


Draft Guidance on Trenchless Technology

Environmental Considerations for the Construction and Operation of Trenchless Technology

Presentation
to the
Agricultural Advisory Board (AAB)

November 2019
Harrisburg, PA

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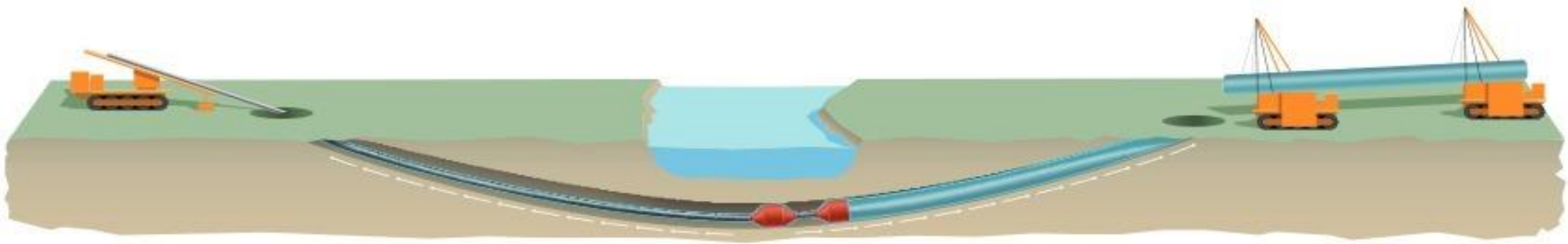
- **Charge of the Stakeholder workgroup:** *“Construction and Operation during Horizontal Directional Drilling (HDD)”*

- Stipulation states: *Enhanced Best Practices ("EBP") in the design and execution of HDDs and HDD Inadvertent Return Assessment, Preparedness, Prevention and Contingency Plans*

- HDD workgroup and the Trenchless Technology Technical Guidance Document



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- Site-specific geological, topographical, and hydrological analysis to be considered
- Type of analysis and documentation of adjacent features in the vicinity of the project footprint
- Potential impact of the planned activity on or from adjacent features.

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- Enhanced Best Practices for:
  - preventing and responding to Inadvertent Returns (IRs) and
  - preventing and responding to hydrological impacts from IRs;
  - groundwater quality and quantity protection;
  - procedures to identify water supplies in the vicinity of a proposed HDD beyond the use of the Pennsylvania Groundwater Information System

- Recommendations for permittee to conduct water supply testing (quality and quantity) for landowners within the vicinity of an HDD.

Contributors to the Guidance Document

- **State Agency Representatives**
  - DEP's Regional Permit Coordination Office
  - DEP's Bureau of Oil and Gas
  - DEP's Bureau of Waterways Engineering
  - Pennsylvania Public Utility Commission (PUC)
- **Appellant Representatives**
  - Clean Air Council
  - Mountain Watershed Association
  - Delaware Riverkeeper Network
- **Federal Agency Representatives**
  - Federal Energy Regulatory Commission (FERC)
  - Pipeline and Hazardous Materials Safety Administration (PHMSA)
- **Industry Representatives**
  - Oil and Gas Experts
  - Drilling Experts

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- <u>Advisory Committees and Boards we are presenting to include:</u>
  - Water Resources Advisory Committee (WRAC) – *October 30, 2019*
  - Agricultural Advisory Board (AAB) – *November 7, 2019*
  - Small Water Technical Advisory Committee – *TBD*
  - Citizens Advisory Council (CAC) – *TBD*
  - Bureau of Safe Drinking Water – *Provided Comments on Draft*
  - Environmental Justice Advisory Board (EJAB) - *TBD*
  - Sewage Advisory Committee - *declined*
  - Oil and Gas Technical Advisory Board – *HDD TBD, AA declined*

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Section 1. Preamble

A. Foreword/Executive Summary –

- policies, procedures, and best practices to aid in the prevention of adverse environmental impacts from construction utilizing trenchless technology.

- It is a road map for project proponents

- It outlines the steps and options to be considered when a project proponent, for any project (e.g., fiber optic, pipeline, etc.) proposes the use of a trenchless technology construction method

- It includes a suitability and feasibility analysis, as well as Environmental Considerations, a design and permitting section, and a construction and compliance section.

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Section 1. Preamble, cont. -

B. Disclaimer

C. Authority

D. Purpose

E. Scope

F. Definitions

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Section 2. Suitability, Feasibility, and Environmental Considerations

A. Proposed Alternative
B. Site Suitability Analysis – looks at the physical, technical, and geological constraints of the project.

1. Existing Surface Conditions – (e.g., Topography, Water resources, cultural, etc).
2. Subsurface Conditions – (e.g., geological conditions, soil interfaces and geological contacts, groundwater, existing utilities, such as cross bores, wells).
3. Field Exploration – “ground truthing”. Geotech and Geophysical investigations and hydrogeologic investigations.

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Section 2. Suitability, Feasibility, and Environmental Considerations, cont.

C. Feasibility Analysis

D. Environmental Considerations

E. Conclusion

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Section 3. Design and Permitting

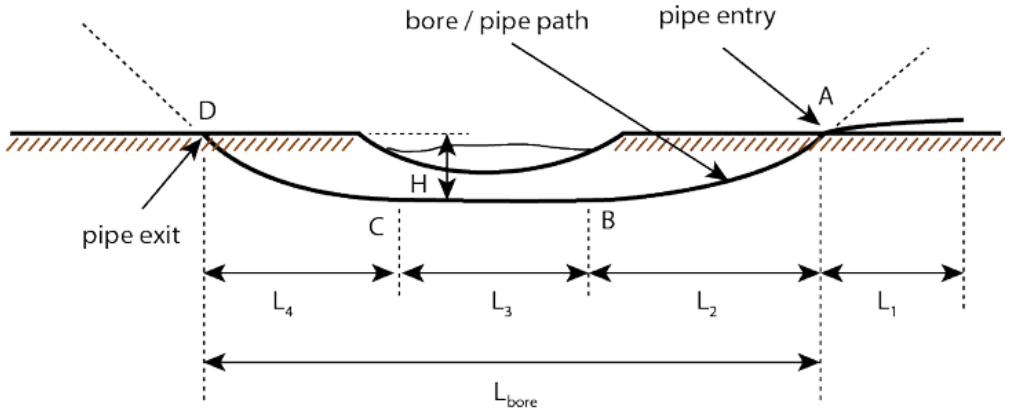
A. Preferred Alternative

B. Design

1. Site Constraints and Topographic Considerations
2. Inadvertent Returns (IRs)
3. Hole Flush
4. Hole Stability
5. Failure Mode Contingency Planning
6. Water Supplies
7. Waters of the Commonwealth

C. Confirmation

D. Permitting



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Section 4. Construction and Compliance

A. Preparedness, Prevention, and Contingency (PPC) Plan

B. Personnel, Responsibilities, and Trainings

C. Preconstruction Activities

D. Drilling Fluid Management

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Section 4. Construction and Compliance, cont.

E. Inadvertent Return Minimization and Methodologies

1. Instrumentation
2. Fluid Circulation
3. Loss of Circulation

F. Inspection, Compliance, Monitoring, and Emergency Response

1. Inspection Protocols
2. Monitoring Protocols
3. Compliance
4. Emergency Response Planning

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Appendices

A. Trenchless Technology Risk Evaluation
B. Data Resource List
C. Bore & HDD Flowchart
D. Instructions for Determining Public Water Supply Source Locations using eMapPA
E. Example Template for a PPC Plan – Simple and Complex Projects
F. Example Notification Letter and Well Construction Questionnaire
G. Example letter conveying water quality results and notification of EPA maximum contaminant Level (MCL) exceedances
H. Technical Guidance Document – Plan Submittal Checklist(s)

Questions


Draft Guidance on Alternatives Analysis

Methods and Factors to Consider to complete Alternatives Analysis

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  - DEP's Southeast Regional Office
  - DEP's Bureau of Clean Water
  - DEP's Bureau of Waterways Engineering and Wetlands
  - PA Department of Conservation and Natural Resources
  - PA Department of Transportation (PennDOT)
  - PA Fish & Boat Commission
- **Appellant Representatives**
  - Clean Air Council
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  - Delaware Riverkeeper Network
- **Federal Agency Representatives**
  - U.S. Army Corps of Engineers
- **Industry Representatives**
  - Oil and Gas Experts
  - Transportation Experts
  - Pa Homebuilders
  - Consultant, Ch. 105 Expert

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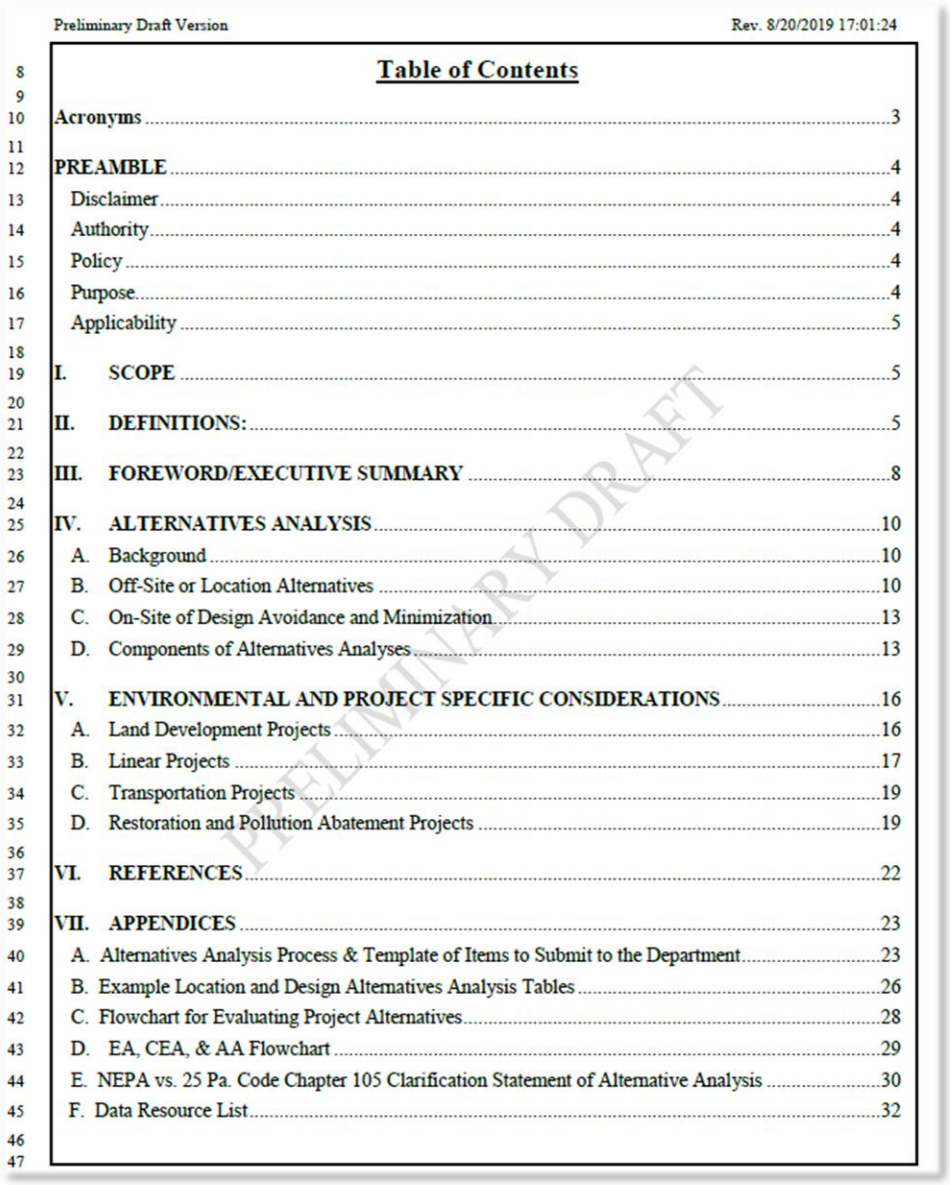

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PRELIMINARY DRAFT

Preamble includes:

- Disclaimer
- Authority
- Policy
- Purpose
- Applicability

Section I: Scope

Section II: Definitions

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Section III. FOREWORD/EXECUTIVE SUMMARY

Clean Streams Law (CSL) – 1937

Dam Safety and Encroachments Act (DSEA) - 1979

→ **Environmental Quality Board (EQB)** → **PA Code, Title 25 Chapter 105**

CSL & DSEA - grant EQB the power and duty to adopt regulations and standards that are necessary and proper to carry out their purposes

→

Rules and Regulations that are adopted by the EQB are contained in PA Code, Title 25. Environmental Protection, Department of Environmental Protection, Chapter 105, Dam Safety and Waterway Management, which defines how DEP is to regulate water obstructions and encroachments

§105.13(e)(viii) - Alternatives Analysis

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Alternatives Analysis regulatory language

- **§105.13(e)(viii) Alternative Analysis.** A detailed analysis of alternatives to the proposed action, including alternative locations, routings or designs to avoid or minimize adverse environmental impacts.

273 Regulations, by nature, contain general language because they are intended to apply to a variety of
274 circumstances and situations. Similarly, the language in Chapter 105 relating to alternatives analysis
275 was intentionally general because the analysis is very often project specific.

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Section IV. A. Alternatives Analysis Background

- The alternatives analysis is the project applicant's written documentation of efforts to avoid or minimize environmental impacts and to demonstrate to the Department that impacts from the proposed water obstruction(s) and encroachment(s) have been avoided and minimized to the greatest extent practicable

- Prepared by individuals with appropriate experience, training, local knowledge and familiarity with regulations

- An alternative is considered practicable if it is capable of being implemented after taking into consideration **cost**, **existing technology** and **logistics**

- Comparison to NEPA process

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Section IV. B. Off-Site or Location Alternatives

- Sites both owned and not owned by the applicant need to be considered

- Includes those not presently owned by the applicant, which could reasonably be obtained, utilized, expanded, or managed to fulfill the basic purpose of the proposed project

Additional Factors
1. Utility Issues
a. Utility or infrastructure availability (e.g. public water, sewer)
b. Joint utility easements
c. Lack of ROW for collocation of utility lines
2. Rerouting, re-siting or relocating the project
a. Availability of other sites
b. Willingness of current owners to sell
c. Property rights/eminent domain
3. Site size (to meet project purpose) vs. parcel size
4. Physical site constraints (e.g. size, slope, floodplains, highly erodible soils, geologic/geotechnical concerns)
5. Constructability of project (as designed)
6. Operation and maintenance concerns
7. Demographics
8. Presence of wetland and stream resources
a. Resource size
b. Level of impact on resource.
c. Resource value
i. Special Protection
ii. Stream impairment
iii. T&E species
9. Public health and safety
10. Other environmental concerns (e.g. riparian forest, interior forest, prime agricultural lands, upland T/E species/habitat)
11. Local land use regulations (e.g. zoning, subdivision land development ordinances)
12. Historic resources
13. Parks and recreation
14. Cost concerns
15. Conformance with local watershed plans

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Section IV. C. On-Site or Design Avoidance and Minimization

1. The spatial requirements of the proposed project;
2. The project's purpose and need, and how the purpose relates to placement or configuration;
3. Efforts to reduce the scope of the proposed project;
4. The location of any existing infrastructure or natural features that may dictate the placement or configuration of the proposed project;
5. Site constraints including local zoning requirements and site access;
6. Standard engineering and safety practices.

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Section IV. D. Components of an Alternatives Analysis

1. Aquatic Resource Impact
2. Cost
3. Existing Technology
4. Environmental Policies and Best Management Practices

Source: www.projectpals.com

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Section V. Environmental and Project Specific Considerations

A. Land Development Projects

1. Residential Development
2. Commercial Development
3. Industrial Development
4. Institutional / Educational Development

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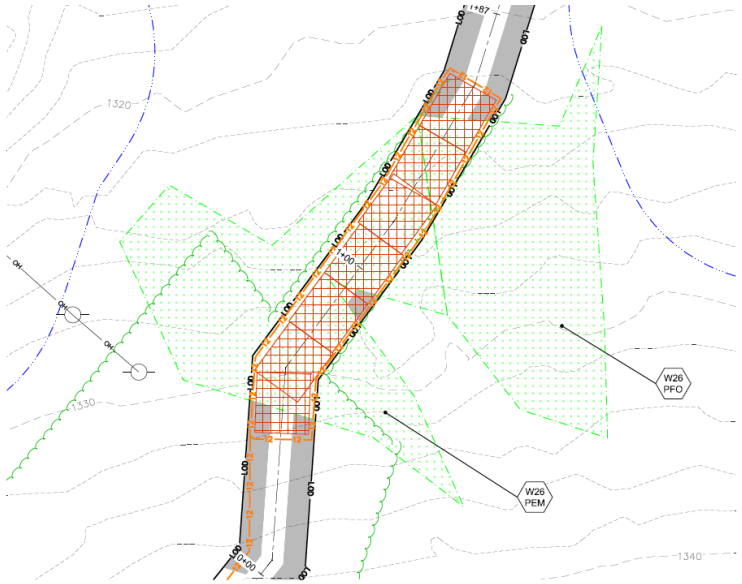
Section V. Environmental and Project Specific Considerations

B. Linear Projects

1. Pipelines, Utility Lines, and Energy and Power Transmission Lines
   a) Open Cut vs. Trenchless Method Technologies
   b) Special Protection Waters
   c) Right of Way Reduction and BMPs
   d) Collocation BMPs
   e) Multiple Resource Crossings BMPs

2. FERC Regulated Projects



Source: Columbia 134 Replacement

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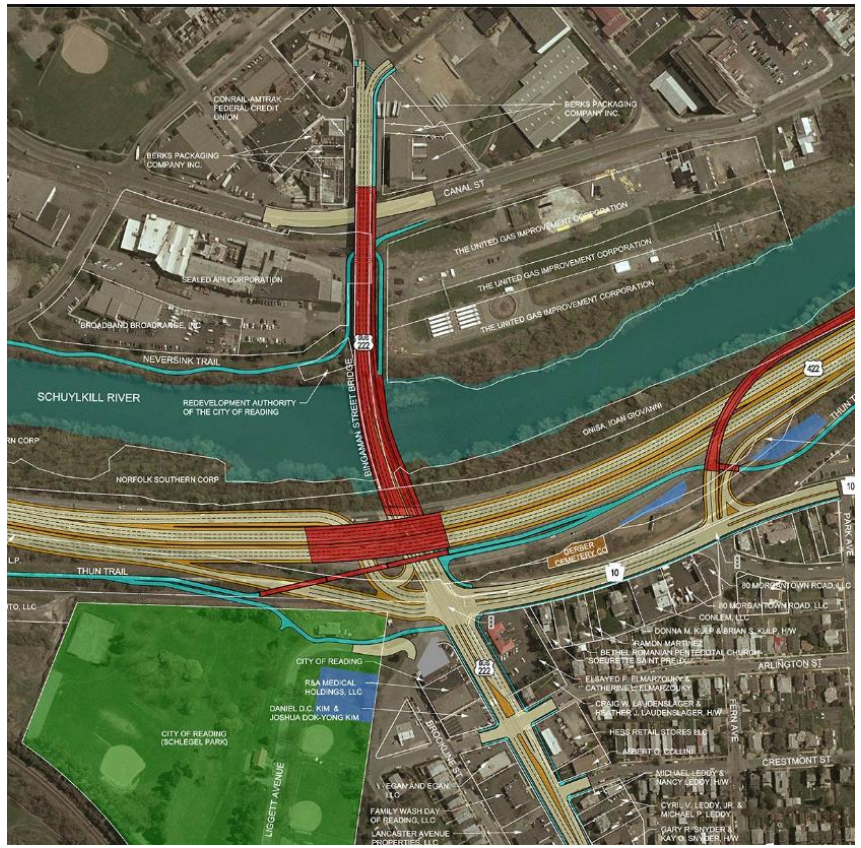
Section V. Environmental and Project Specific Considerations

C. Transportation Projects

1. New Alignments and Facilities

2. Existing Alignments and Facilities

3. Bridge or Culvert Restoration or Replacement



Source: 422 Westshore Bypass

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Section V. Environmental and Project Specific Considerations

D. Restoration and Pollution Abatement Projects

1. Aquatic Resource Restoration
2. Abandoned Mine Reclamation
3. Acid Mine Drainage or Other Drainage Treatment
4. Brownfields
5. Recreational Projects

Brownfield Redevelopment

Source: www.businesswire.com

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Appendix A – Describes the Alternative Analysis Process

Appendix B - Template of Items to Submit to the Department

Appendix C - Example Location and Design Alternatives Analysis Tables

Appendix D. Flowchart for Evaluating Project Alternatives

Questions