



Lower Rio Grande Valley Low Impact Development (LID) Implementation and Education

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- Background and Objectives
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 - Amigos del Valle, San Juan
 - Valley Nature Center, Weslaco
 - Indoor Recreation Center, La Feria
 - QAPP
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 District No. 1
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 - New Fire Station, Alton
 - STC

- LID Phase III
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 - Cty of Harlingen
 - City Hall, New Library
- LID Phase IV
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- Interactive Map







- •The Arroyo Colorado has low dissolved oxygen and high bacteria levels in the tidal segment (2201)
- •Does not currently meet the aquatic life use designated by the State of Texas and described in the TCEQ's Surface Water Quality Standards.
- •The Arroyo was first listed on the state's list of impaired waters (the 303(d) List) in 1996.
- •In response to the impairment local efforts developed a watershed protection plan (WPP)









- •The Non Point Source Program (NPS) at TCEQ and the USEPA through a federal program authorized under Section 319 of the Clean Water Act, has allocated funding for the implementation of LID demonstration projects.
- •ISEE at Texas A&M University-Kingsville in coordination with eleven local partners was awarded with \$3.7M in grants in three different grant cycles (FY 2010, FY1011, FY1012 and FY13).







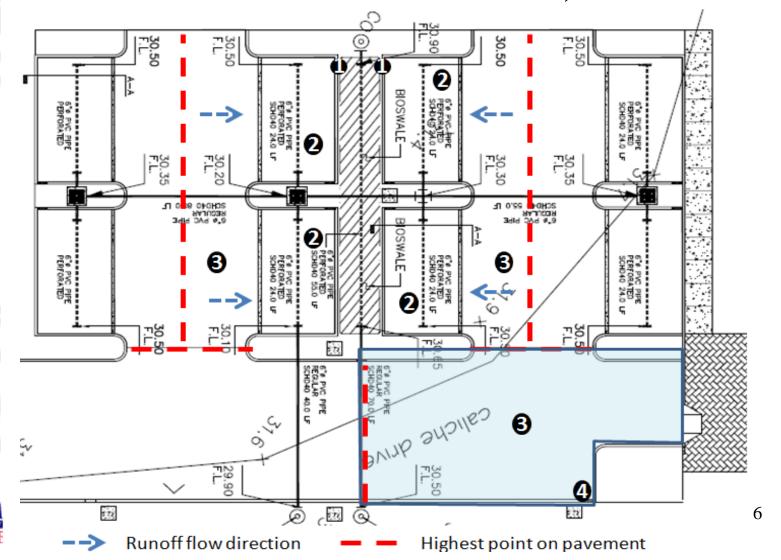


- Design, construct and/or amend facilities with LID features.
- Provide outreach and education to visitors, the community and public and private land development professionals about LID
- Assess the costs, functionality, and administrative elements of LID practices.
- Increase the use of LID practices in land development projects.
- Conduct water quality monitoring to assess the potential environmental impact that these LID features will have on water quality.





LID Phase I: Monte Bella Park, Brownsville





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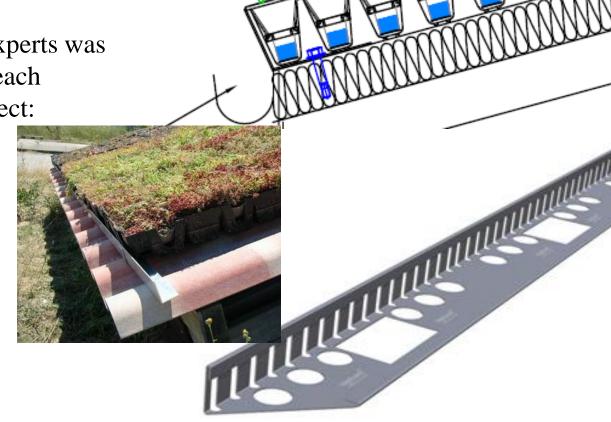


LID Phase I: Amigos del Valle Center, San Juan

•TAMU-Kingsville has developed a green roof system that will meet the constrains of the project.

•A workgroup of experts was formed to address each element of the project:

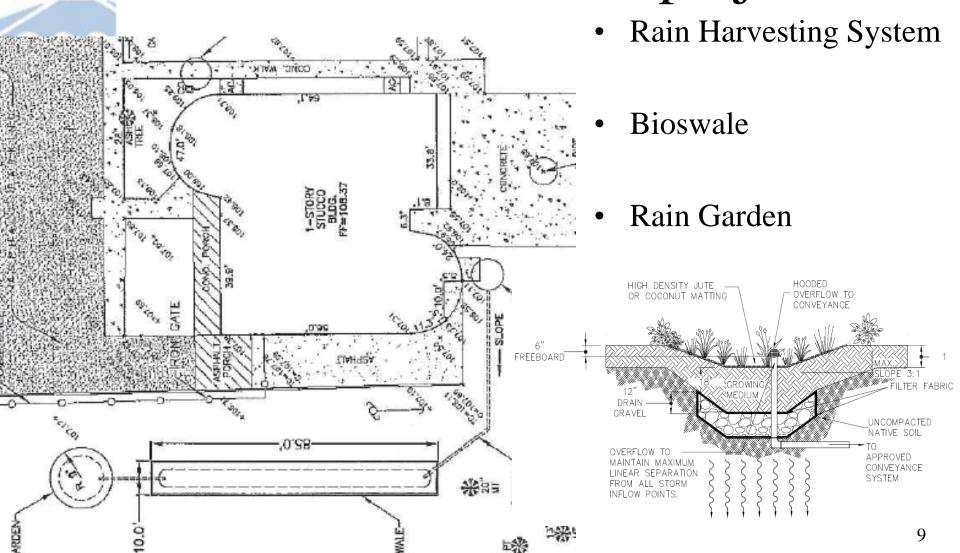
- •USDA
- •TCI roofing
- •TO plastics







Other elements of the project







Stromwater treatment wetland is completed including:

- -Educational signage
- -Biofiltration device
- -Solar pump









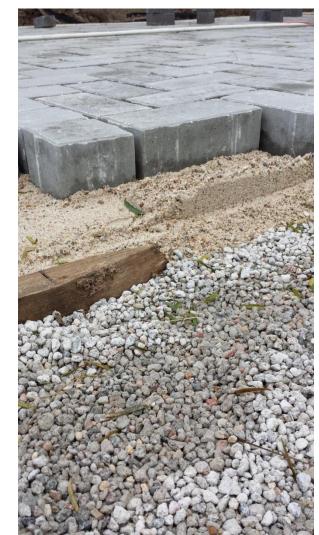


LID Phase I: Valley Nature Center,

Weslaco





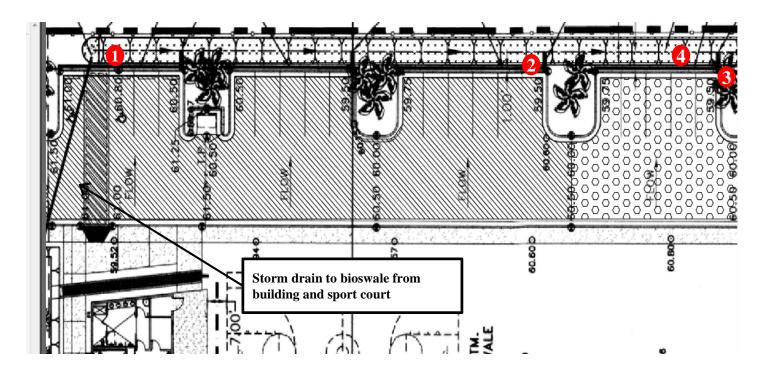








LID Phase I: Indoor Recreation Center, La Feria









- •With initial paver pattern, erosion in the aggregate between the pavers was observed.
- •Aggregate was changed and paver patter was also changed.







Indoor Recreation Center, City of La Feria









The Cameron County Drainage District #1 is transforming the 45-acre tract into an educational public park.

Wetland excavation is at 100%

Parking lot is completed and RWHS design is finished and ready for bidding process

BMPs included in this project: bioretention areas, wetlands for biofiltration, pervious pavement, rainwater harvesting.







LID Phase II: Cameron County Drainage

District #1











The City of Weslaco's proposal seeks to install water allocation cisterns at the public library then recycle this water for use within the landscaping needs of the library.

Design is completed and the project is currently open for bids.

The system was installed by June 2013.







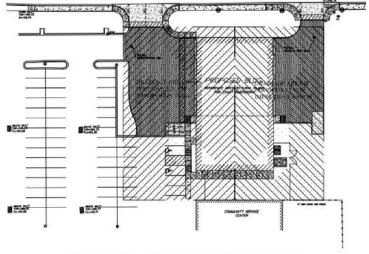


LID Phase II: New Fire Station, Alton

The new fire station will have a permeable paver driveway designed for heavy load applications

Construction started in March 2013

The proposals received for this project were 30% lower than what was initially estimated. A total of \$56,000 are available to implement other projects.



PROPOSED DRAINAGE AREAS FOR NEW ALTON FIRE STATION PROJECT SCALE: N.T.S.







Approved by TCEQ and EPA as an amendment to the LID II contract.

It will be funded with the available resources the City of Alton will not utilize in the Fire Station

Focus on water quality monitoring and BMP performance evaluation





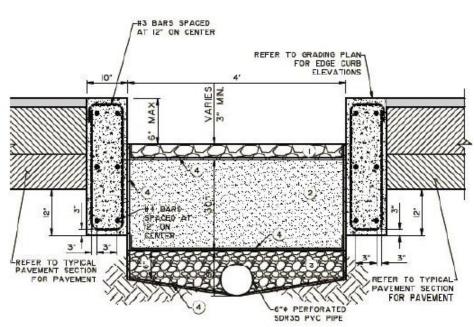




LID Phase II Amendment: South Texas College

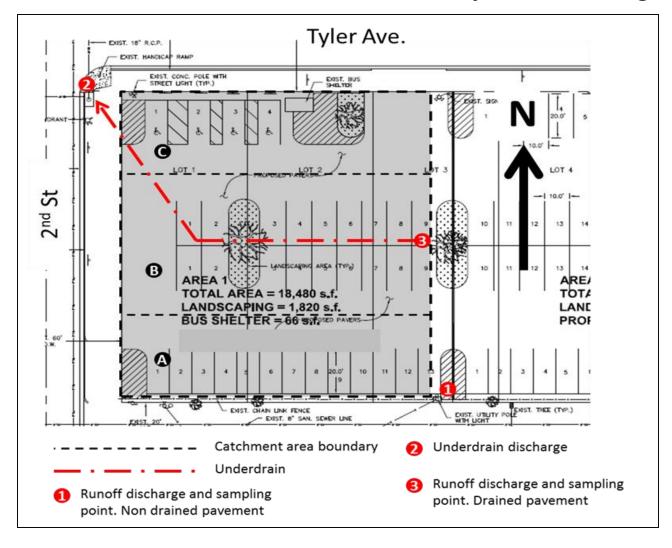








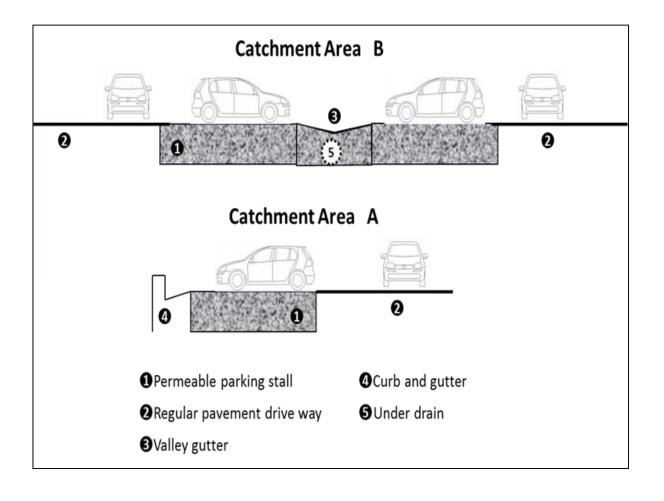
LID Phase II Amendment: City of Harlingen







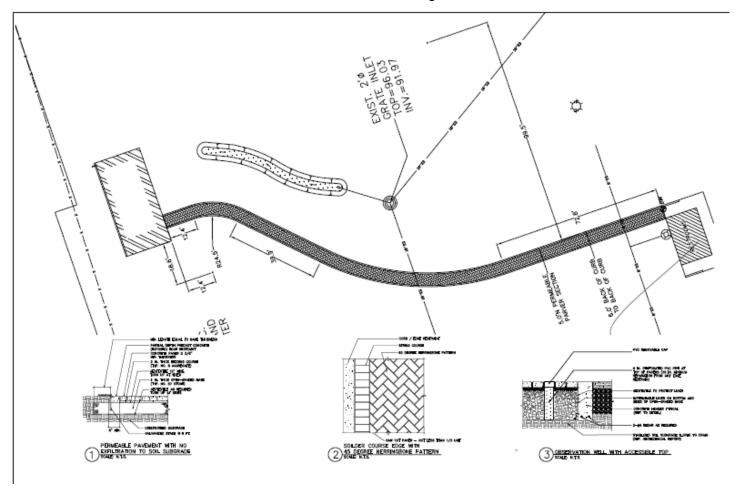








LID Phase III: City of Alamo

















LID Phase IV (FY13)

- -Media campaign (VPEC)
- -Regional Sports Complex LID Environmental Board (City of Alamo)
- -GIS model





Monitoring Equipment

Type of Equipment



ISCO Signature Bubbler flow meter



Rugged TROLL 100

TEXAS A&M

[pressure transducer]





ISCO 674 Rain Gauge



Collection of Samples

- Autosampler-treatment wetland
- Grab samples-permeable pavement and rainwater harvesting system







Flow measurements









Monitoring Sites



Valley Nature Center Treatment Wetland





Valley Nature Center Permeable Pavement







City of La Feria Recreation Center









Layout of equipment



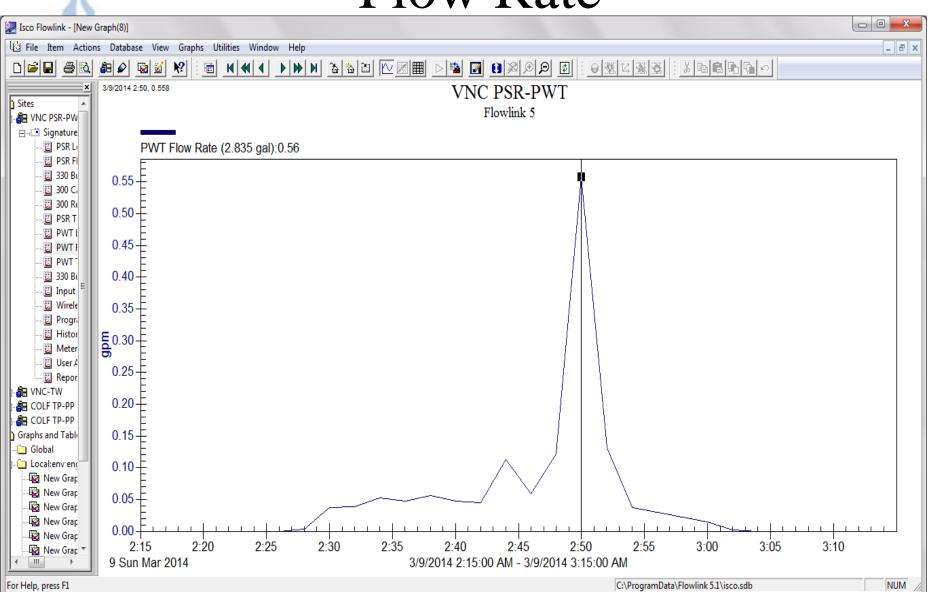




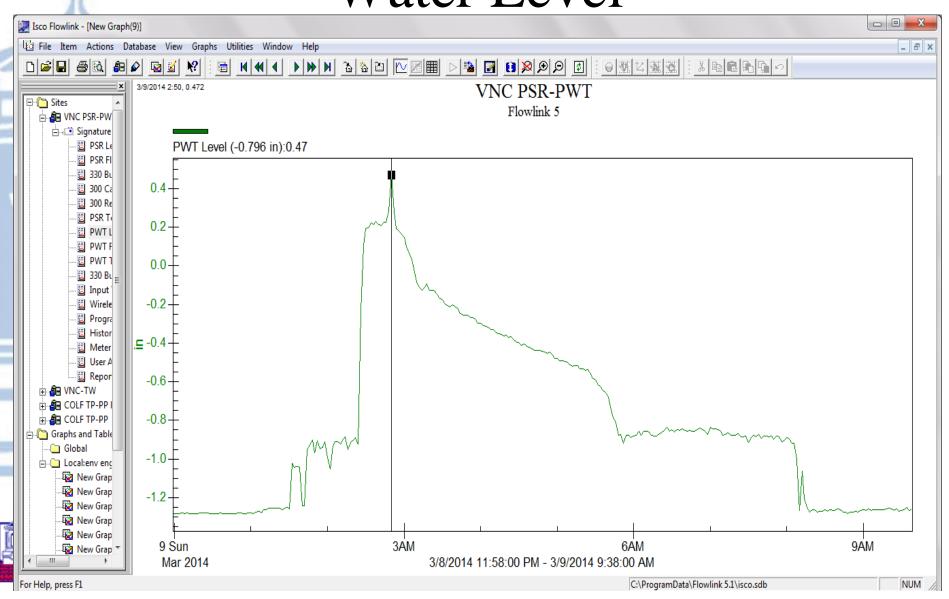


Data

Flow Rate



Water Level





Valley Nature Center Water Quality

BMP	Collection Date	TSS (mg/L)	BOD ₅ (mg/L)	E.Coli (MPN/100ml)
VNC-RHS#1	3/9/14	14.0	9.32	
VNC-PWT	3/9/14	202	25.4	1.0
VNC-PSR	3/9/14	785	19.3	16.1





Training



Training at Valley Nature Center







Training at Valley Nature Center













Interactive Map



http://lidprogram.tamuk.edu/

