

Clarksburg Ten Mile Creek Sewer Study

Clarksburg/Ten-Mile Creek Citizens Advisory
Committee

March 25, 2015

Agenda

1. Ground Rules for Meetings
2. Confirm Approval of Meeting Summary – February 12, 2015
3. CAC Inquiries/Issues Concerning Clarksburg Ten-Mile Creek Area
4. Costs – Who Pays for What?
5. Introduction of new proposed alternatives 6 and 7 for Draft Sewer Study
6. Next Steps and Discussion of Next Tentative Meeting Date
7. Open Comments from Public
8. Adjournment

Ground Rules

Citizens Advisory Committee – Meeting Ground Rules

- Only CAC Members and official agency representatives are seated at tables and allowed to participate. All other please sit in the outer chairs.
 - CAC members can send a substitute if they are going to miss a meeting
- Comments/Questions from CAC Members and support staff during meeting. Members of the public will have an opportunity to comment near the end of the meeting
- Please be respectful of each others' opinions/comments. Membership of this CAC represent various and diverse points of views, goals, and perspectives.
- Reminder - WSSC proposed draft sewer infrastructure plan.
 - Plan will be provided to CAC for review and comment. WSSC will complete a final draft plan with documentation of CAC member input and comments in the plan.

Citizens Advisory Committee Approval of from February 12th Meeting Summary

CAC Comments – Sewer Constructability

Geotechnical Suitability of Site Soils for Gravity Sewer Installation

- Conducted review of available USGS maps.
- Geologic features observed in the study area are similar and consistent with adjacent developed areas where gravity sewers have already been installed.
- Overburden in the study generally ranges from 0-20 feet in the stream valleys to 20-50 feet in the developable areas.
- Likelihood of encountering bedrock can be minimized by minimizing sewer within buffer areas.
- We do not expect gravity sewer installation to present any particular construction challenges in the developable areas.

CAC Comments – Bifurcation

- Pursue sewer for Historic District independently from the rest of the sewer study area.
- Need to take a more holistic look to determine if such an approach is logical, economical, or efficient.

CAC Comments – Flooding of Wastewater Pumping Station

- Maryland Department of the Environment (MDE) Design Guidelines require wastewater pumping stations to be protected from 100-year flood and fully operational and accessible during a 25-year flood.
- Under WSSC Design Standards, wastewater pumping stations must be constructed outside of the 100-year flood plain.

CAC Comments – Independent Expertise

- Wide range and extensive expertise available at Montgomery County, M-NCP&PC (Montgomery County Planning Department) and WSSC.
- Other information available in literature and on the Internet.
- WSSC welcomes any specific recommendations or suggestions from the CAC.

Grinder Systems vs. Centralized Pumping

- **Grinder Pump/Low Pressure Systems - advantages:**
 - Can be constructed at street grade with proper depth of cover (not as dependent on gravity/elevation)
 - Smaller diameter mains required (1¼ -inch to 2 inches diameter PVC; WSSC minimum design standard for gravity sewer = 8-inch diameter PVC or ductile iron if in stream crossing)
 - Pressure sewer cheaper to install than gravity sewer
 - Can be more cost effective than centralized pumping station particularly for less than 50 units

Grinder Systems vs. Centralized Pumping

- **Grinder/Low Pressure Systems - disadvantages:**
 - In most cases, no redundant equipment (e.g. pumps and motors)
 - In most cases, no redundancy if power goes out
 - Subject to hydraulic and pressure limitations
 - Owned and maintained by homeowner
 - Monitoring and alarms can vary
 - Odors can be difficult to control
 - Operating pumps exceeding maximum number of pumps operating 'as designed' may cause operational and maintenance issues.

Grinder Systems vs. Centralized Pumping

- Centralized Pumping (Advantages):
 - Full equipment redundancy (e.g. pumps and motors)
 - Redundancy (backup power/generator) if power goes out
 - Owned, maintained and operated by WSSC
 - Fully monitored and alarmed “24/7” at nearest wastewater treatment plant and at WSSC Control Center in Laurel
 - Odor controls, etc., are addressed at the pump station
 - Generally more cost effective than grinder pump system for larger developments (e.g. more than 100 units)

Grinder Systems vs. Centralized Pumping

- Centralized Pumping (Disadvantages):
 - Expensive
 - Requires construction of building or underground pad with wet well, pumps, and controls
 - Adds some impervious area; requires stormwater control.

Costs – Who Pays for What?

- Capital Costs:
 - Wastewater Pumping Station and Force Main
 - Developer contributions
 - System Development Charge Fund (SDC)
 - No WSSC rate-supported funding
 - Local Public Sewers – Gravity or Low Pressure Sewers
 - Generally all developer funded
 - Property owners (for existing properties)
 - Some possible limited WSSC contributions
 - On-site property piping and plumbing including Grinder Pumps
 - Developer
 - Property owners (for existing properties)

Costs – Who Pays for What?

- **Operations and Maintenance Costs:**
 - Wastewater Pumping Station and Force Main
 - WSSC rate supported
 - Local Public Sewers – Gravity or Low Pressure Sewers
 - WSSC rate supported
 - On-site including Grinder Pumps
 - Individual homeowners

New Alternatives 6 and 7

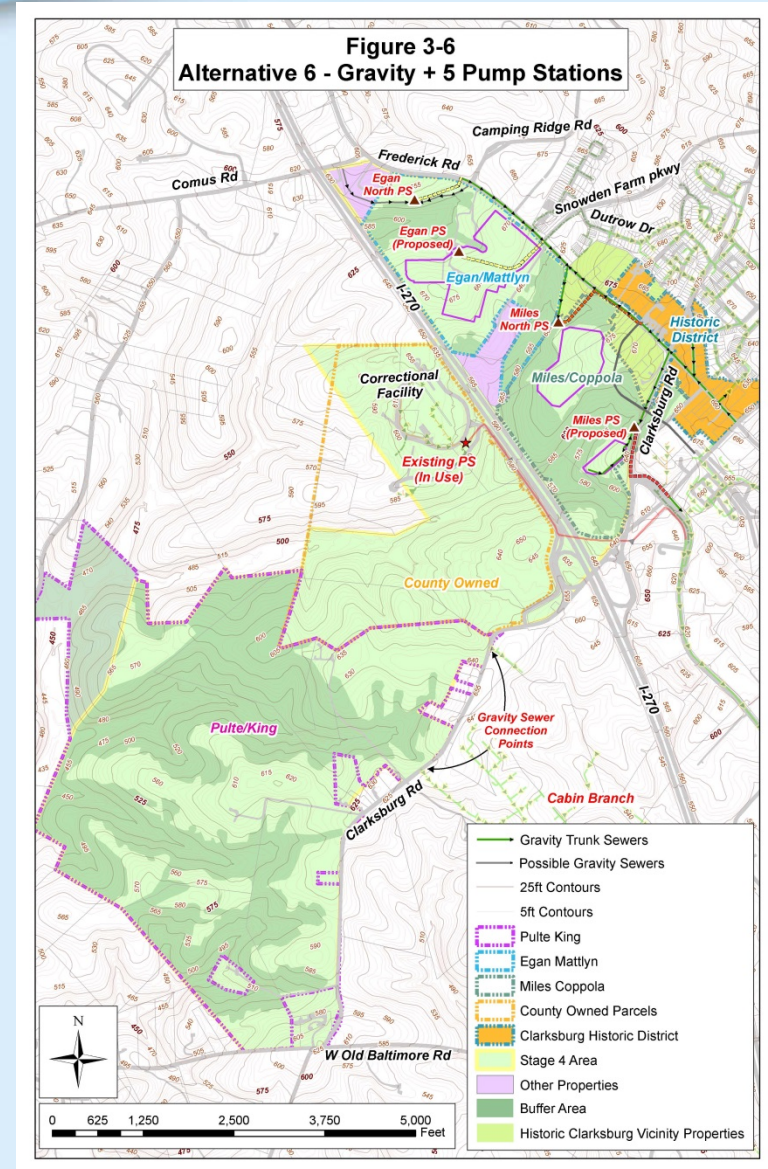
(for Egan and Miles Coppola properties)

No scenarios for Pulte property in Alternatives 6 and 7

- With elimination of Alternatives 1 and 2, there is no hydraulic connection/dependency between Pulte property and the other properties
- Pulte property is large with multiple developable areas; difficult to predict how the site will develop
- Pulte representatives have not provided any proposals regarding location or layout of development on their property at this point.
- Pulte sewer service and alignment will have to be determined through the normal site plan approval process (Montgomery County Planning Department, WSSC) typical for single property developments.
- Sewer service via gravity sewer, wastewater pump stations and/or grinder pump (low pressure) could all be considered.

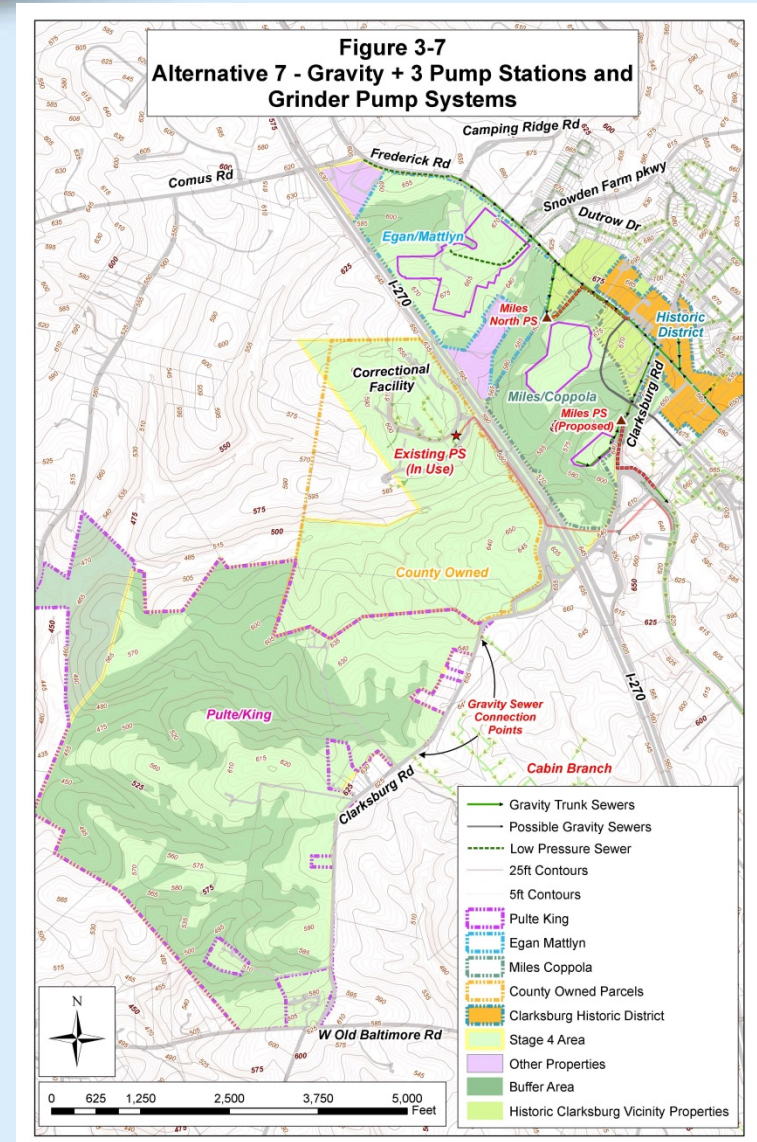
Conceptual Alternative 6

- Add new proposed Egan North PS
- Adds new proposed Egan pump station
- Adds new proposed Miles North pump station
- Retains proposed Miles pump station
- Pump station at Correctional facility remains operational
- Total Gravity Sewer Length – 8,930 feet
- Total Force Main Length – 4,900 feet
- Number of Pump Stations – 5
- New Tunnel Crossings under I-270 – None



Conceptual Alternative 7

- Grinder pump/low-pressure systems for Egan/Mattlyn
- Eliminates pump stations on Egan/Mattlyn property
- Retains new proposed Miles North pump station
- Retains proposed Miles pump station
- Pump station at Correctional facility remains operational
- Total Gravity Sewer Length – 8,930 feet
- Total Force Main Length – 2,850 feet
- Total Pressure Sewer Length – 2,600 feet
- Number of Pump Stations – 3
- New Tunnel Crossings under I-270 – None



Egan/Mattlyn Grinder Pump/Low-Pressure System

Feasibility dependent on:

1. Final site plan
2. WSSC Approval/Compliance with WSSC Grinder Pump Policy
 - a) Feasibility of other alternatives
 - b) Meeting WSSC Hydraulic Criteria
 - c) Meeting WSSC Odor Criteria
3. Developer plans

Alternatives Summary

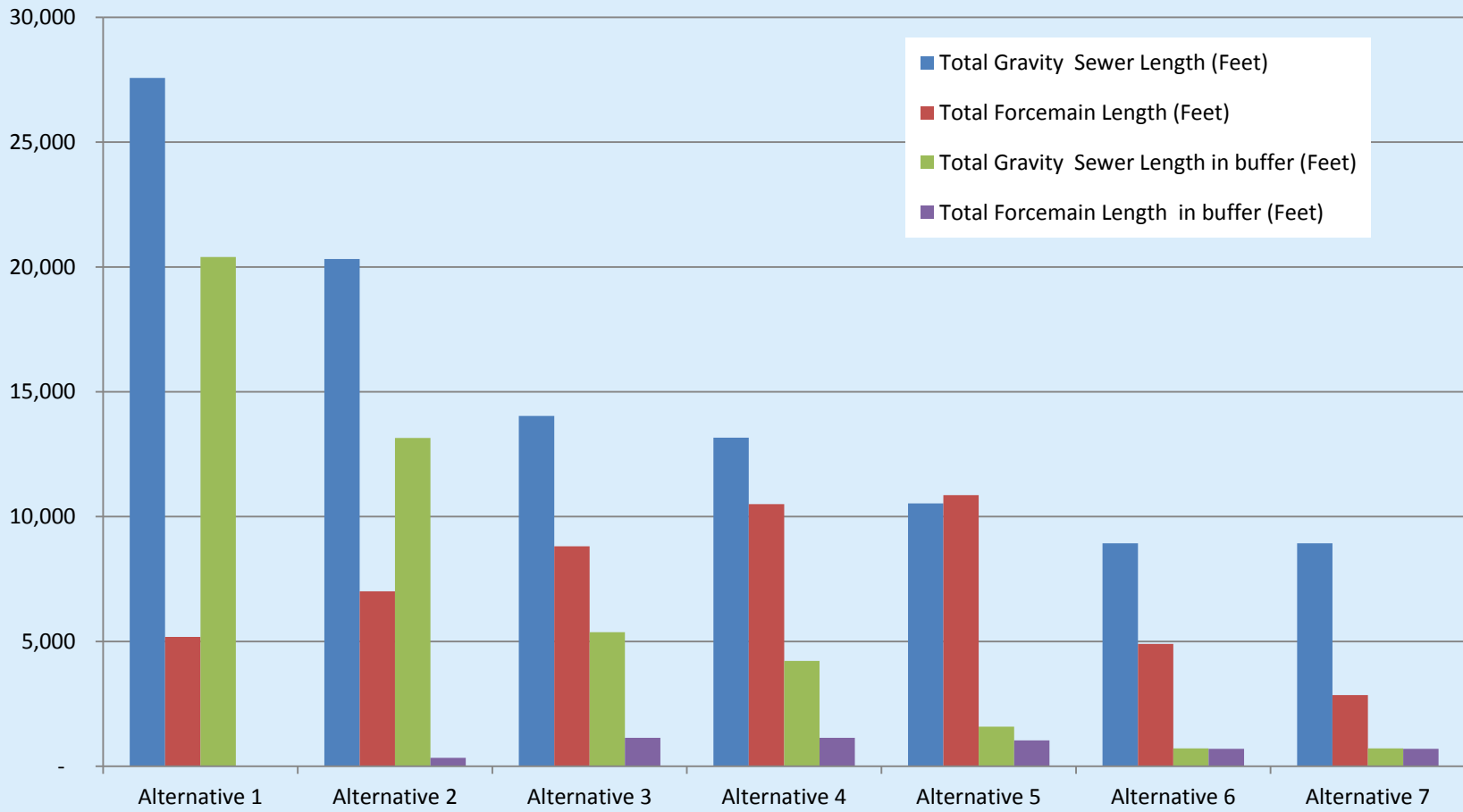
- Original alternatives 1 and 2 were **not selected for further evaluation** due to significant length of gravity sewer within buffer zones.
- All alternatives (including 6 and 7) could provide public sewer service to Clarksburg Historic District
 - Additional local sewer extensions may still be required.
- Under Alternatives 3, 4, 5, 6, and 7, sewer service to properties east of I-270 is independent of development of Pulte/King properties.
- Generally, sewer system operation and reliability decrease with increasing number of pump stations and grinder pumps.
- Long term O&M costs increase with increasing number pump stations and grinder pumps.
- WSSC views the Miles and Miles North pumping stations as critical to supporting non-residential development in the Clarksburg Historic District.

Summary – Sewer Lengths in Buffers

	Description	Total Gravity Sewer Length (Feet)	Total Forcemain Length (Feet)	Total Low Pressure Sewer Length (Feet)	Total Gravity Sewer Length in buffer (Feet)	Total Forcemain Length in buffer (Feet)	Total Low Pressure Sewer Length in buffer (Feet)	Percentage of Gravity Sewer in buffer	Percentage of FM in buffer	Percentage of FM in buffer
Alternative 1	Gravity + 1 PS	27,570	5,180	-	20,400	-	-	74%	-	-
Alternative 2	Gravity + 2 PS	20,320	7,010	-	13,150	340	-	65%	5%	-
Alternative 3	Gravity + 3 PS	14,030	8,810	-	5,370	1,140	-	38%	13%	-
Alternative 4	Gravity + 4 PS	13,160	10,500	-	4,220	1,140	-	32%	11%	-
Alternative 5	Gravity + 5 PS	10,530	10,860	-	1,590	1,040	-	15%	10%	-
Alternative 6	Gravity + 5 PS	8,930	4,900	-	720	700	-	8%	14%	-
Alternative 7	Gravity + 3 PS + Grinder Systems	8,930	2,850	2,600	720	700	-	8%	25%	-

Alternatives 6 and 7 significantly reduce the length of sewer and force main in the buffer area.

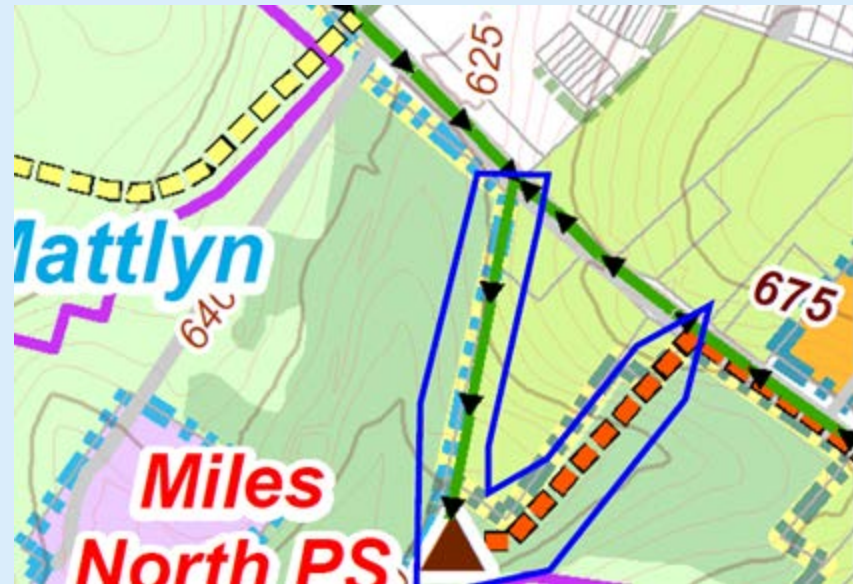
Summary – Sewer Lengths



Summary – Sewer Lengths in Buffer

The 700+ feet of gravity and force main in buffer are the sewer stretches leading up to and from Miles North PS

Only sewer and force main remaining in buffer for Alternatives 6 and 7



Summary – Stream Crossings

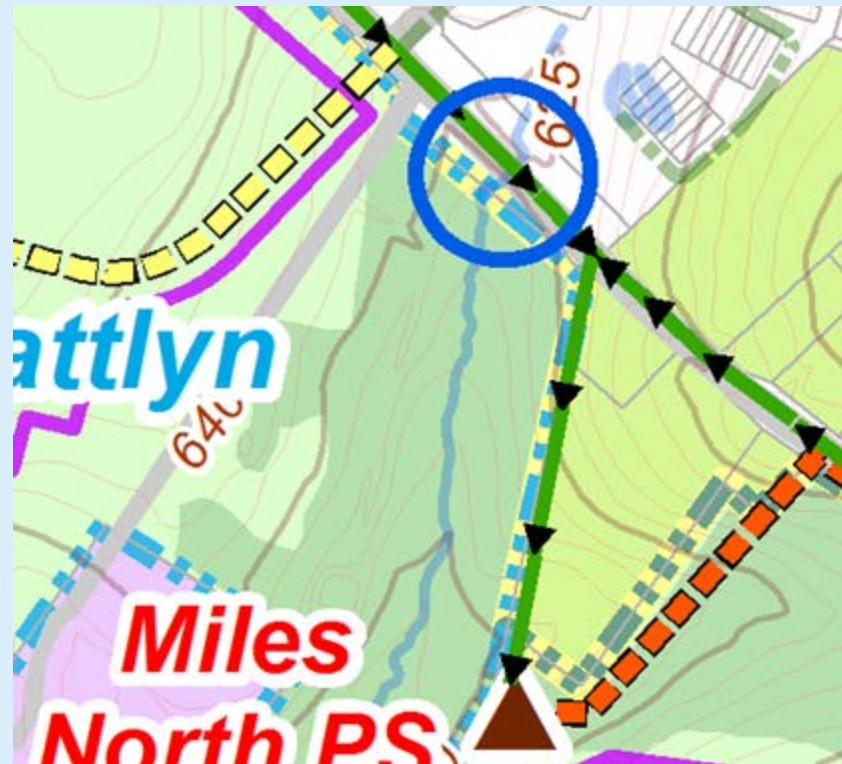
	Description	Breakdown						
		No. of Stream Crossings	Ten Mile Creek Main Trunk Sewer	Egan North Trunk Sewer	Frederick Rd Sewer	Clarksburg Rd Sewer	Spire St Sewer	Other
Alternative 1	Gravity + 1 PS	14	7	3	1	-	-	3
Alternative 2	Gravity + 2 PS	11	7	-	1	-	-	3
Alternative 3	Gravity + 3 PS	6	2	-	1	-	-	3
Alternative 4	Gravity + 4 PS	5	1	-	1	-	-	3
Alternative 5	Gravity + 5 PS	4	1	-	1	-	-	2
Alternative 6	Gravity + 5 PS	1	-	-	1	-	-	-
Alternative 7	Gravity + 3 PS + GS	1	-	-	1	-	-	-

Alternatives 6 and 7 significantly reduce the number of stream crossings

Summary – Sewer Lengths in Stream Crossing

The stream crossing is on
Frederick Road.

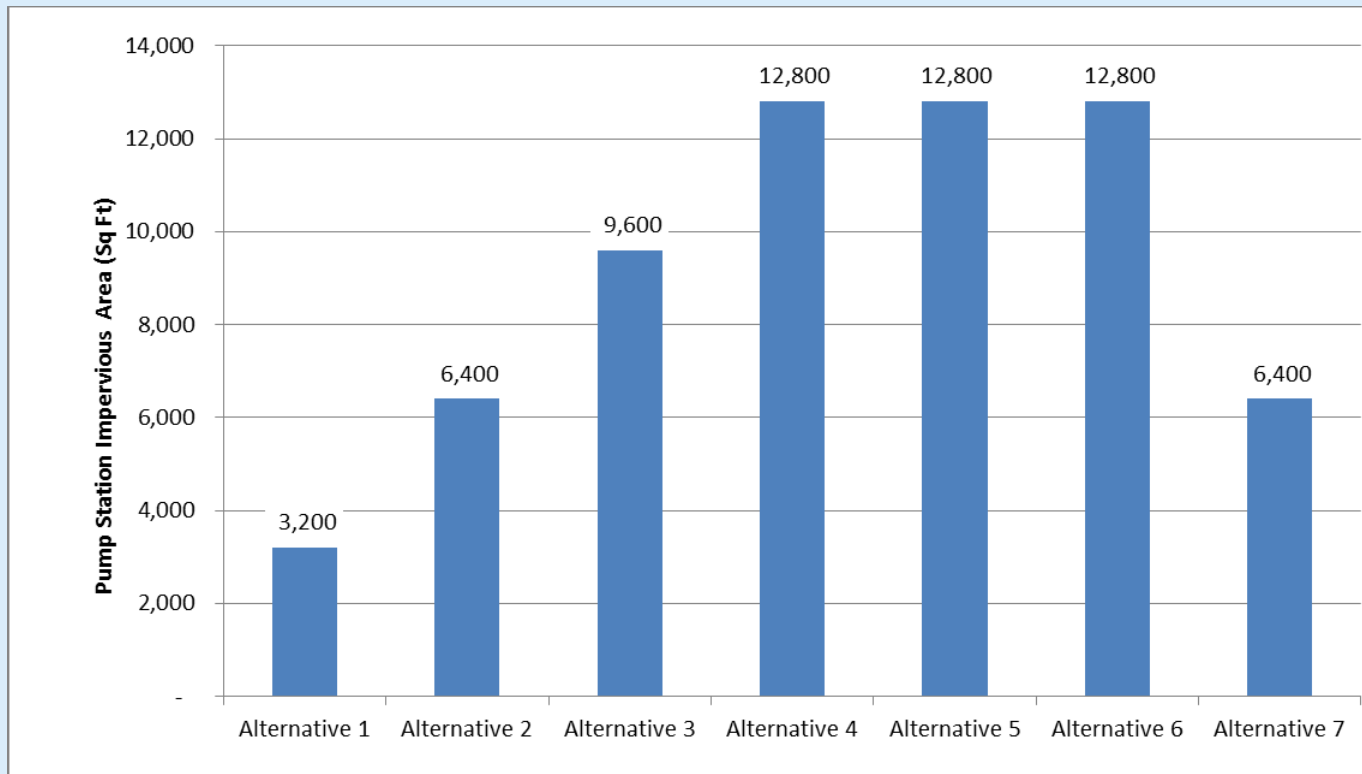
Only stream crossing
remaining for Alternatives 6
and 7.



Summary – Number of Pump Stations

Alternative	Description	Pulte PS	Egan North PS	Egan PS (Proposed)	New PS at Correctional Facility	Clarksburg Rd PS	Miles North PS	Miles PS (Proposed)	Existing Correctional Facility PS in use	Total Number of Pump stations in service
Alternative 1	Gravity + 1 PS	Yes	No	No	No	No	No	No	No	1
Alternative 2	Gravity + 2 PS	Yes	Yes	No	No	No	No	No	No	2
Alternative 3	Gravity + 3 PS	Yes	Yes	No	Yes	No	No	No	No	3
Alternative 4	Gravity + 4 PS	Yes	Yes	No	Yes	Yes	No	No	No	4
Alternative 5	Gravity + 5 PS	Yes	Yes	No	No	Yes	Yes	No	Yes	5
Alternative 6	Gravity + 5 PS	No	Yes	Yes	No	No	Yes	Yes	Yes	5
Alternative 7	Gravity + 3 PS + Grinder Systems	No	No	No	No	No	Yes	Yes	Yes	3

Summary – Impervious Area for Pump Stations



Assumes 3,200 square feet per wastewater pumping station

For Our Next Meeting...

- .

Next Tentative Meeting Date

Open Comments/Discussion from Public

Thank you for attendance. Have a safe and great evening.

We appreciate your support, participation and cooperation.