SUMMARY

• Design Challenges & Solution
• The Upstream Treatment Train
• Hydraulic Routing
• Structure Detailing
• Conclusions and Applications
THE CHALLENGE

- Karst Geology
THE CHALLENGE

• Karst Geology

• Existing Features for Preservation
THE CHALLENGE

• Karst Geology
• Existing Features for Preservation
• Massive Single Development Footprint
THE CHALLENGE

- Karst Geology
- Existing Features for Preservation
- Massive Development Footprint
- High Quality Watershed
USE THE EXISTING NATURAL RESOURCES PROVIDED BY THE SITE

Worksheet 3 “Non-Structural” Credits
Max 25%
Protect Natural Flow Paths = ¼” x Area

PRESERVATION OF NATURAL RESOURCES IS MUCH MORE THAN JUST “SELF CREDITING”
THE SOLUTION

STRUCTURAL BMP 6.4.9

VEGETATED FILTER STRIP

Filter Strip Volume Reduction =
Filter Area x Infiltration Rate x Storm Duration
THE SOLUTION
OVERALL SITE PLAN

VOLUME REDUCTION

LEVEL SPREADER

PEAK RATE REDUCTION

WATER QUALITY

DEVELOPMENT PAD

PROPOSED DISTRIBUTION CENTER
530' x 1510'
805,600 SF BUILDING FOOTPRINT

187 DOCK POSITIONS (1 PER 4,300 SF)
268 TRAILER STALLS (1 PER 3,200 SF)
372 VEHICLE PARKING SPACES (1 PER 1,800 SF)
Filter Strip Volume Reduction =

Filter Area x Infiltration Rate x Storm Duration

TARGET PEAK RATE 5.6 CFS

POST DEVELOPMENT PEAK FLOW

OUT OF BASIN

A1-POST OUT BASIN
Hyd. No. 29 -- 2 Year
Filter Area X Infiltration Rate = Maximum Infiltrating Flow Rate

\[ \text{Ft.}^2 \times \text{Ft. / Sec.} = \text{Ft.}^3 / \text{Sec.} \]

Max. Infiltrating Flow Rate: 1.23 CFS

VOLUME CREDIT: 320,000 CF
No Construction Details:

Preserved Indigenous Meadow

- Specifications for repair and maintenance including Topsoil and Seeding
- Filter Area contained in a delineated Stormwater Easement
- Regular Mowing of the 1st 5’ beyond the end of the Level Spreader
CONCLUSIONS & APPLICATIONS

Future Applications:
- Infiltration in Karst
- Preserved Low Flow Paths
- Any Site with Concern for Maintenance
Special Thanks to:

• Owner/Client – Liberty Property Trust
• Contractor – Penntex Construction