

FSA WINTER CONFERENCE 2025 GUIDED TOUR OF GREEN INFRASTRUCTURE

Wednesday, December 3, 2025

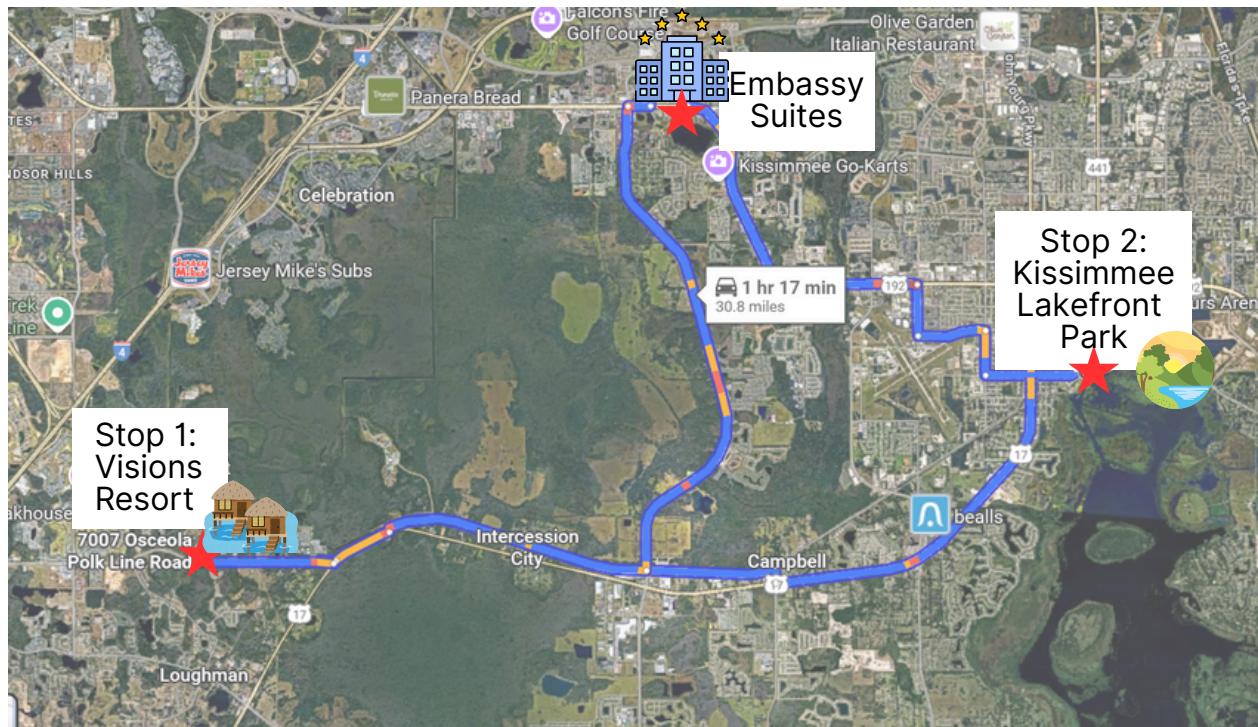
12:45PM - 3:00PM

- Underground Storage
- Pervious Pavers
- Nutrient Separating Baffle Box
- Rain Gardens

Join us to see how green stormwater infrastructure has been applied in both a private development at Visions Resort and Spa in Davenport, and a municipal space at Kissimmee Lakefront Park.

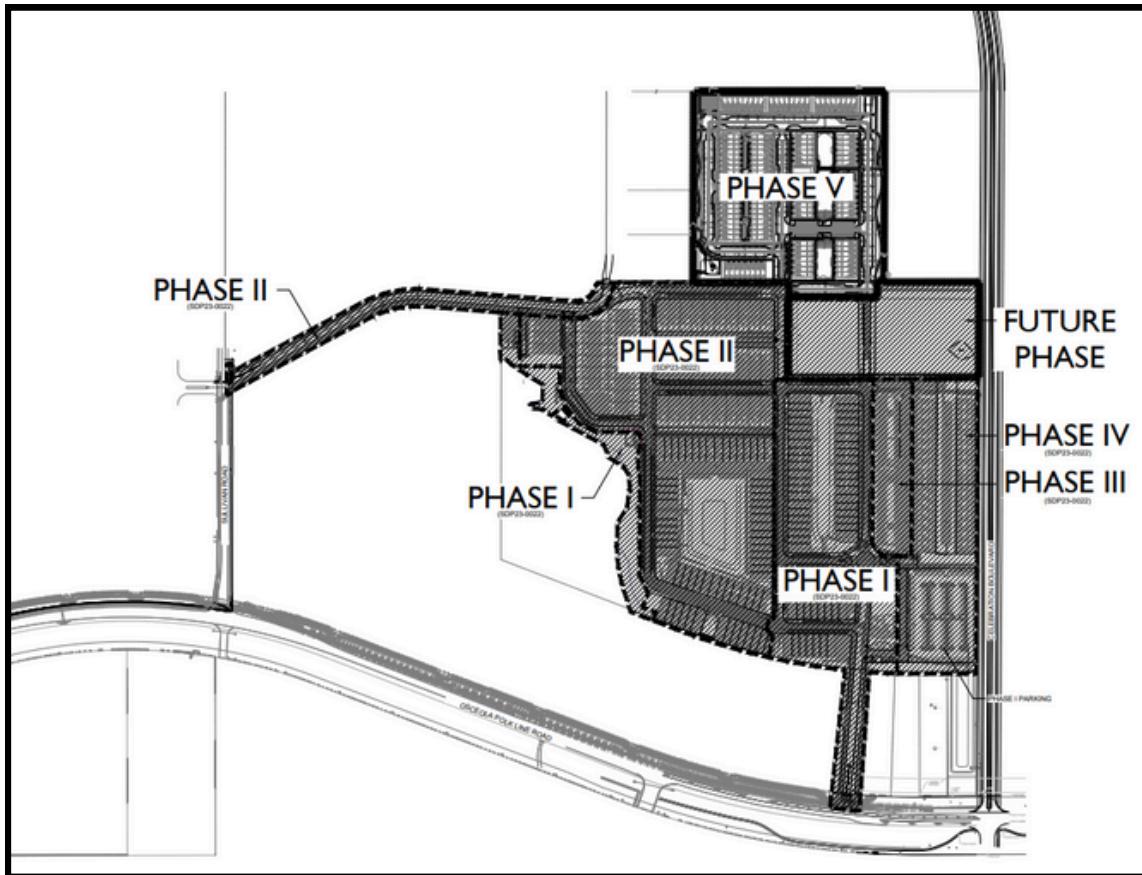
ITINERARY

12:45	Bus Departs Embassy Suites
12:45 – 1:15	Travel to Visions Resort & Spa – Davenport <i>7007 Osceola Polk Line Rd., Davenport, FL 33896</i> Speaker: Jose Rodriguez, Barrios Engineering, Orlando, FL
1:15 – 1:35	Visions Resort with Demo (20 minutes at site) - Underground storage and pervious pavers Speaker: Eric Smith, Ferguson Waterworks
1:35 – 1:40	Load Bus
1:40 – 2:05	Travel to Kissimmee Lakefront Park <i>201 Lakeview Drive, Kissimmee, FL 34741</i> Speaker: Jessica Bruso, Ferguson Waterworks
2:05 – 2:25	Kissimmee Lakefront Park (20 minutes at site) - Baffle Box, rain gardens and modular stormwater basin Speaker: Nagel Altrui, Floodplain Manager, City of Kissimmee
2:25 – 2:30	Load Bus
2:30 – 3:00	Travel to Embassy Suites (25 minutes travel) <i>955 Kyngs Heath Road, Kissimmee, FL 34746</i>



STOP 1: VISIONS RESORT AND SPA

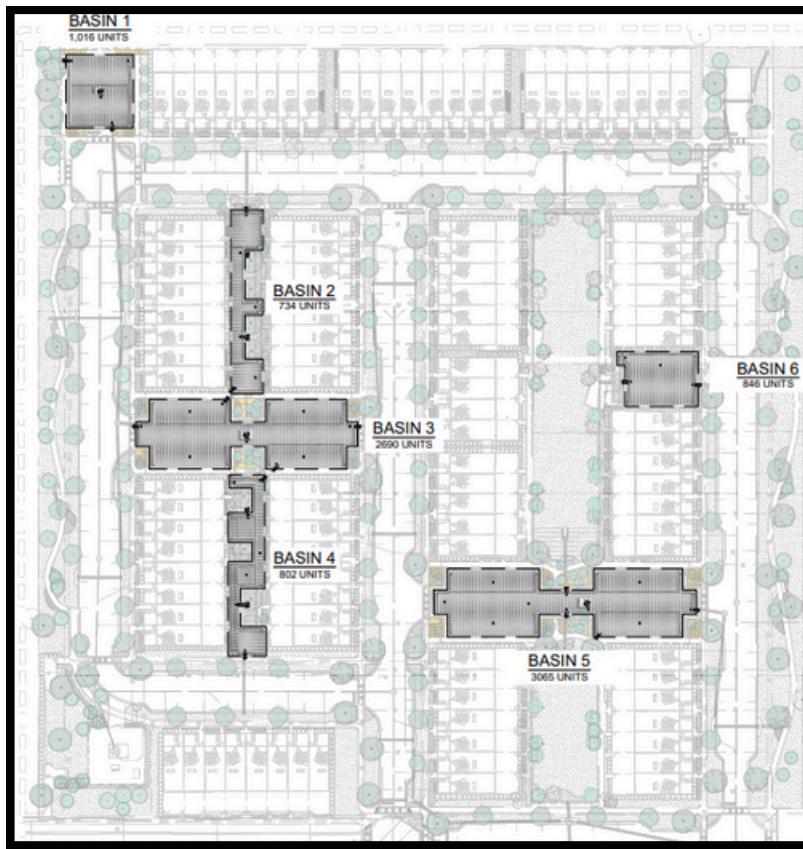
Visions Resort and Spa is a multi phase development project that will include 48 luxury single family homes, 132 townhomes and a 180-unit condo hotel. The resort will be a part of the Preferred Hotels group and have shuttles to Walt Disney World. A retail area and water park will be open to the public.



GSI AT VISIONS RESORT AND SPA

Underground Storage Total: 263,877 cf (6.06 ac-ft)

Pervious Pavers Total: 107,859 sf



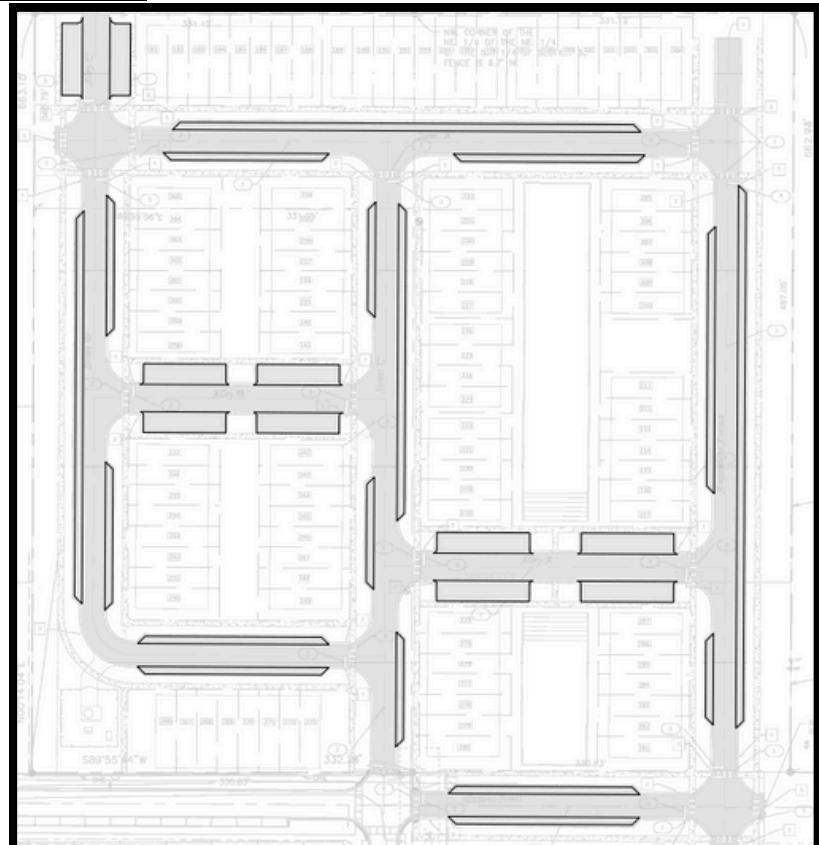
Visions Phase V R-Tank Layout- 45,859 cf

Underground Storage

- **R-Tank HD**
 - 95% void space
 - Modular storage
 - 20" cover for HS-20

Pervious Pavers

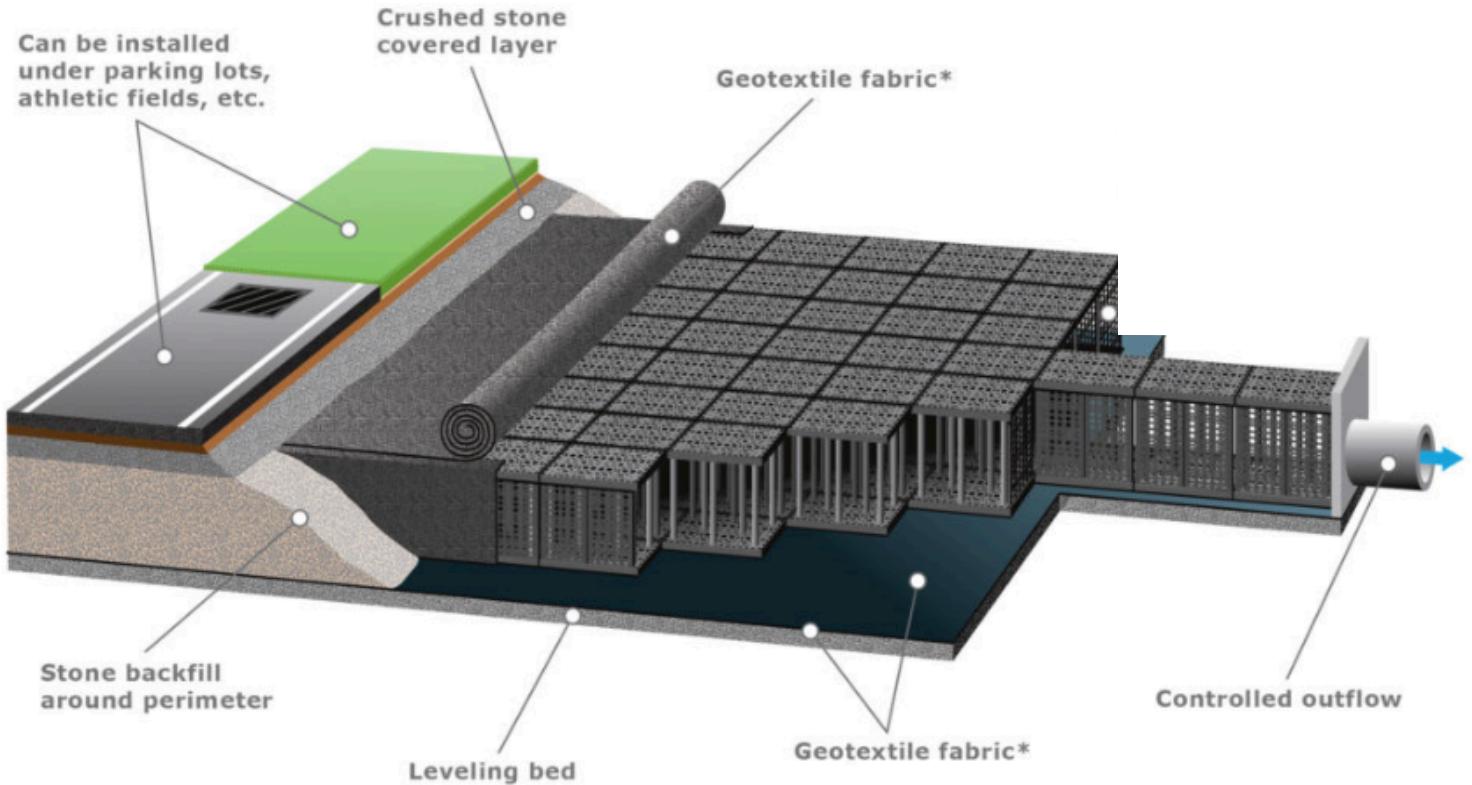
- **PowerBlock**
 - **1/4" open joint**
 - **1000"/hr infiltration rate**
 - **HS-20 Loading**
 - **ADA Compliant**



Visions Phase V PowerBlock Layout- 42,808 sf

GSI AT VISIONS RESORT AND SPA

- Underground Storage- R-Tank



* PVC or HDPE Liner cab be incorporated as required by engineer of record

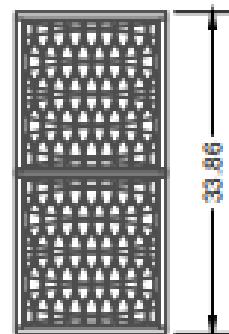
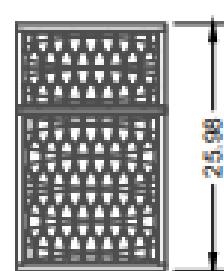
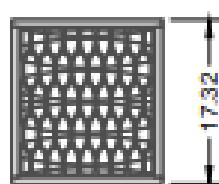
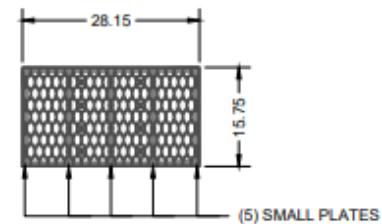
Modular Underground Storage Diagram

<https://stormwater.brentwoodindustries.com/knowledge-center/detention-tank/>

R-TANK HD UNIT INFORMATION					
UNIT TYPE	WIDTH	LENGTH	HEIGHT	STORAGE VOLUME	WEIGHT
MINI	15.75"	28.15"	9.45"	2.30 CF	10.90 LBS.
SINGLE	15.75"	28.15"	17.32"	4.22 CF	17.30 LBS.
SINGLE+MINI	15.75"	28.15"	25.98"	6.33 CF	25.90 LBS.
DOUBLE	15.75"	28.15"	33.86"	8.25 CF	32.30 LBS.
DOUBLE+MINI	15.75"	28.15"	42.52"	10.36 CF	41.00 LBS.
TRIPLE	15.75"	28.15"	50.39"	12.28 CF	47.40 LBS.
TRIPLE+MINI	15.75"	28.15"	59.06"	14.39 CF	56.00 LBS.
QUAD	15.75"	28.15"	66.93"	16.31 CF	62.40 LBS.
QUAD+MINI	15.75"	28.15"	75.59"	18.42 CF	63.80 LBS.
PENTA	15.75"	28.15"	83.46"	20.34 CF	69.30 LBS.

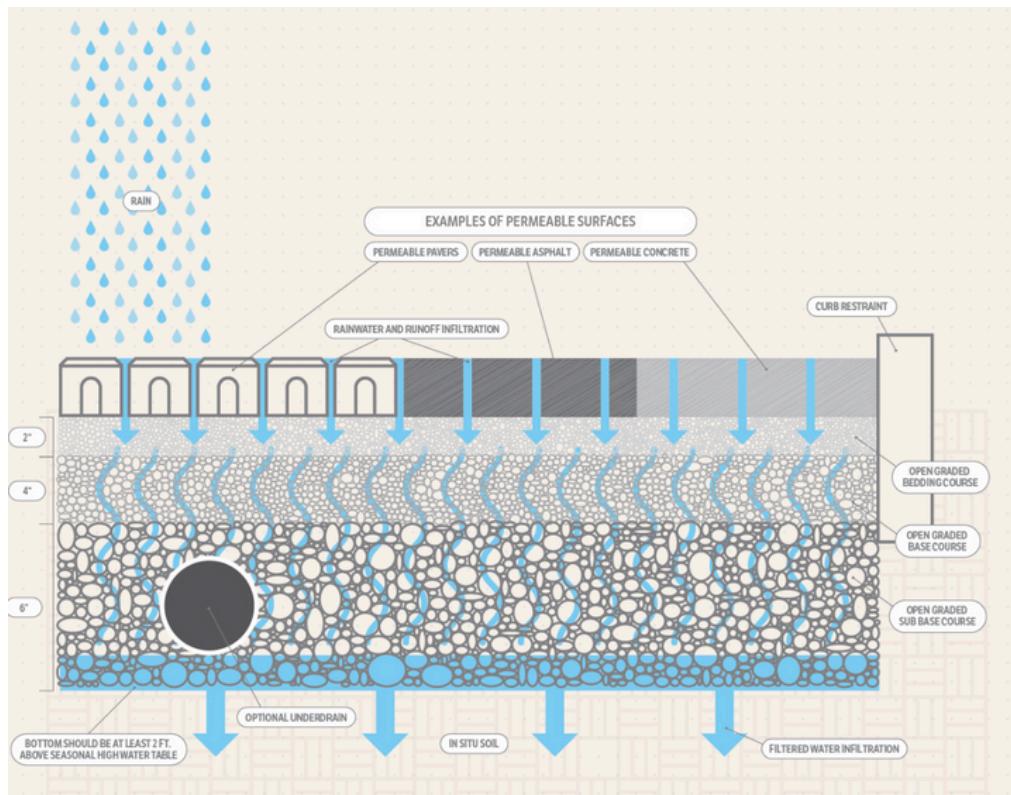
NOTES:

1. R-TANK HD HAS AN INTERNAL VOID SPACE OF 95% AND A SURFACE AREA VOID OF 90%.
2. R-TANK HD HAS A MAXIMUM COMPRESSION STRENGTH OF 33.4 PSI, (MODULE ONLY).
3. R-TANK HD IS MADE FROM 100% RECYCLED POLYPROPYLENE.
4. R-TANK HD IS COMPRISED OF 5 SMALL WALLS PER UNITS.

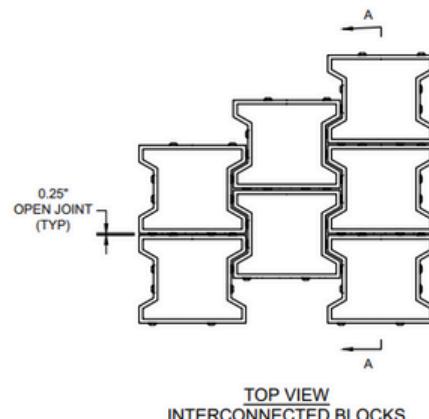
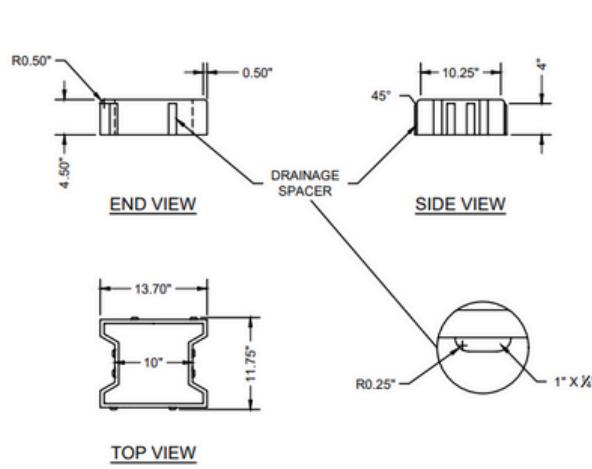


GSI AT VISIONS RESORT AND SPA

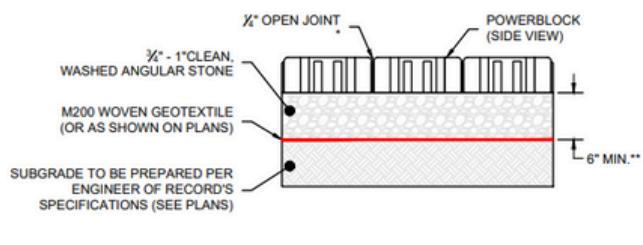
- Pervious Pavers- PowerBlock



Pervious Paver Diagram- <https://gsi.floridadep.gov/gsi-basics/what-is-gsi/>



SPECIFICATIONS	
SURFACE INFILTRATION RATE	1,000 IN/HR AVG.
OPEN JOINT WIDTH	0.25 IN
JOINT FILLER BETWEEN BLOCKS *	NONE ALLOWED
** RECOMMENDED STONE BASE DEPTHS	
DEPTHS LISTED BELOW ARE SUBJECT TO CBR TESTS AND THE DESIGN ENGINEER'S SUBGRADE SUPPORT CALCULATIONS.	
PEDESTRIAN TRAFFIC	6"-8" MIN.
PASSENGER VEHICLE TRAFFIC	12" MIN.
INDUSTRIAL TRAFFIC	18" MIN.



SECTION A-A

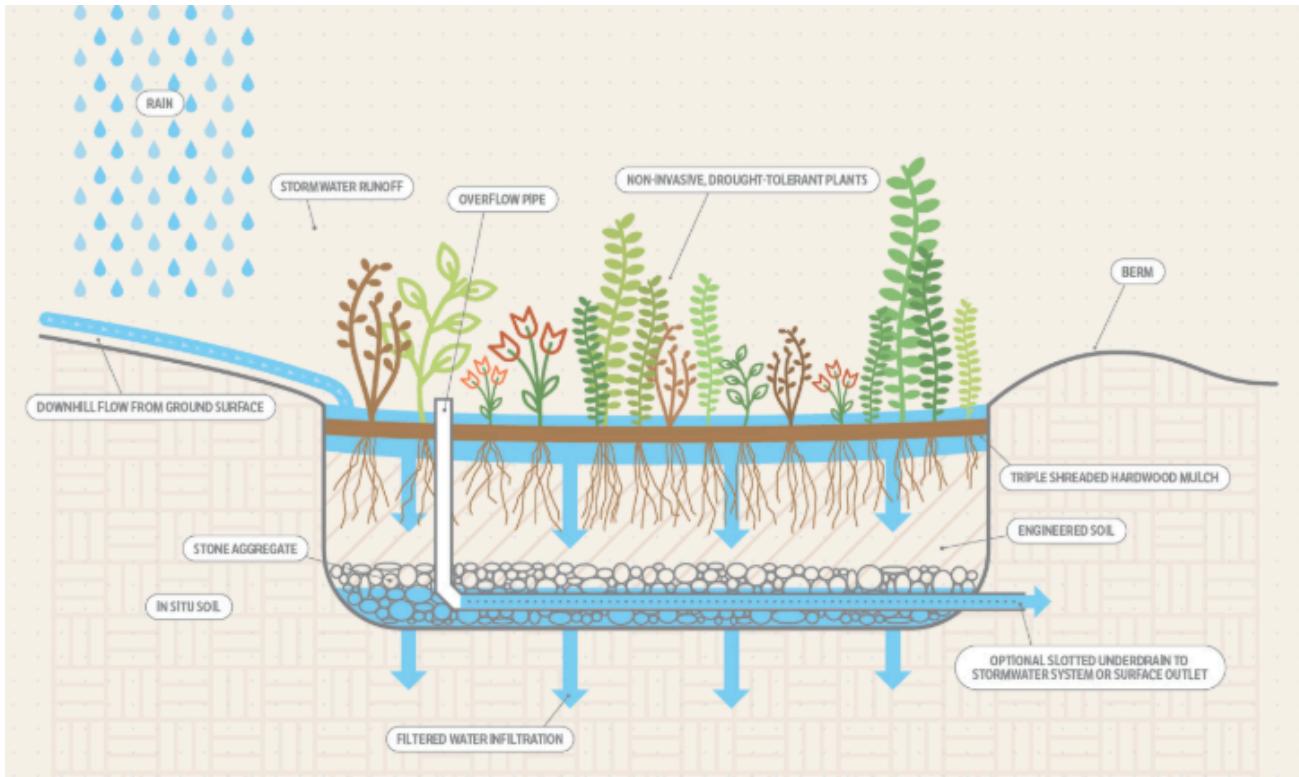
STOP 2: KISSIMMEE LAKEFRONT PARK

This park is located between historic downtown Kissimmee and Lake Tohopekaliga. It has lake and nature views, pavilions, playgrounds, a splash pad, a fishing pier, and large outdoor event spaces. Public boat access is available at the Big Toho Marina.



GSI AT KISSIMMEE LAKEFRONT PARK

Rain Gardens and Bioretention areas with native plants and trees



Bioretention Diagram- <https://gsi.floridadep.gov/gsi-basics/what-is-gsi/>

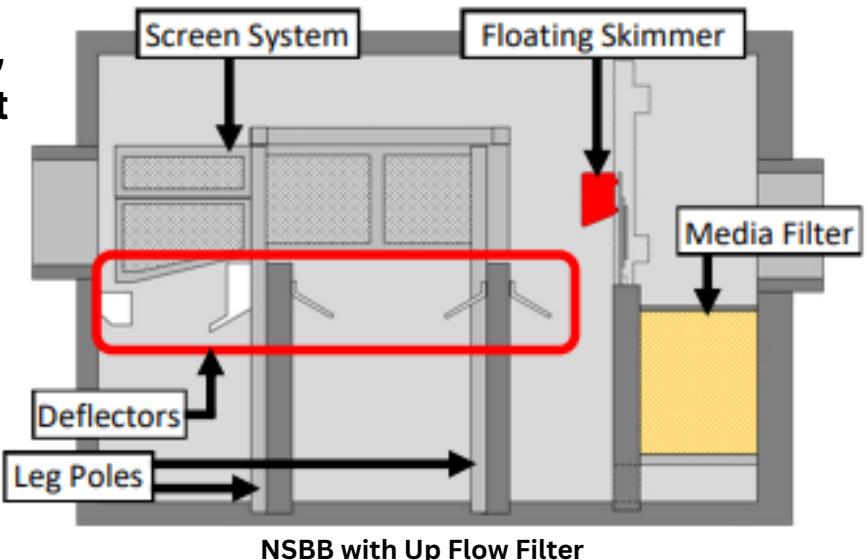


<https://gsiphotosflorida.org/project/kissimmee-lakefront-park-rain-gardens/>

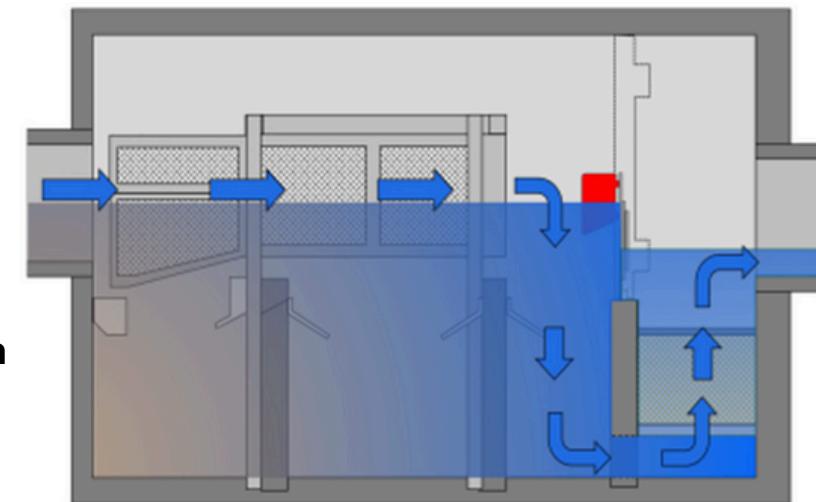
GSI AT KISSIMMEE LAKEFRONT PARK

Nutrient Separating Baffle Box (NSBB) with Up Flow Filter (BAM)

- 8' x 16' NSBB captures, trash, organic debris, and sediment
- Media filter component with Bold & Gold ECT3 reduces dissolved nitrogen and phosphorus



- Total catchment: 2.13 acres
 - Effective area for filter 0.47 acres



- Reductions:
 - NSBB without media
 - 19% TN/16% TP
 - ECT media
 - 45% TN/45% TP
 - Measured project reduction
 - 67% TN/79% TP



Catchment Area



Bold & Gold ECT3 media

SPEAKERS

- **Jose Rodriguez, PE**
 - **Engineering Director**
 - **Barrios Engineering, Orlando, FL**
 - **Jrodriguez@barriosengineering.com**
- **Eric Smith, CNUa**
 - **Geo/Stormwater Specialist**
 - **Ferguson Waterworks, Sanford, FL**
 - **eric.smith@ferguson.com**
- **Jessica Bruso, MS**
 - **Engineered Solutions Specialist**
 - **Ferguson Waterworks, Melbourne, FL**
 - **jessica.bruso@ferguson.com**
- **Nagel Altrui, CFM**
 - **Floodplain Manager**
 - **City of Kissimmee, FL**
 - **NAGEL.ALTRUI@kissimmee.gov**

RESOURCES

- **Kissimmee Lakefront Park**
 - <https://www.kissimmee.gov/Parks-Recreation-Events/Parks-Trails-Public-Lands/Parks/Kissimmee-Lakefront-Park>
- **What is GSI? (FDEP)**
 - <https://gsi.floridadep.gov/gsi-basics/what-is-gsi/>
- **GSI Photo Library (Nature Conservancy)**
 - <https://gsiphotosflorida.org/>
- **Demonstration Bio Media for Ultra-urban Stormwater Treatment**
 - https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/research/reports/fdot-bdk78-977-19-rpt.pdf?sfvrsn=e8fee883_2%20