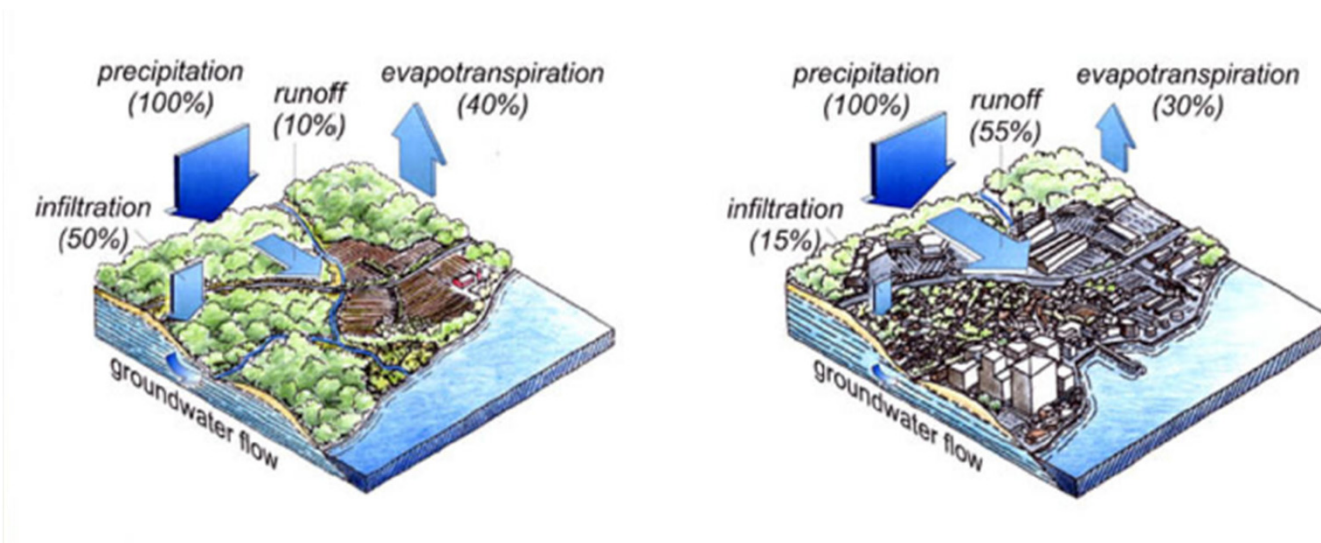




WORKING TOGETHER: TREES AND GREEN STORMWATER INFRASTRUCTURE

A PRESENTATION FOR TREE & SHADE SUBCOMMITTEE AND THE ENVIRONMENTAL QUALITY AND SUSTAINABILITY COMMISSION
JUNE 2019

WHAT IS GREEN INFRASTRUCTURE/LOW IMPACT DEVELOPMENT (GI/LID)?



Courtesy of Mass.gov Smart Growth, Smart Energy Toolkit

Water management approach that protects, restores, or mimics the natural water cycle

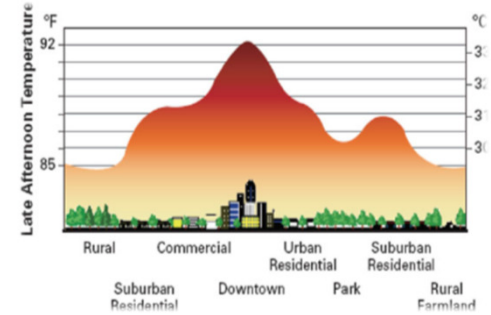
- Manages stormwater where it falls
- Landscape-based practice to help maintain pre-development hydrological conditions

GI/LID EXAMPLES



BENEFITS

- ✓ Urban Heat Island ↓
- ✓ Stormwater Runoff ↓
- ✓ Local Flooding ↓
- ✓ Air Quality ↑
- ✓ Biking/Walking Environment ↑
- ✓ Water Conservation ↑



2018 PHOENIX GI/LID TBL COST-BENEFIT ANALYSIS

1,000 sqft feature type analysis, City of Phoenix (Absolute)

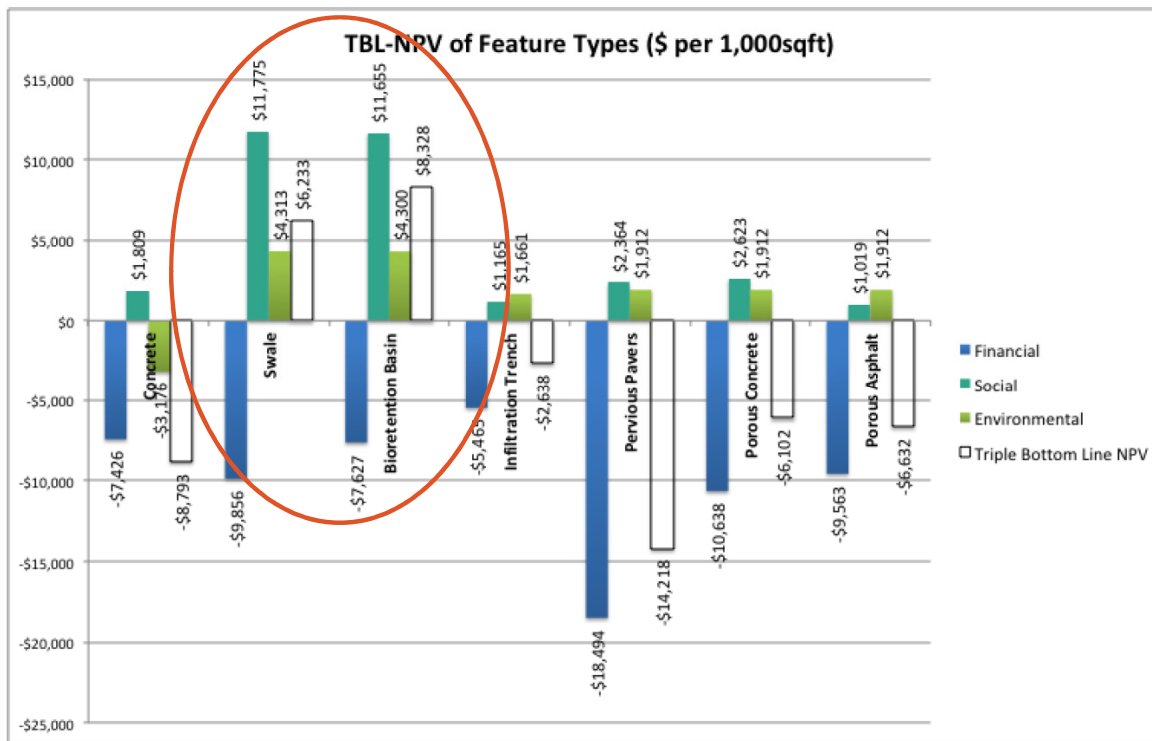


Figure 13: Absolute TBL-NPV Results of Feature Types (\$ per 1,000 sq ft)

2018 PHOENIX GI/LID TBL COST-BENEFIT ANALYSIS

1,000 sqft feature type analysis, City of Phoenix (Relative to Concrete)

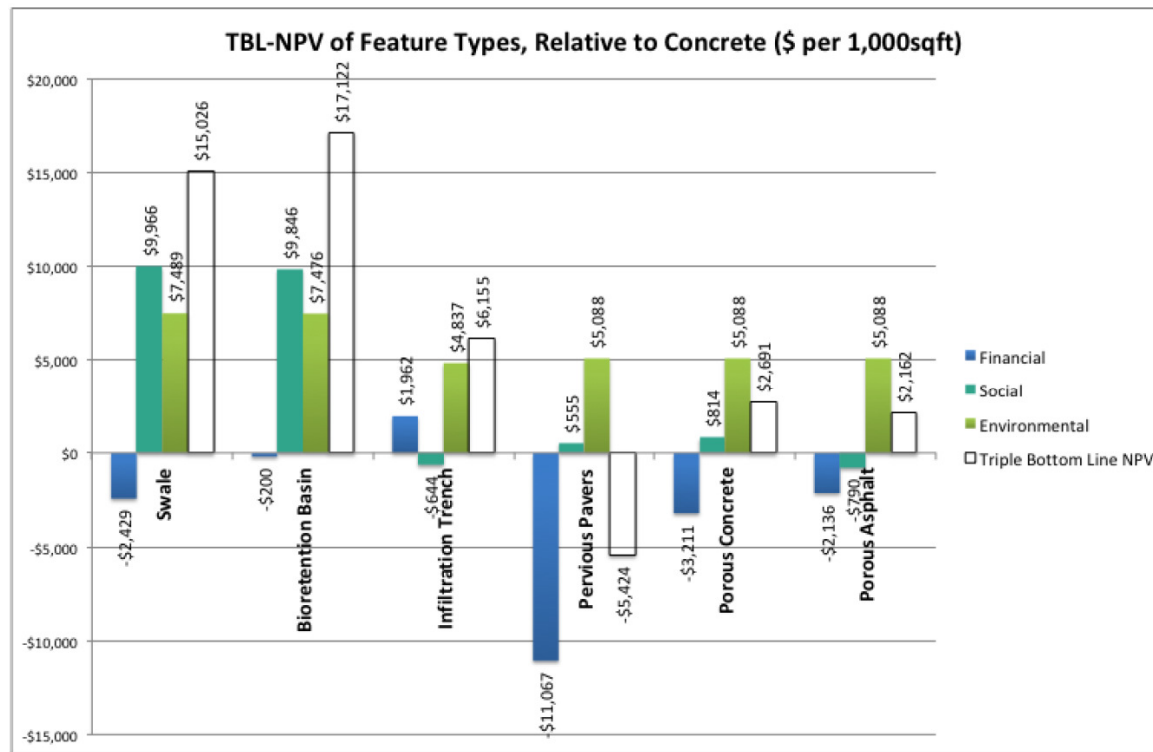


Figure 14: TBL-NPV Results of Feature Types Relative to Concrete (\$ per 1,000 sq ft)

CIVIC SPACE EXAMPLE – POROUS CONCRETE



PRIMERA IGLESIA EXAMPLE



Bioretention Basin with Curb Cuts

- Plant selection
- Supplemental irrigation for establishment
- No long-term irrigation

RIGHT GI/LID, RIGHT PLACE



KEY GI/LID TBL COST-BENEFIT STUDY RECOMMENDATION

- Tree and Shade Masterplan
 - Integrate GI/LID to reduce potable water use in native landscapes

Full TBL CBA at www.phoenix.gov, Departments, Environmental Programs

[https://www.phoenix.gov/oepsite/Documents/City%20of%20Phoenix%20GI%20and%20LID%20TBL-CBA%20Autocase%20Features%20and%20Projects%20Ev
aluation 06-21-2018.pdf](https://www.phoenix.gov/oepsite/Documents/City%20of%20Phoenix%20GI%20and%20LID%20TBL-CBA%20Autocase%20Features%20and%20Projects%20Evaluation%2006-21-2018.pdf)



City of Phoenix
Tree and Shade
Master Plan



An investment strategy for creating a healthier, more livable and prosperous Phoenix

2010

HANDBOOK CONTENTS

Methodology

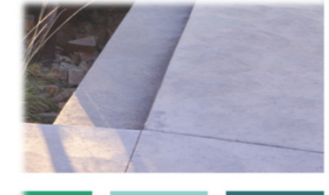
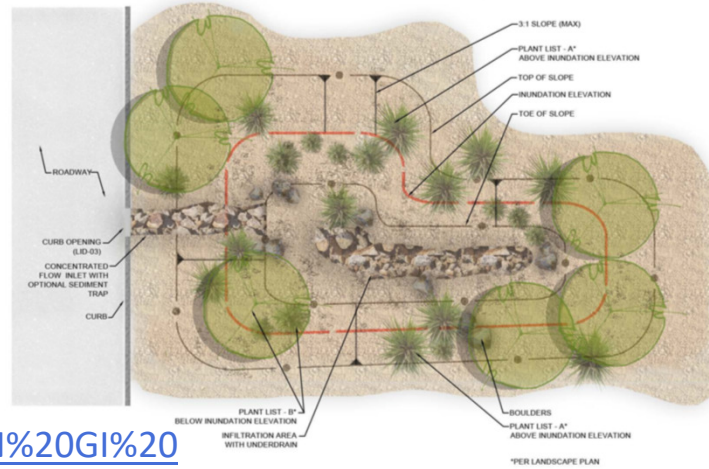
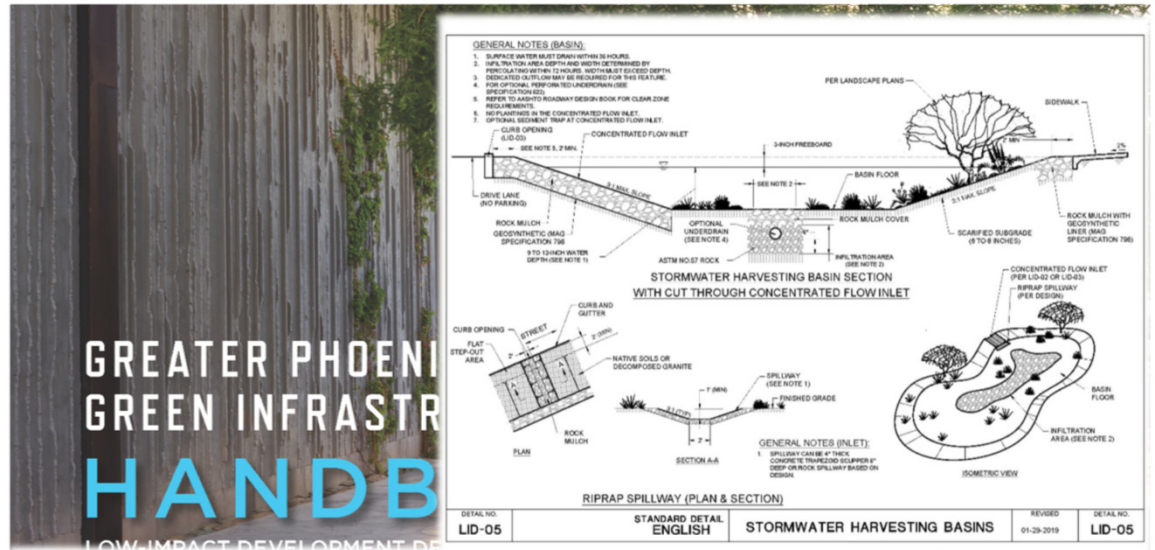
Provides technical standard details and specs for 10 LID features in (MAG) format

1. Permeable pavement
2. Curb openings
3. Curb openings
4. Sediment traps
5. Stormwater harvesting basins
6. Vegetated or rock bioswales
7. Bioretention systems
8. Curb extensions
9. Bioretention planters
10. Domed overflow structures

The handbook also contains

- Landscape details and specifications
- Additional resources

[https://www.phoenix.gov/oepsite/Documents/SCN%20GI%20Handbook January%202019.pdf](https://www.phoenix.gov/oepsite/Documents/SCN%20GI%20Handbook%20January%202019.pdf)



and Member Communities

GI/LID AND TALL POTS – A WIN FOR WATER CONSERVATION AND SHADE

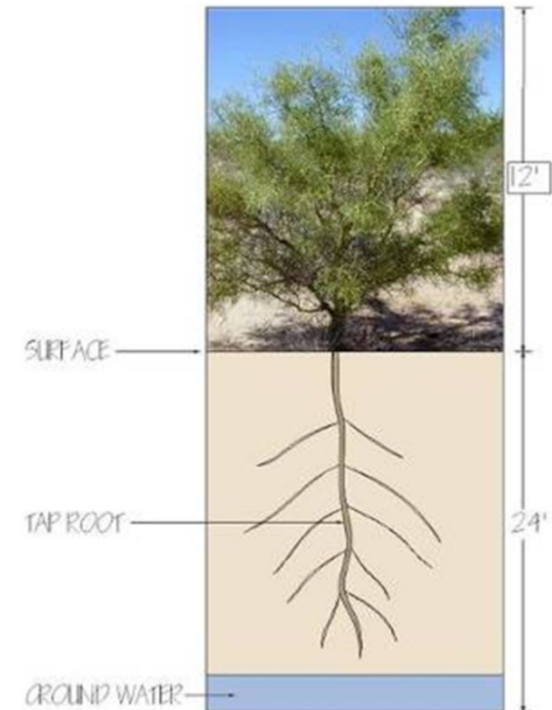


Why it works

- Most desert species have long taproots
- Tall pots mimic these growth characteristics of native desert trees
- Higher 'root to shoot' ratio helps survivability

What are tall pots?

- Grown in a long container (various sizes)
- 30" long; 6" diameter



TALL POT GROWTH

FCDMC Durango Complex - 2007



Benefits

- Don't require supplemental water
- Good survival rates
- Cost-effective

FCDMC Durango Complex - 2015



WORKING TOGETHER: TREES AND GI/LID A WINNING COMBO

QUESTIONS?

