Stormwater Quality Plan

Prevention and Treatment of Non-Point Source Pollutants

Grant Deliverables and Feedback: EPAC
June 1, 2018
A Multi-Benefit, Stormwater Quality Plan using a Green Infrastructure Assessment and Pollution Prevention Outreach
Project funded by an ADEQ 604b Planning Grant for Impaired Water Status of the Santa Cruz River in Pima County
Purpose

Project and program recommendations to address exceedance of recreational standards for *E. coli* (an indicator of pathogens) found in stormwater samples

Timeline

November 2017-June 2018
Laying the Groundwork for Future Opportunities

**Funding for Implementation**
- WIPs, NEMO Plans and 604b planning recommendations eligible for 319h funded projects
- Currently lacking GI assessment
- 318h funds citizen monitoring coordination, signs, restrooms and other on-the-ground GI implementation

**Regional Planning**
- Stormwater Section of PAG’s 208 Regionwide Water Quality Management Plan
- Tucson Conserve 2 Enhance and Trees for Tucson priorities for project implementation funding
Scope of Work

**Prevention:**
Scoop the Poop Outreach

**Treatment:**
Green Infrastructure
Scope of Work

**Prevention:**
Scoop the Poop Outreach

- Inventory available research
- Update Regional Template (materials and messages)
- Partnership Building for Implementation

**Treatment:**
Green Infrastructure Plan

- Vision, Progress, Targets
- GIS Analysis
  - Tool Update
  - Current Conditions
  - Benchmarks
  - Multi-Benefit Priorities
  - Locations for Opportunities
- PAG Policies and Action Plan
Research Inventory Conclusions

- No local genetic studies available
- Other southwestern genetic studies were not all in urban environments (more agriculture and septic)
- The 230,000 dogs in Pima County can produce 63 million pounds of feces each year.

Recommendations

- Dogs are dominant source in other urban regions
- Concerns about horses – Manure management
- Concerns about homeless - Services
- More samples needed
- Conduct local microbial source tracking studies for *E. coli* and/or other pathogens
GI Components

• Summary of regional progress and PAG Policy

• Support with PAG Actions

2017 Resolution to Preserve and Restore Desert Waterways

Green Infrastructure for Regional Vibrancy

Supporting our Heritage of Desert Waters

Pima Association of Governments’ Regional Council 2017 Resolution 5–18–17

This Resolution Made by Pima Association of Governments’ Regional Council on March 26, 2015.
Proposed PAG Action Plan

• Augment PAG Standards, Details and Specifications with regionally consistent GI options

• As updates occur, integrate GI into PAG plans and programs as an acceptable and preferred option

• Coordinate investments in remote sensing data acquisitions for GI uses

• Enhance PAG’s GI Tool to support programs for GI implementation

• Support regional coordination and recommendations
PAG Green Infrastructure Prioritization Tool

New Land Use Land Classification layer (LULC)

Classes
1. Water
2. Trees/Shrubs
3. Irrigated Land
4. Desert Grassland & Scrub
5. Barren/Bedrock
6. Impervious
7. Structures
8. Roads
GI Analysis and Ongoing Dynamic Planning Tool

https://gismaps.pagnet.org/PAG-GIMap

Updates Include

- New LULC (impervious and understory layers)
- New GI demonstration sites layer (C2E, pocket guide, LID Case Studies and full older PAG inventory)
- More ADEQ water quality monitoring sites
- New impaired streams layer
- Guidance:
  - Info Sheet
  - Tutorial
  - Data Sources
  - Map Legend
Green Infrastructure Goals and Priority Locations

Multi-benefit GIS analysis

Canopy:
- Minimally maintain 7% Average,
- Realistic 15% goal for desert city, >25% in mitigation areas &
- Access to Vegetated Space

- Upstream of flood concerns
- Proximity to shallow groundwater
- Watercourse Restoration/Preservation
- Impervious Hotspots

- Above Average Heat & Vulnerable Demographics

- Bus stops, bikeways, schools, parks
- Pedestrian Activity Areas
Green Infrastructure Goals and Priority Locations

Multi-benefit GIS analysis

Select Areas with >3 Benefits
# Summary of GI Plan Components

<table>
<thead>
<tr>
<th>Plan Element</th>
<th>Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current Conditions</strong></td>
<td>✓ Water quality sites&lt;br&gt; ✓ Current canopy cover&lt;br&gt; ❑ Flow Accumulation Analysis&lt;br&gt; ❑ Stormdrains Layer</td>
</tr>
<tr>
<td><strong>Vision and Regional Progress Summary</strong></td>
<td>✓ LIDWG Vision</td>
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<tr>
<td><strong>Vision, Target Conditions, Benchmarks</strong></td>
<td>✓ Canopy cover goal&lt;br&gt; ✓ Desert canopy diameter and height&lt;br&gt; ✓ # of years to reach goal&lt;br&gt; ✓ Stormwater harvesting potential study&lt;br&gt; ❑ National Stormwater Management Calculator</td>
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<tr>
<td><strong>Adoptable Policy &amp; PAG Action Plan</strong></td>
<td></td>
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<tr>
<td><strong>Regional Priorities and Opportunities</strong></td>
<td>✓ Marana MS4, Pima County MS4, City of Tucson Planning</td>
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Prevention: Scoop the Poop Outreach
Update messages and materials

Treatment: Green Infrastructure
Outreach messaging, imagery and features

Testing New Community Engagement:

- Sahuarita SciTech Festival
  - Approx. 1500 students and teachers in attendance
- Loop Completion Celebration at Brandi Fenton Park
  - Adults and children
- Presentations to SWMWG, LIDWG, WPS & EPAC
  - Professional audiences

CONCLUSIONS: Valuable to clarify...

- Not caused by effluent
- Indicator of fecal contamination
- Responsible for impact of pets
Outreach messaging, imagery and features

- More recreation-oriented title
- New proper disposal contacts
- Now features river park and Loop
- New E. Coli messages
- Clarified image, including people
Watershed Map Side

New sites
GI
- C2E
- LID Case Studies
- ROI Studies
- Ordinance Compliance

Heritage (new category)
- CCC historic efforts
- DeAnza Trailhead

Priorities for new sites
- Signage and online info
- Pet waste bags and trash

More photos
- Historic
- Fishing
- Birding
- Dog walking
- Improved greenways
Previous Partnerships

- MS4s
- Watershed Management Group
- Tucson Clean & Beautiful/Trees for Tucson
- Arizona Project WET
- Poo Guys
- The Loop and Dog Parks

Building Partnerships

- Marana and Pima Animal Care Center: Scoop the Poop stickers
- UA Cooperative Extension: 319 program contacts
- American Rivers: Recommended Atlanta GI Action Plan format
- Marana and Pima County Parks: Stickers for the Loop
- Santa Cruz River Symposium partners: map use
NEXT STEPS: How you can help

• Review draft report and pocket guide
• Incorporate message into your programs and let us know
  ➢ Water quality adds motivational incentive to Scoop the Poop
  ➢ Repeated messaging aids recognition
  ➢ People like to know they can make a difference
• Spanish language outreach
• Funding partnerships, pooled resources
• Getting recommendations out to new monitoring partners, including citizen science or researchers
• NRPR volunteer bag project
• Feedback on GI Prioritization Tool
Any Questions?

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