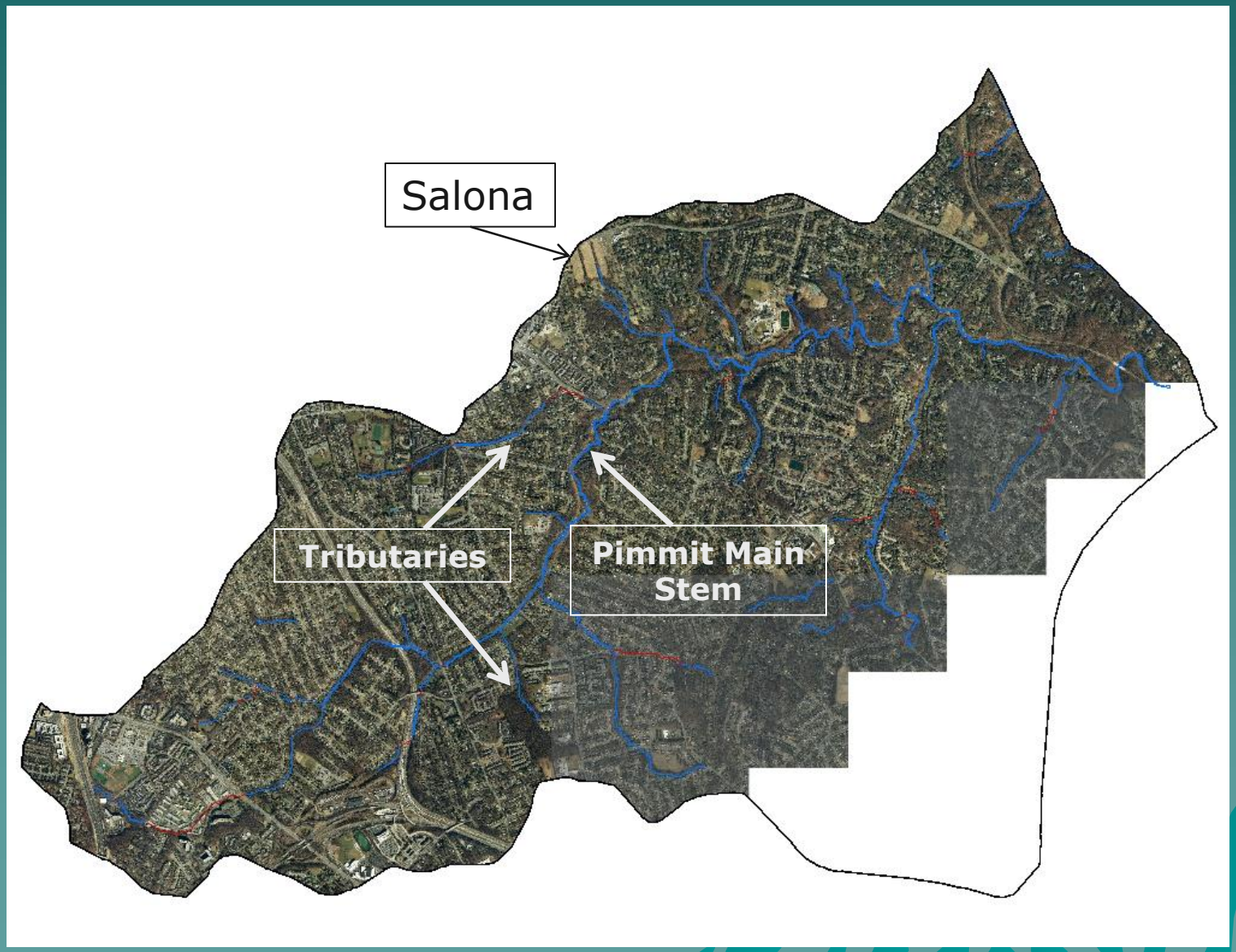


Salona Soils Map



Salona and Drainage

Watershed Macro View



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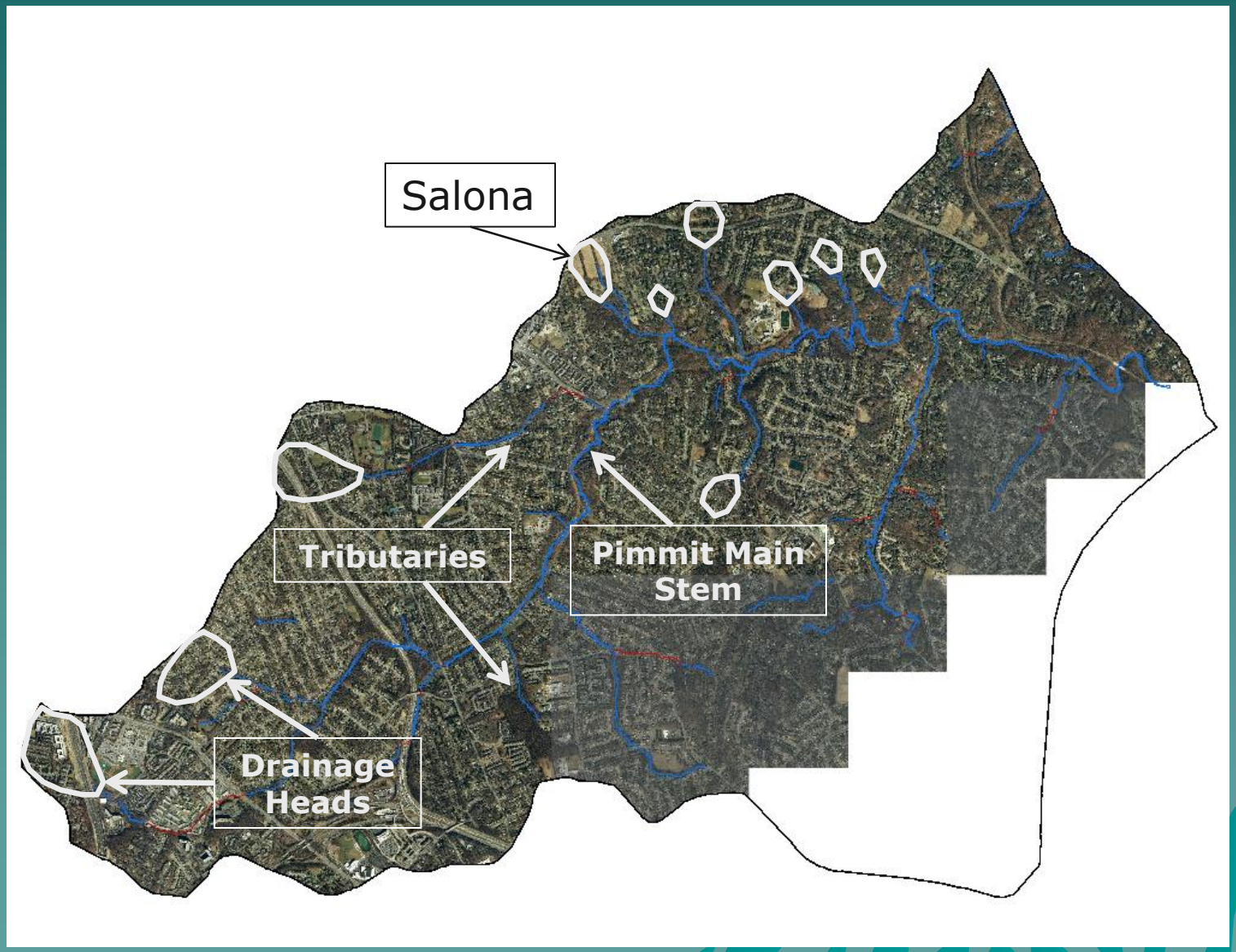

The Salona Drainage Head

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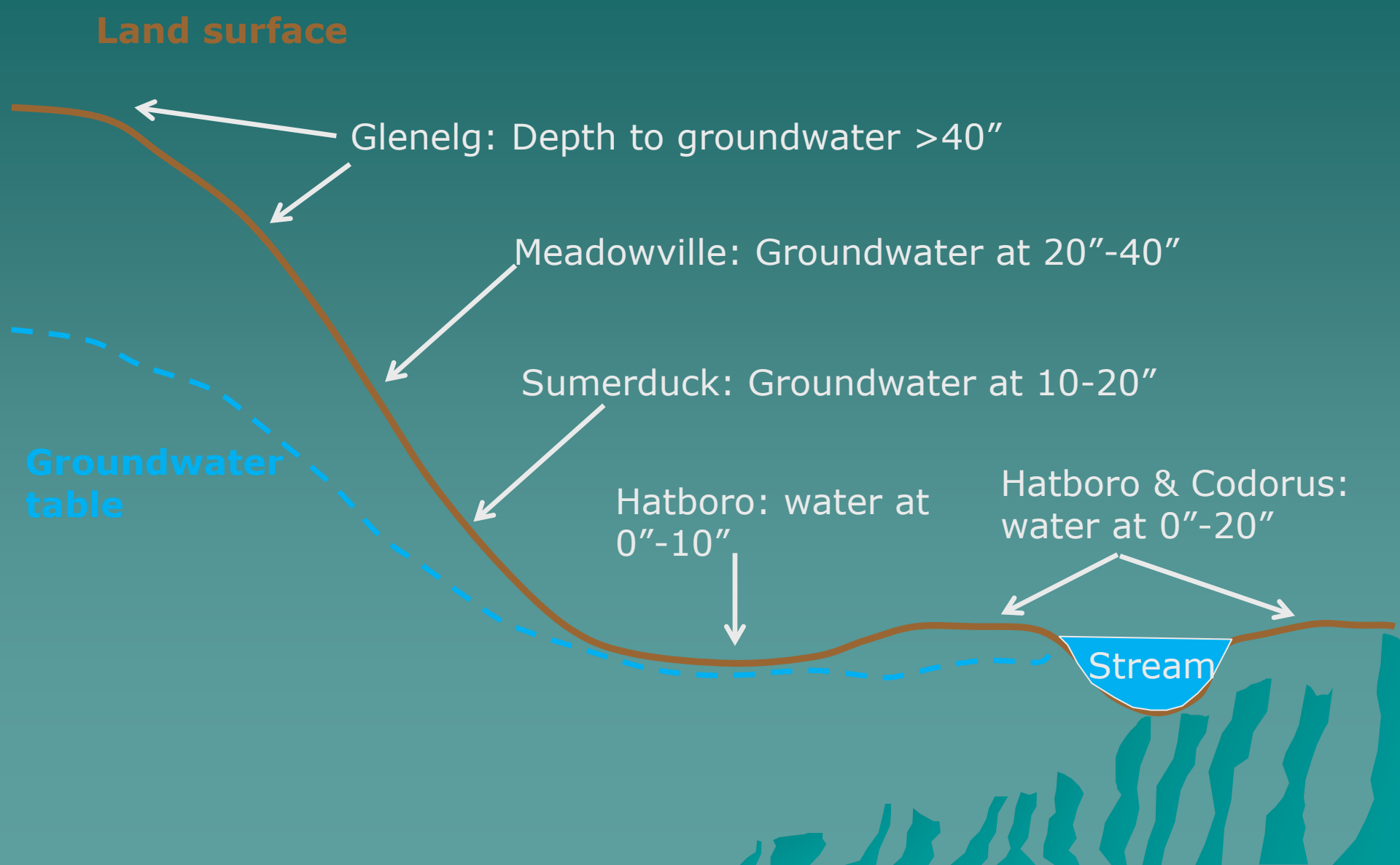
Soils in the Salona Drainage Head

- Soil Survey legend: Soil names are numeric; slope classes are Alphabetical
  - 39B: 39=Glenelg silt loam
    B=2-7% slope
- Slope Classes
  - A: 0-2%
  - B: 2-7%
  - C: 7-15%
  - D: 15-25%

Soils in the Salona Drainage Head

- 39: Glenelg silt loam
  - Dry upland soil
- 78: Meadowville loam
  - Somewhat wet, around intermittent streams
- 93: Sumerduck loam
  - Wetter, around intermittent and perennial stream
- 49: Hatboro silt loam
  - Very wet, low spots and along perennial streams
- 30: Hatboro and Codorus soils
  - Very wet, in perennial floodplain

The Soil Catena



The Soil Catena

Soil Suitability

- The limiting factor for most potential uses is wetness
- Ball fields
  - Need dry, flat surface
  - Flat, but wet
    - May require drainage or fill
  - Too wet
  - Protected streams

Soil Suitability

- Parking and Visitor Center
  - Some of the same needs as ball fields
  - But best soils aren't near roadway
  - Is it better to build on wetter soils with less site disturbance or dry soils w/ more disturbance?
  - Dry soils also allow for pervious paving

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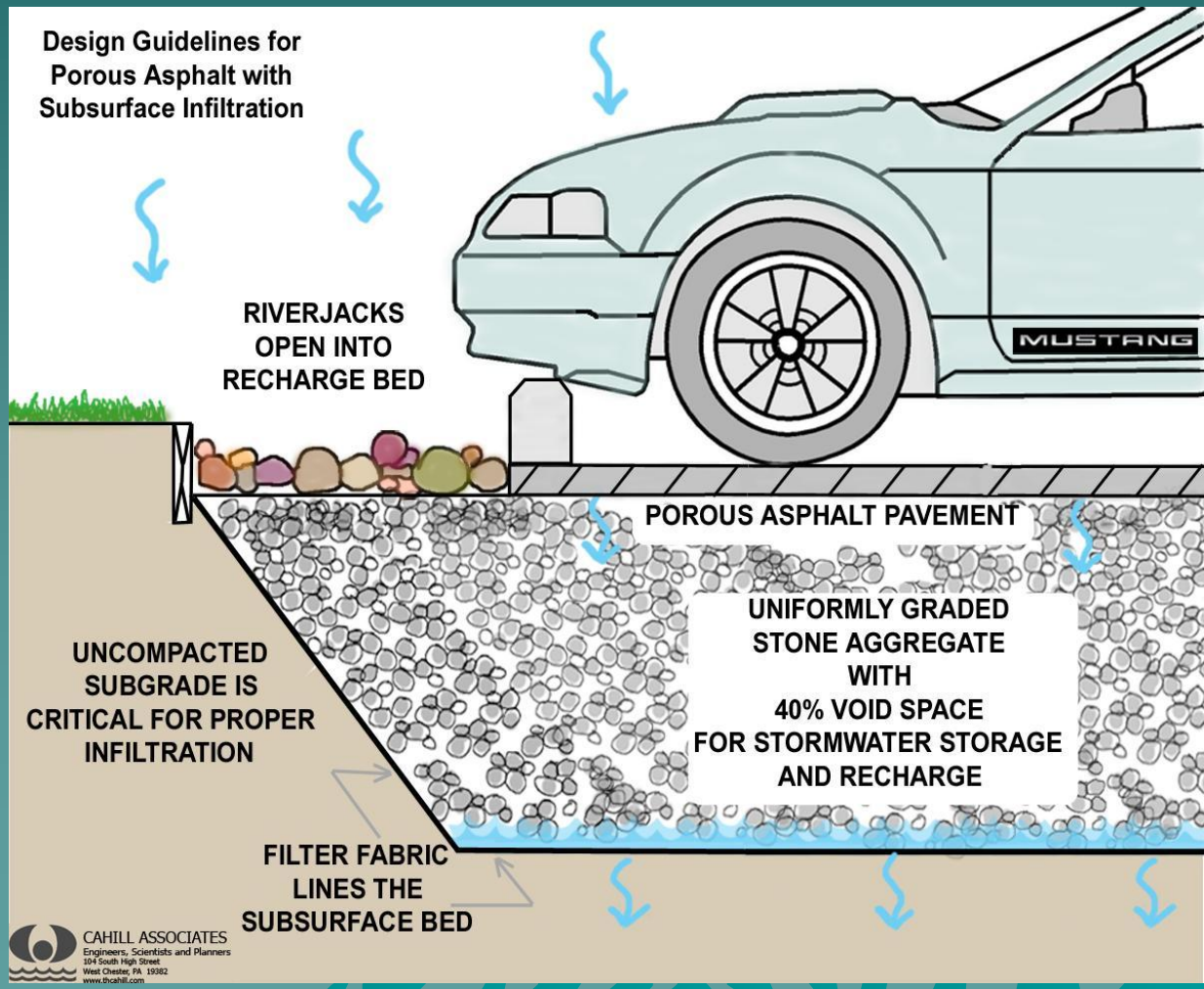

Soil Suitability

- Grass
  - Suitable almost anywhere except for wettest soils
  - Vegetation changes restricted in RPAs
  - Irrigation may not be necessary except on dryest soils

Soil Suitability

- Trails and farming: similar to grass suitability
  - Best to stay out of very wet soils
  - RPA restrictions still apply

Soil Changes

- Soil is a porous medium
  - Most rainfall on natural soil is soaked up by the soil
  - As it passes through the soil, water is cooled and filtered
  - Groundwater flows laterally and recharges the streams and rivers

Soil Changes

- Development makes the soil less porous
  - Impervious surfaces
  - Soil compaction
    - Fill too
- Less porosity= more runoff
  - More runoff can create water quality problems downstream

Photos Courtesy of Charles Smith

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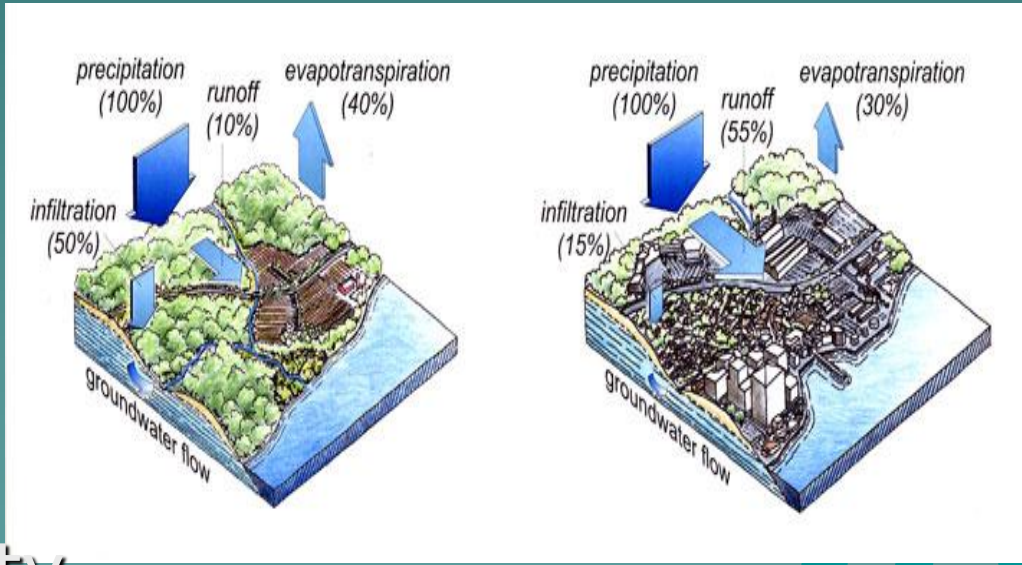

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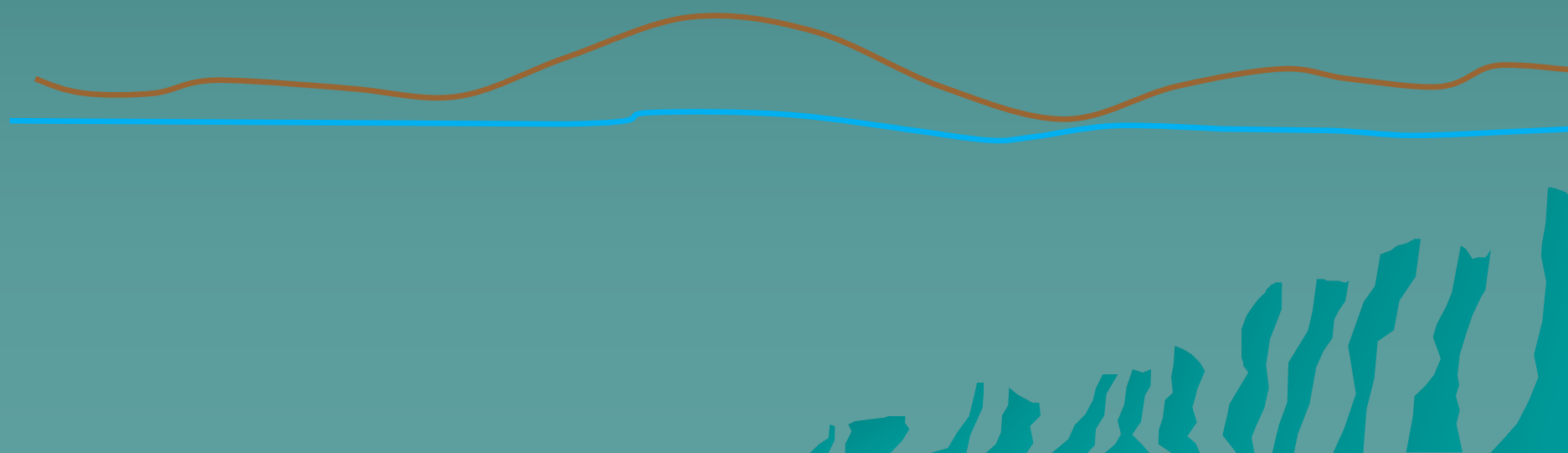
Soil Changes

- Reducing the groundwater table
  - Less rainwater infiltration due to increased compaction/imperviousness
  - Drainages around foundations



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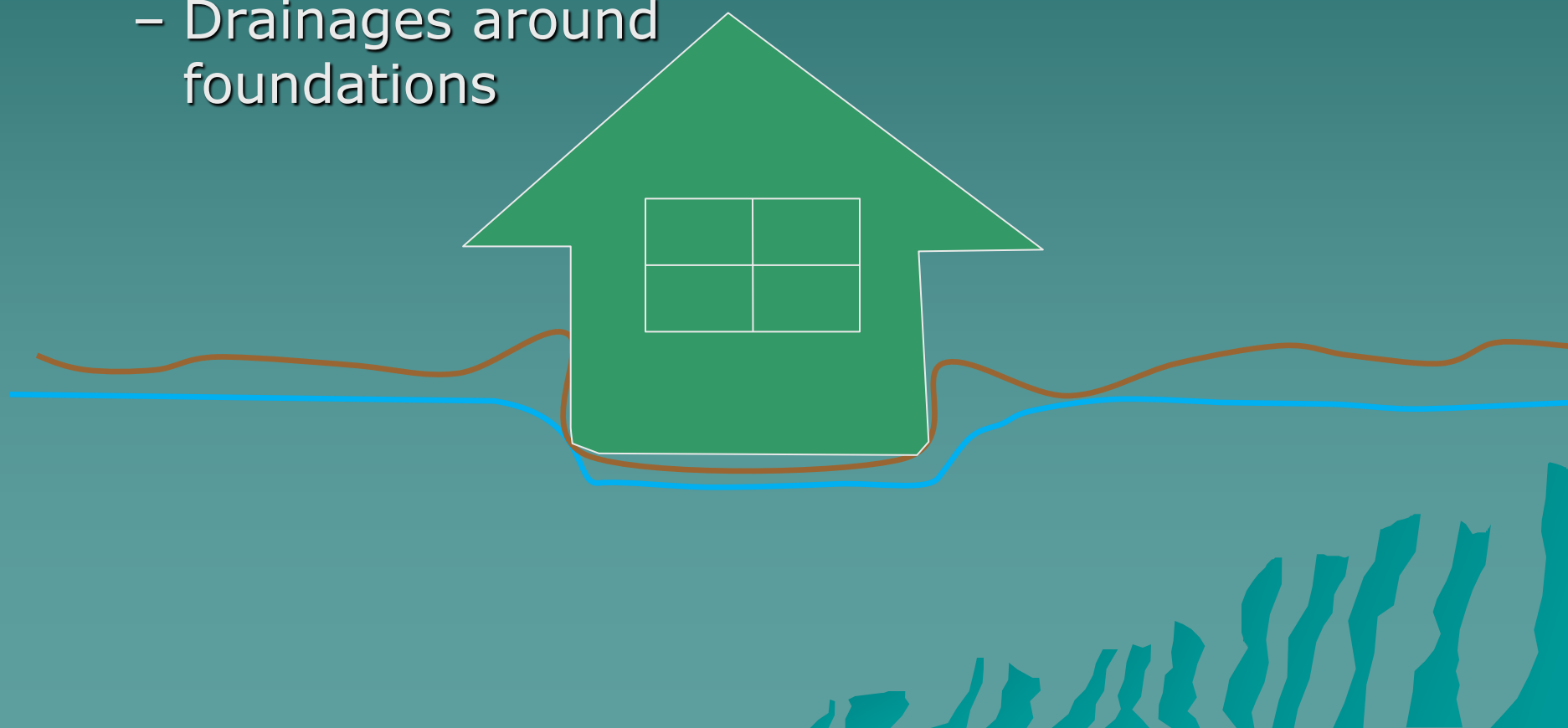

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Questions?

- Contact info:

Dan Schwartz
Northern VA Soil and Water Conservation District
703-324-1422
Dan.Schwartz@Fairfaxcounty.gov