

Assessment of LID Handbook Integration into Valley Projects and the Impacts of GI/LID in the Arid Phoenix Metro Region



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ASU Sustainable
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Literature Review

- Bioretention/swales are highest functioning and best investment
- Research is inconclusive on filtration
- Green spaces are vital to environmental health in urban areas
- More trees and native vegetation will help cool urban areas



Study Objectives:

- Interview municipalities and developers
- Understand how communities feel about GI
- Assess the effectiveness and usefulness of the LID Handbook
- Create a database of current GI in the valley

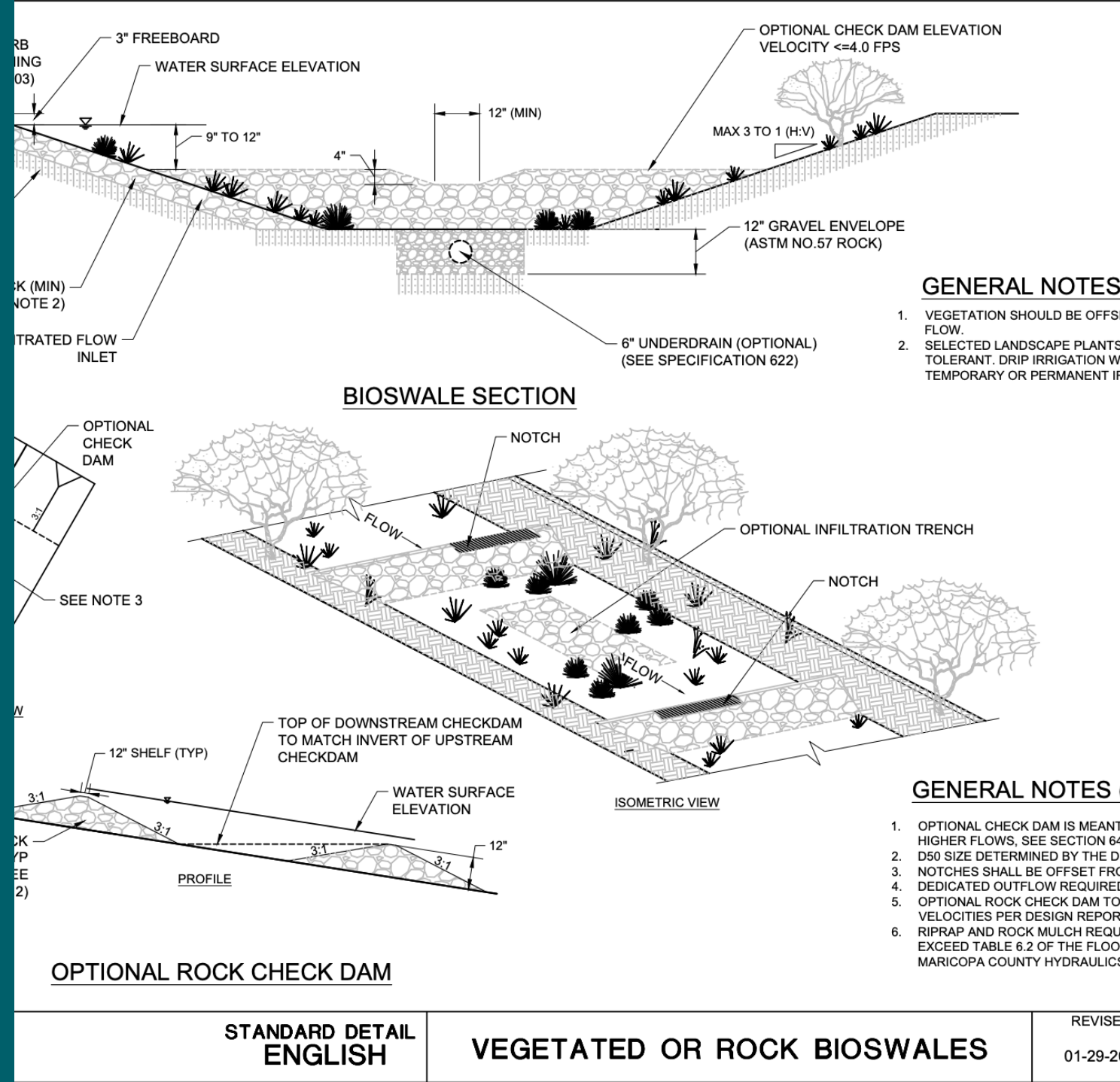


Research / Interview Questions at sites with Green Infrastructure/Low Impact Development (GI/LID)

1. When was GI/LID implemented on your site?
2. Have you noticed any changes due to the LID/GI (ex. More or less flooding, more or less maintenance, etc.)?
3. Have you had any problems with the GI/LID on your site?
4. Would you recommend adding similar GI/LID to other projects?
5. Do you have any mechanisms in place to teach people about your GI/LID (ex. New employee training, maintenance training, informational plaques, etc.)?
6. Do you have any other thoughts about GI/LID?

LID Handbook

- 10 designs with specifications
- Released in 2019
- Collaborative effort of SCN and regional municipalities
- Scottsdale received WIFA grant and lead development





OVERVIEW of municipal interviews

1

MAG Adoption

Standardization will give the green light to private developers to use GI.

2

City Code

Most codes require a variance to implement GI which is a deterrent.

3

No Space

GI requires space which is in short supply in city centers and around the ROW.

4

It's dry here

There is no real argument against using the water we do get as supplemental irrigation.

5

Private interest

Creating interest in the private sector is vital, but there is little encouragement from municipalities.

6

Knowledge

GI is specialized, and bad implementation can make a project ineffective. It's difficult to find the expertise.

Common Themes Amongst Municipalities



All structures need **maintenance** anyway,
GI is just a **different** way of doing it.

1/3 of MAG cities interviewed

Common Themes Amongst Municipalities

Conservation

- Use what little water we get
- Less irrigation & landscape water waste
- Aesthetics
- Co-benefits

ROW is complicated

- Not much space
- Retrofitting is complex
- Liability
- Cities are risk adverse

MAG

- Adopting standard specs
- MAG standards will encourage developers
- Could still be 15-20 years for real change

City Engineers

- Resistant to change
- Risk adverse
- Liability adverse
- Not well educated in environmental benefits

Bioswales and Curbcuts



Glendale Park
and Ride



Mesa Urban
Garden



ASU Downtown
Taylor Mall



Permeable Pavers and Porous Concrete



Glendale Park
and Ride



Taylor Street
ASU



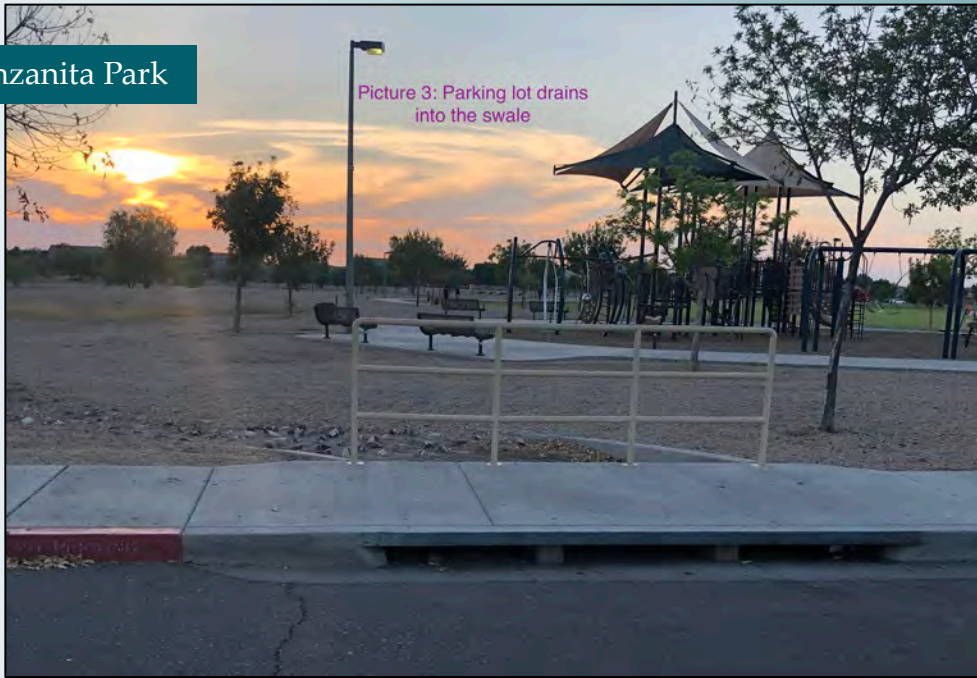
Glendale Park
and Ride



Franciscan
Renewal Center



Manzanita Park



Picture 3: Parking lot drains into the swale

Helios Education Center



Curb Cuts

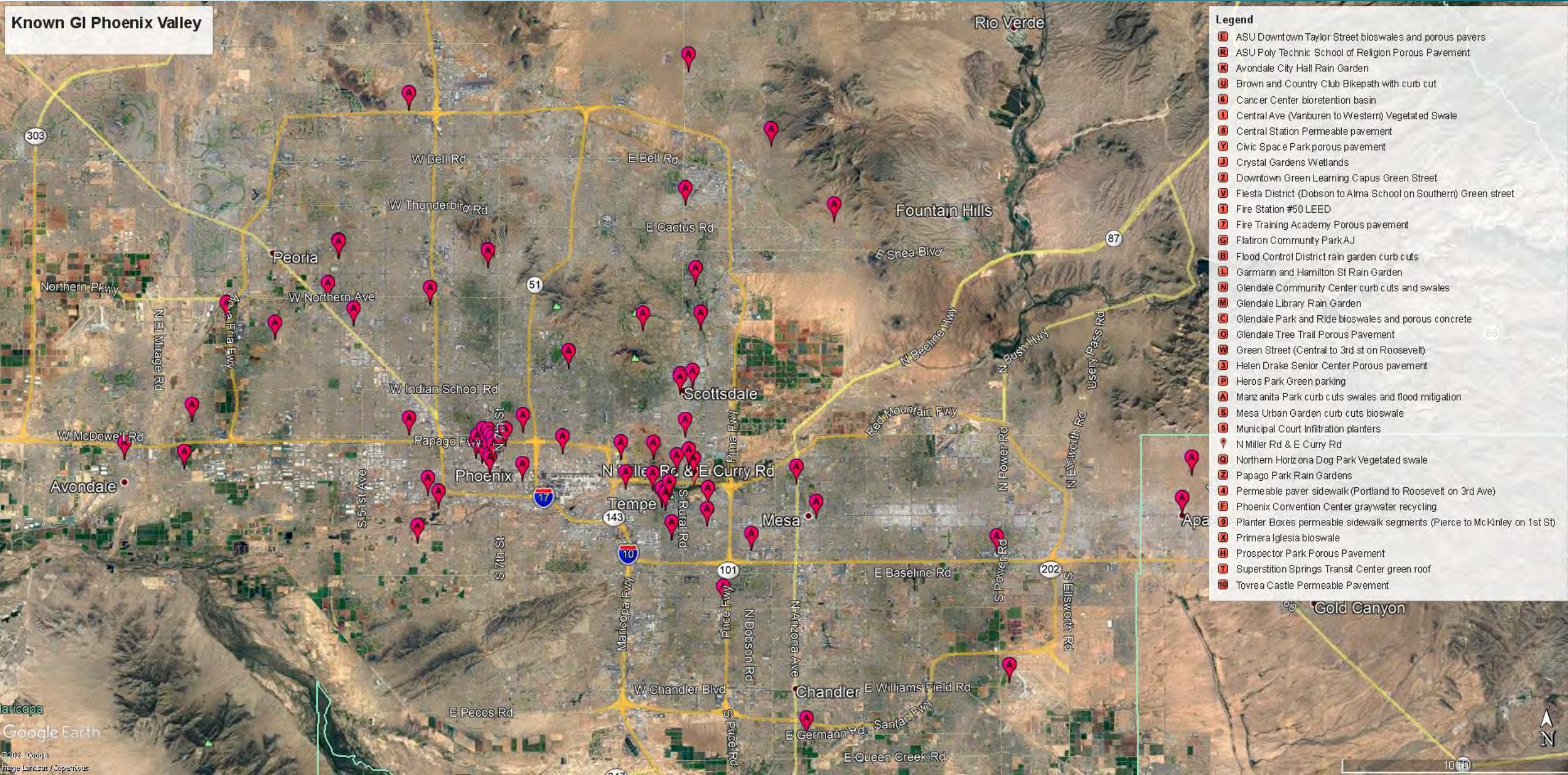
Fiesta Mall Mesa



FCD Campus



Where do we already have GI?



Questions?

Thank you to all participants!

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