

Stormwater Programs (VSMP) Local Government Perspectives, one year in.

VaCO Mtg 1-10-2016

Mike Flagg (Hanover County)



Stormwater...

Related Regulatory Mandates

- **Erosion & Sediment Control – Statewide**
- **Chesapeake Bay Preservation – Tidewater Localities**
- **Virginia Stormwater Management Program (VSMP)**
- **Construction General Permit – Statewide VSMP Implementation**
- **Municipal Separate Storm Sewer System (MS4) General Permit - Urbanized Areas**



Stormwater...

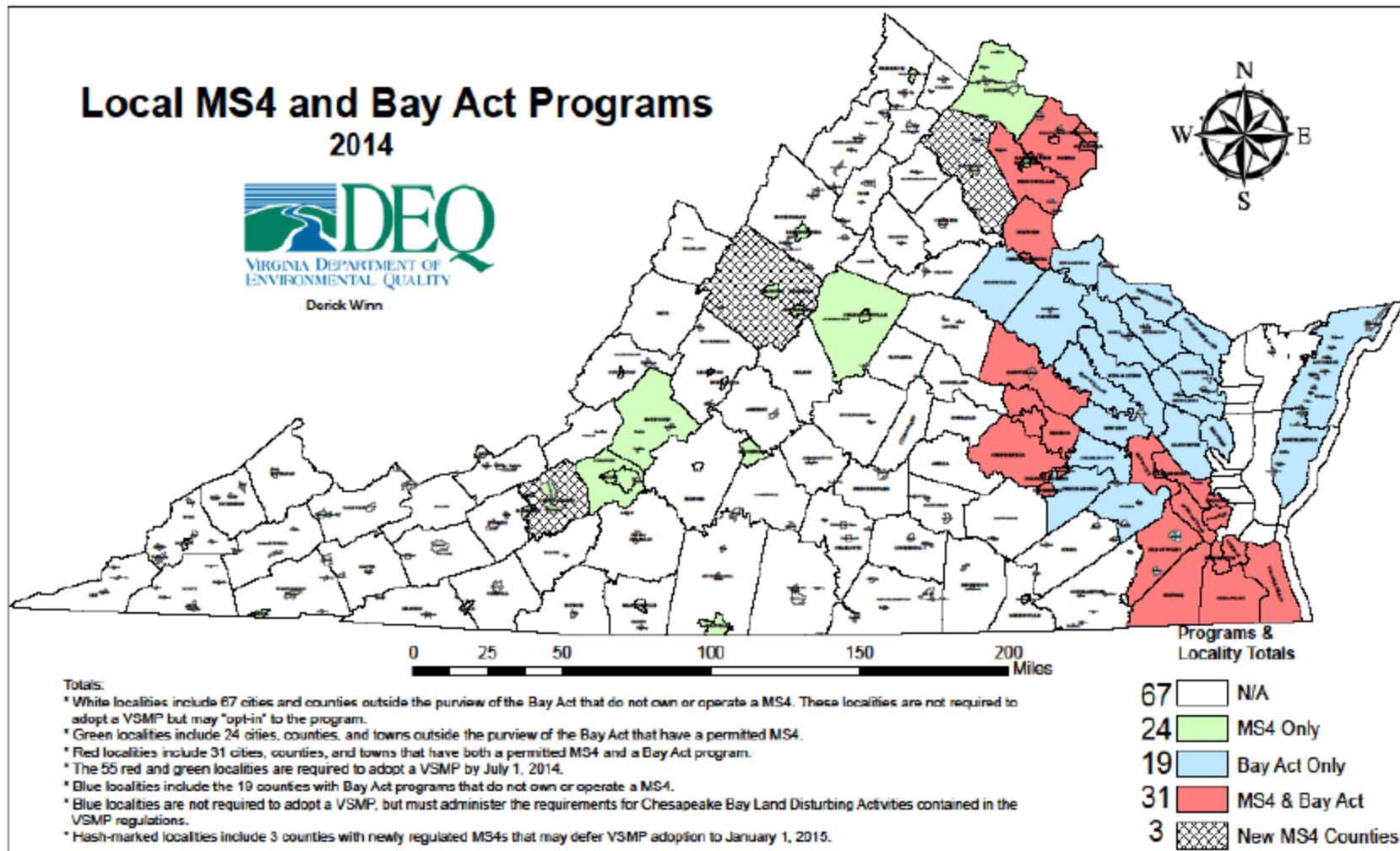
VSMP Programs – 1 Year in.

- **Administratively – About what we expected.**
 - Certifying staff, setting up revised inspection programs, issuing state permits through DEQ system.
 - Management of maintenance agreements, BMP ownership, certification and inspection (very complex and evolving)
 - DEQ has partnered well on plan review and inspections in our locality
- **Technical Criteria – Challenging**
 - Quality- density of BMPs, residential developments particularly challenging due to other conflicts, utilities, space, topography, development area and point of analysis, etc.
 - Quantity – Energy Balance is without regard to receiving channel, need to review channels for permissible velocity, point of analysis critical



HANOVER: PEOPLE, TRADITION & SPIRIT!

Stormwater Management What's Changing...



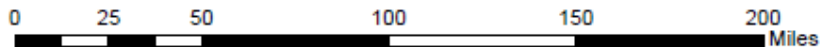
Stormwater Management What's Changing...

Local VSMP Authorities July 8, 2015



Town & City Authorities:

- 1 - Leesburg
- 2 - Herndon
- 3 - Vienna
- 4 - Falls Church
- 5 - Fairfax
- 6 - Warrenton
- 7 - Occoquan
- 8 - Dumfries
- 9 - Bridgewater
- 10 - Bowling Green
- 11 - Ashland
- 12 - Colonial Heights
- 13 - South Hill
- 14 - Vinton
- 15 - Roanoke
- 16 - Blacksburg
- 17 - Christiansburg
- 18 - Radford
- 19 - Pulaski
- 20 - Bluefield
- 21 - Abingdon



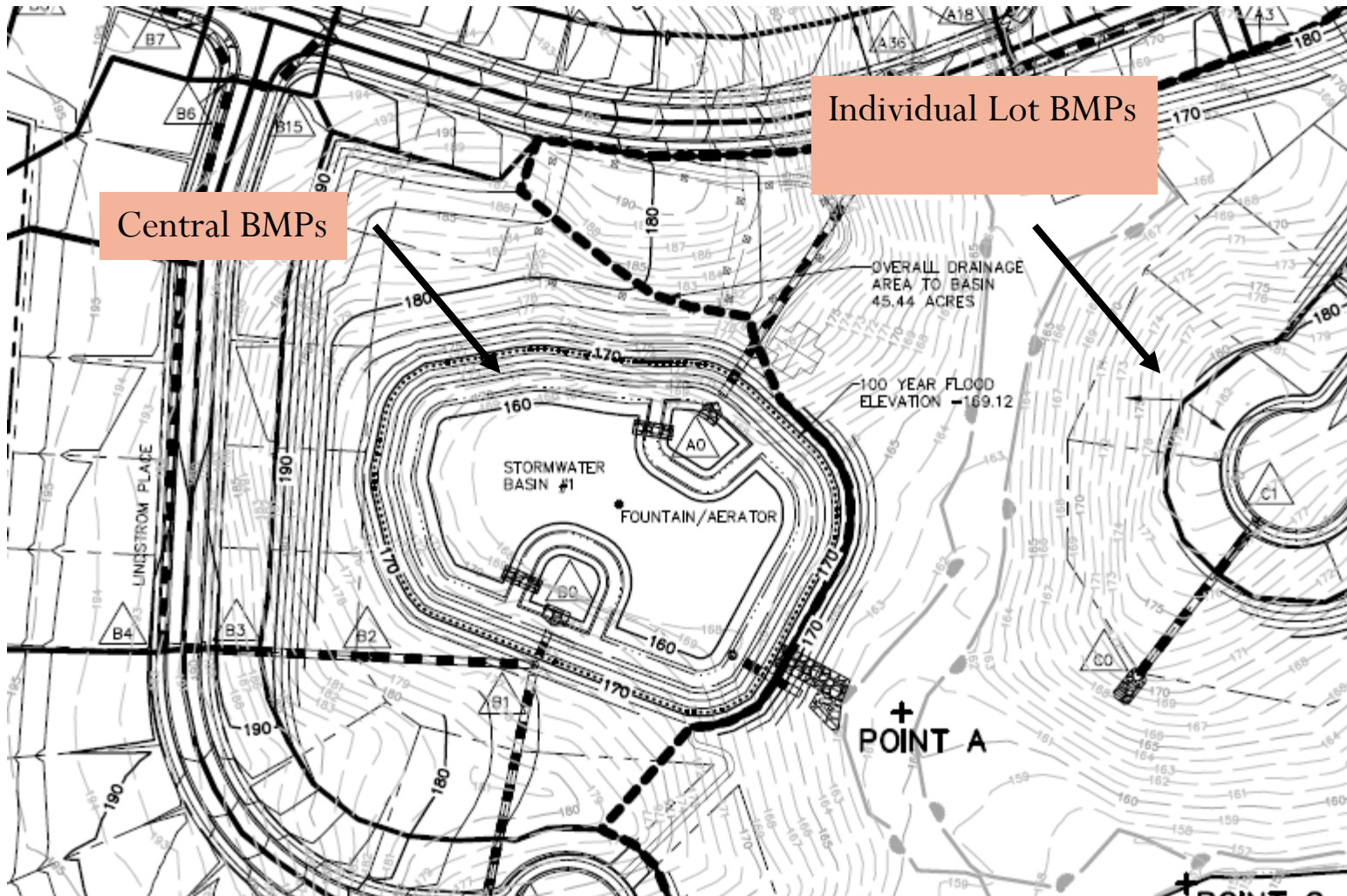
Note: Opt-out totals include counties and cities that did not adopt a local VSMP.

Local VSMP

- DEQ Regional Offices
- 54 Opt-out
- 95 Local Authorities



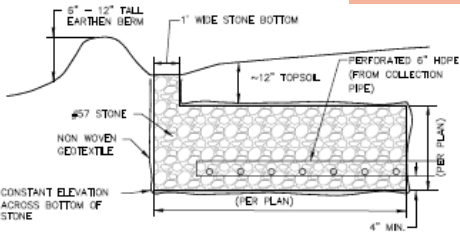
Subdivision Development some new complexities



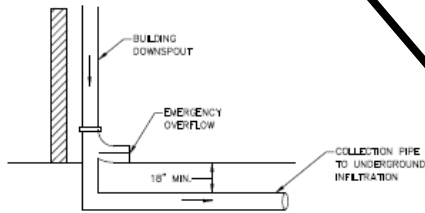
Subdivision Development

Individual Lot BMPs "complex"

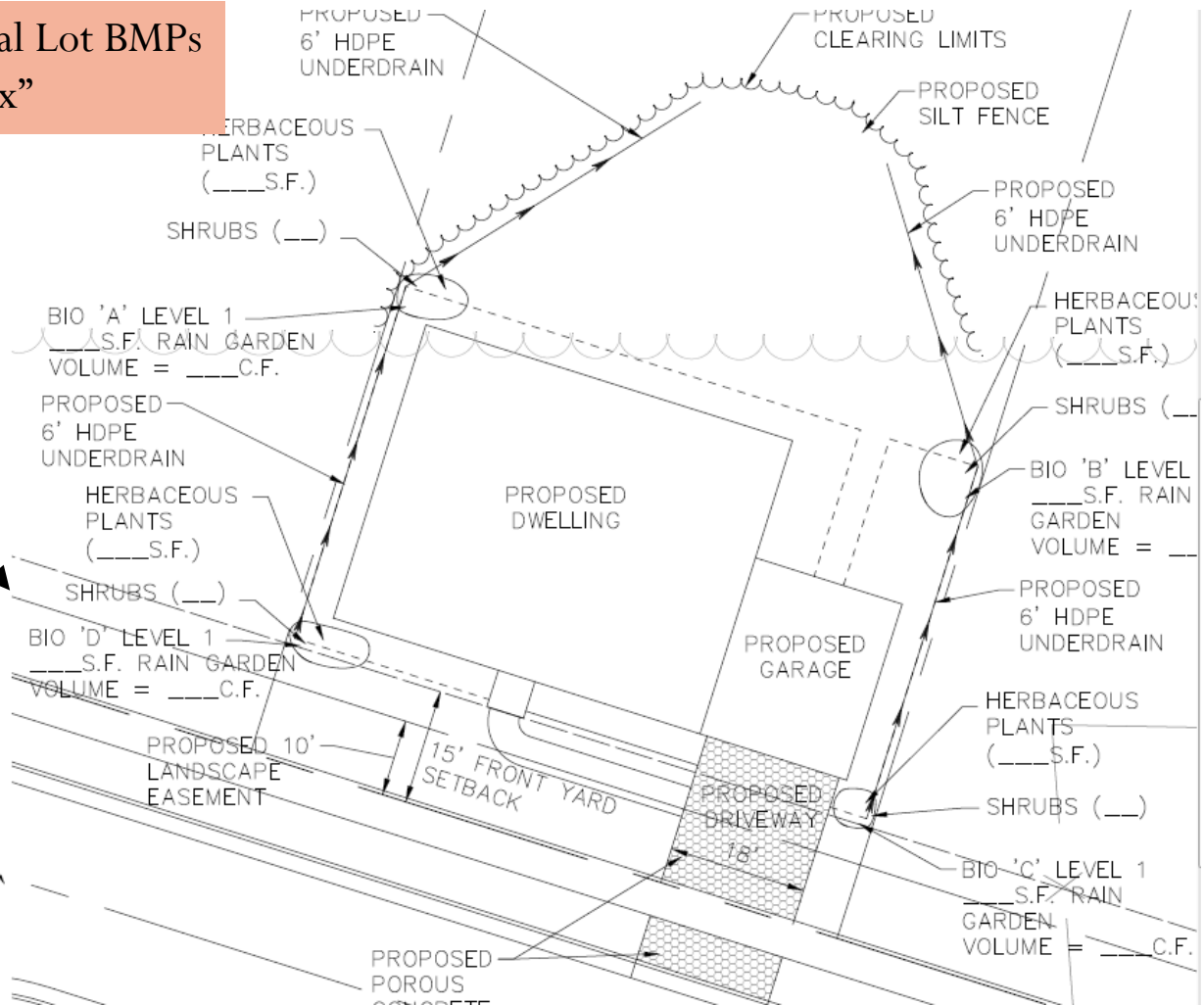
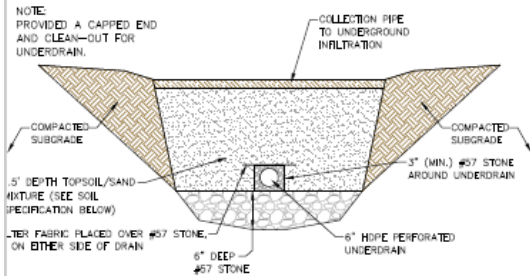
EROSION CONTROL NOTE
UPON REMOVAL OF ALL EROSION AND SEDIMENT CONTROL ITEMS, ALL TRAPPED/CONTAINED SEDIMENT SHALL BE REMOVED FROM LOT AND PROPERLY DISPOSED OF TO AN APPROVED LOCATION



UNDERGROUND INFILTRATION DETAIL
N.T.S.



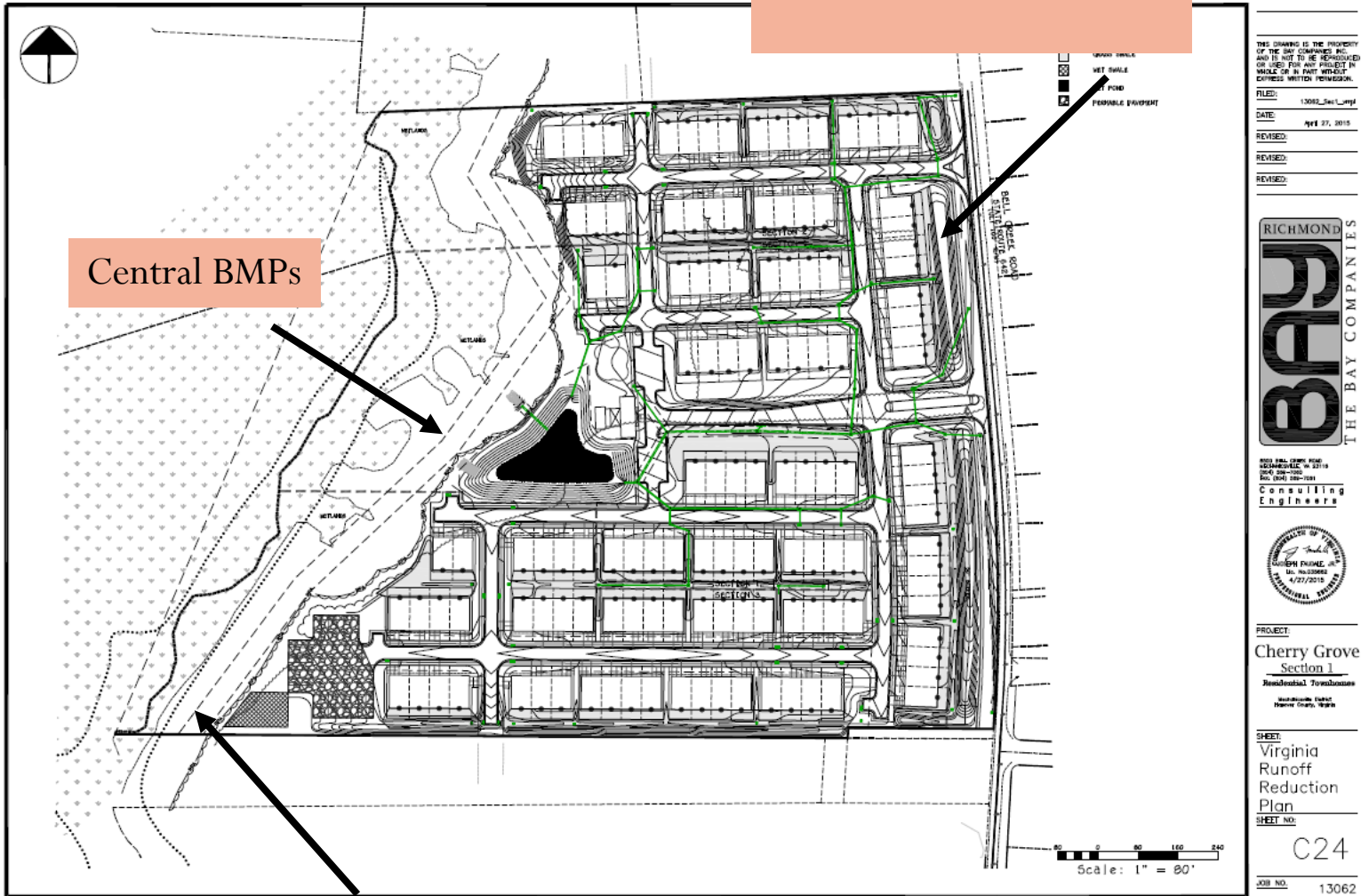
DOWNSPOUT CONNECTION DETAIL
N.T.S.



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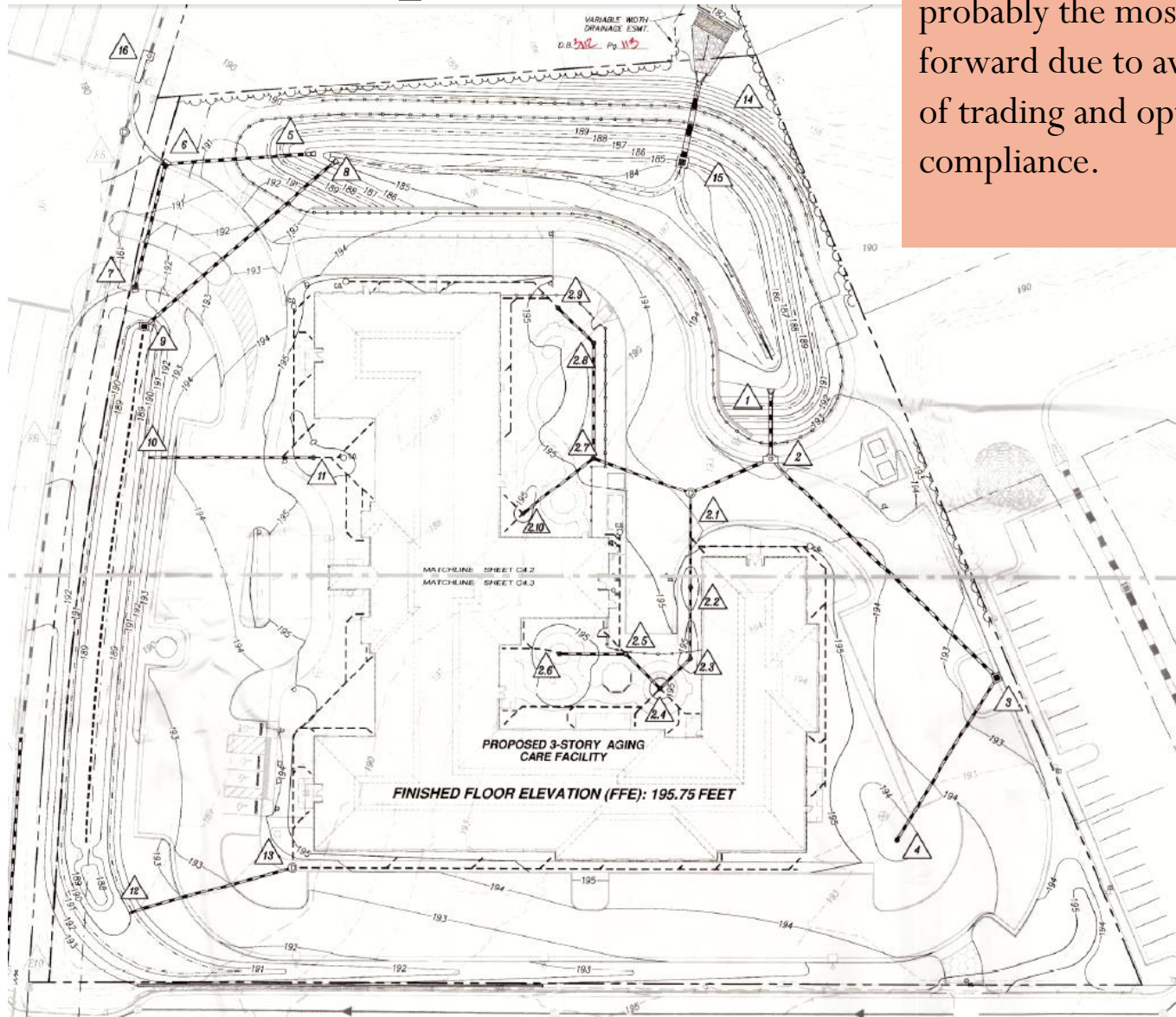
Town Homes

Individual Lot BMP even more complex due to limited space

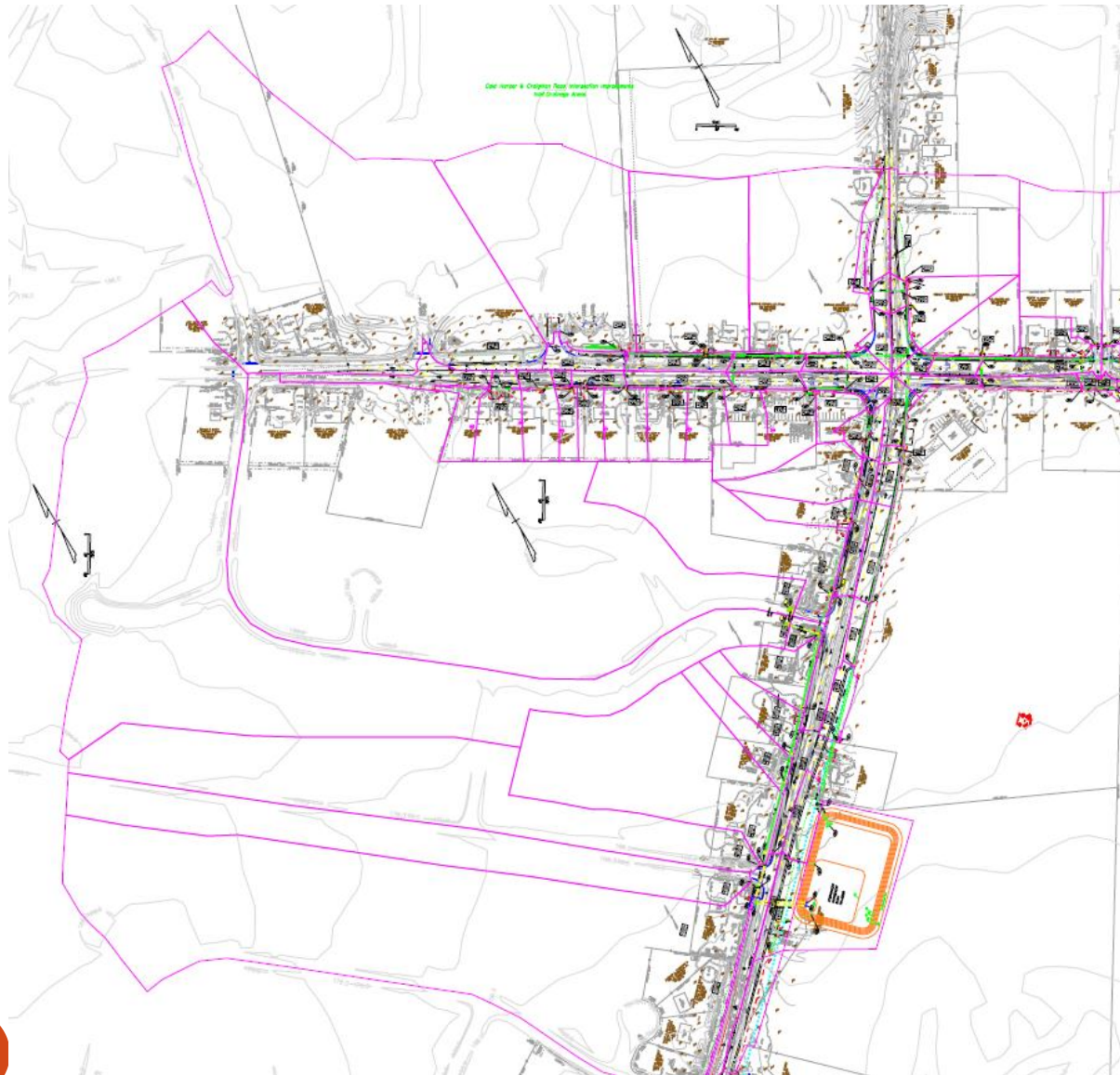


Site Development

Site developments are probably the most straightforward due to availability of trading and options for compliance.

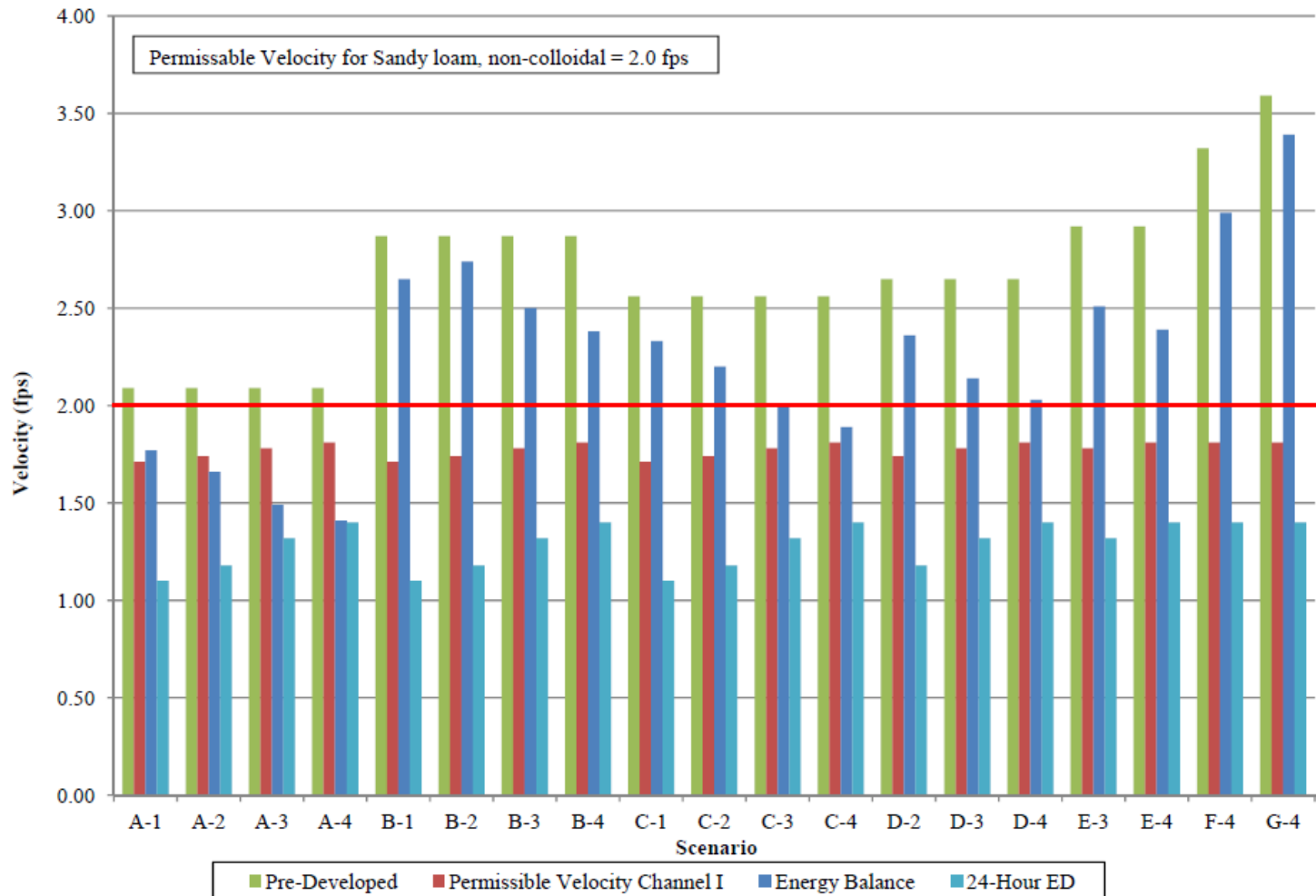


Road Development



Energy Balance (Caution!!)

Figure 5 Routed Stream Velocity Comparison – Receiving Stream I – 1-Year Storm



Conclusions and Challenges

- Design and management issues relating to centralized and decentralized (single lot) (how to present design details, BMP specification constraints, ownership, certification and acceptance, long term maintenance)
- Intensively developed sites and competing infrastructure needs. Lack of BMP alternatives for tight sights
- Classic storm sewer design for capacity can be counter to runoff reduction concepts water quality objectives
- Site characteristics and points of analysis have a large impact on resulting designs. (May also result in unforeseen water quality impacts not otherwise considered)
- Certification, acceptance, and long term maintenance may be very complex
- Energy balance may be over protective and under protective of stream channels based on an analysis of channel characteristics.



Contact Information & Questions

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