Community Acceptance of Stormwater BMPs
Kansas City Water Services

Water

Wastewater

Stormwater
Water Service’s Green Infrastructure

- In Design: 15
- In Construction: 4
- Built: 26

45 Projects

March 4, 2014
Topics

Psychology Behind BMP Acceptance

Beauty & BMPs

Education

Community Involvement

Lessons Learned from the Target Green Project

March 4, 2014
Building BMP Acceptance

Avoiding THIS

Ugly
Weed Patch
Burden
Messy
Hole in the Ground

Achieving THIS

Restorative
Healthy
Beautiful
Functional
Asset

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Context is Key

One size does not fit all

What BMP is appropriate for one site may not fit in another

BMPs not suited to context or a site can be highly susceptible to rejection by owners or the public
The theory:
If the needs at the base of the triangle aren’t met, the needs further up on the triangle are very difficult to achieve.

Maslow’s Hierarchy of Human Needs
1943

- **Physiological needs:** food, water, warmth, rest
- **Safety needs:** security, safety
- **Belongingness and love needs:** intimate relationships, friends
- **Esteem needs:** prestige and feeling of accomplishment
- **Self-actualization:** achieving one’s full potential, including creative activities

Self-fulfillment needs

Psychological needs

Basic needs
Building BMP Acceptance

Hierarchy of needs – people are different and priorities vary

**Basic Needs**

1. Physiological
2. Safety

**Psychological Needs**

3. Belonging
4. Esteem

**Self-fulfillment Needs**

5. Self-Actualization

Photo: US Dept. Health & Human Services
Basic Needs

1st - Physiological (food, water, warmth, rest)

- Avoid interrupting the daily routine
- Explain reasons for inconveniences if they are necessary

2nd – Safety (security of body, resources, property)

- Explain financial arrangements and costs
- Prevent mosquitoes
- Educate about wildlife concerns
- Maintain clear vehicular sight distances and pedestrian visibility, where applicable
- Provide safety cones or other warning devices for temporary hazards
- Clearly define boundaries and responsibilities
Psychological Needs

3rd - Belonging (relationships)

- Bring a little piece of nature into people’s lives
- Educate through fun outreach activities and signage
- Promote neighborhood interactions

4th - Esteem (prestige, feeling of accomplishment)

- Make the BMPs beautiful
- Inspire pride
- Help people get involved
Self-fulfillment Needs

5th - Self-Actualization (morality, creativity, problem solving)

- Ask for input and ideas
- Listen
- Take action
- Evaluate and reflect

Photo: Shockey Consulting Services, llc

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It’s not easy

There will always be some people that aren’t on board.

Manage concerns case by case and don’t get discouraged!

The loudest person doesn’t necessarily represent the majority.
Beauty & BMPs

Beauty is subjective.

Everyone has their own definition of “beautiful.”

Balance wildness with artfulness, in varying degrees, depending on context.

Here are a few tips that can help make stormwater BMPs appeal to the maximum quantity of people in the urban and suburban context.

“Form follows function - that has been misunderstood. Form and function should be one, joined in a spiritual union.”
-Frank Lloyd Wright

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Tip: Clean Edges

Avoid having plants flop into walks or roadways.

- Short Hedges
- Small Stone Walls
- Decorative Rock
- Sod “Filter Strip”
Tip: Hardscape

Hardscape features make BMPs look intentional and tie them to the greater landscape.
Tip: Hardscape

Photo at right: Vireo

Photo: ParioPlan
Tip: Geometry

Geometric “bones” lend structure to BMPs and can enhance sense of place.

Photo: Nevue Ngan Associates

Photo: URS; Nevue Ngan Associates Project

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Tip: Geometry

Classic design theory

Arcs, straight lines, geometric shapes, dramatic curves, golden ratio.

Form and function united.

If you aren’t a designer, collaborate!

Photo: Human Nature, Inc.
Tip: Art

Art in BMPs can enhance community identity.

Work with a local artist, welder, stone mason, or craftsperson to include artistic features.
Tip: Plant Selections

Some traditional ornamental plants, strategically used, can help people initially feel comfortable with BMPs.

Ease people into it – then educate why the other plants that may look “wilder” are so important.
Tip: Plant Selections

Use classic landscape design principles: Form, texture, color, pattern, repetition, etc.

The complexity of your plantings should be tempered by maintenance skills and budget.

Make sure to have native plants in the “working” part of the BMP.

A rule of thumb: 75% native minimum, up to 25% ornamental.
Tip: Water Features

The sound of flowing water can be soothing and most people like to watch waterfalls, fountains, and streams.

Photo: Human Nature, Inc.
Photo: penick.com
Tip: Water Features

Add water features that come to life when it rains or utilize recirculating solar pumps.
Tip: Water Features

Photo: D. Dods

Photo: Greenplanetethics.com

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BMP Education
BMP Education is Integral to Acceptance

“In the end we will conserve only what we love. We will love only what we understand. We will understand only what we are taught.” – Baba Dioum
Building BMP Acceptance

Avoiding THIS

Means Teaching THIS

Achieving THIS

- Ugly Weed Patch Burden Hole in the Ground
- Native plants Natural Systems Stormwater Runoff Water Quality
- Restorative Functional Beautiful Asset

Not just WHAT you are doing, but WHY you are doing it

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Education and Outreach

Already a component of our MS4 Permit

Added as a component of the Overflow Control Plan

• Inform people of the problem and their role in the solution
• Update citizens on proposed project designs, schedules, and progress towards completion
• Encourage active participation
Utility bill inserts are just the beginning...

The Cone of Learning

After 2 weeks, we tend to remember...

- 10% of what we READ
- 20% of what we HEAR
- 30% of what we SEE
- 50% of what we SEE & HEAR
- 70% of what we SAY
- 90% of what we SAY & DO

Source: Edgar Dale (1969)
The Journey of Stormwater: KC to the Sea

*Educating our future rate payers*

Curriculum targets 4\textsuperscript{th} and 5\textsuperscript{th} grades

Aligned to Missouri Common Core Standards

Project based learning

Goal: Taught in elementary schools within Kansas City limits

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The Journey of Stormwater: KC to the Sea

Requires active student participation

First day taught by outside resource

Day Three: Stormwater BMPs

Day Five: Getting the Message to KC

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The Journey of Stormwater: KC to the Sea

Save Our Rivers!

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Case Study: Target Green

- Pilot phase of a larger green infrastructure project
- Part of the Overflow Control Program
- Test green infrastructure to reduce CSOs by reducing stormwater flows to sewers
- 135 vegetated BMPs placed in the right-of-way
- Older residential neighborhood

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Case Study: Target Green

- 1,100 Linear Feet Permeable Pavers
- 4,300 Linear Feet Porous Sidewalk
- 67 Rain Gardens
- 2 Cascade Rain Gardens
- 28 Curb Extension Rain Gardens
- 36 Bioretention Rain Gardens
Target Green: Public Outreach

Extensive outreach efforts within the affected neighborhood

- Street meetings
- Pancake breakfasts
- Door to door outreach
- Rain barrel workshops
- Mailers
- Project signage

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We came to talk about a Green Infrastructure Project...

Residents wanted to talk about:

• Curbs
• Sidewalks
• Traffic speed
• Trash collection
• Snow removal
• Neighborhood safety
• Uses for blighted properties

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Input Directly Impacted Design

Allowed for triple bottom line benefits

Created neighborhood “Buy In”
Target Green Lessons Learned Meeting

• Let them know what the City learned from the project

• Outlined 3-year maintenance plan

• Interactive survey with residents
Target Green Lessons Learned Meeting

Resident feedback included:

- Have a point of contact throughout construction
- Let residents provide more input
- Follow up with effectiveness of improvements
- Supply information in writing so we can help spread the word
- Residents understood the importance of the project

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Outreach Going Forward - Design

• Larger BMPs in public space for a sense of community and triple bottom line benefits
• Renderings should reflect reality
• Allow meaningful resident input throughout
• Share how resident input will be incorporated
• Provide realistic options
Outreach Going Forward - Construction

• Offer a hotline or dedicated point of contact for construction issues
• Have a presence on the construction site throughout the process
• Complete the picture
• Stay communicative
Outreach Going Forward - Maintenance

- Define levels of service early in the maintenance process
- Continue to introduce the project
- Education before enforcement
- Stay communicative