

Designing Sustainable Splash Pads

*FRPA Presentation Summary & Guide
August 28, 2012*

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LA CES

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Learning Objectives

- Identify the factors influencing the overall sustainability of a splash pad installation
- Learn how to assess sustainability goals and select the appropriate water management system
- Learn how to integrate the capture and repurpose system in your design

Course Content

- Setting the Stage
 - Industry trends
 - Top priorities of city councils
- Impact of splash pads
- Designing sustainable splash pads – a balancing act
 - Water Management Systems
 - Others influencing factors
- Case Studies

Popularity of Splash Pads

- *“In North America, Splash pads have been at the top of the list for planned additions at facilities of all kinds for several years running.”*
- *“They also are the most commonly planned addition among municipal parks today”*







Trends

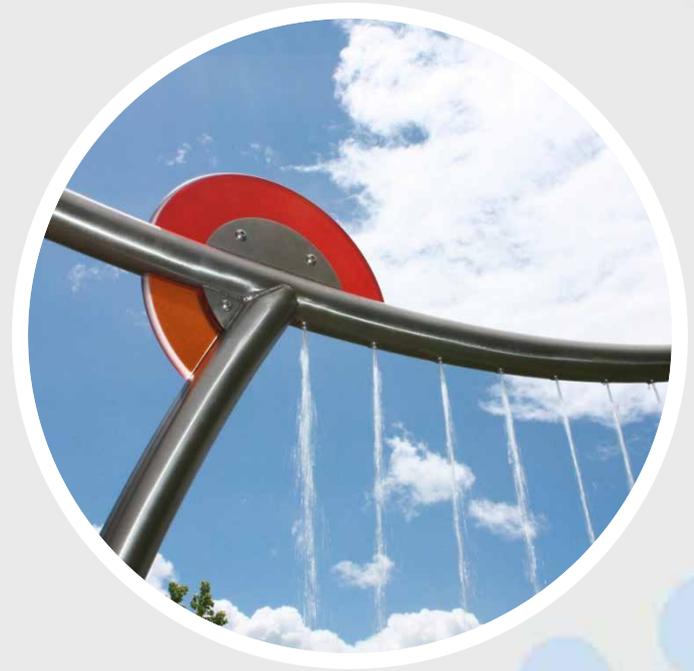
- Splash pads continue to grow in popularity
- Splash pads are a fundamental amenity in park development projects
- Cities have adopted splash pads into their park & recreation programs
- Increasing number multi-splash pad communities
- Communities leverage to promote healthy lifestyle

Sustainable Design

Design that complies with the principles of ecological, social, and economic needs of today and future generations.

Impact of Splash Pads

- Materials
- Water usage
- Wastewater creation
- Energy
- Maintenance
- Manufacturing
- Land use/development
- Creating hardscapes



Sustainable Design Practices

Product Materials

- Select materials that
 - Contain a high recycled content
 - Are recyclable
 - Have a long life cycle
 - Require low maintenance
- Stainless steel & brass
 - Corrosion resistance, strength, UV resistance, 80% recycled material
 - Vandal-resistant
- Recycled polymers



Sustainable Design Practices

Water Management Systems

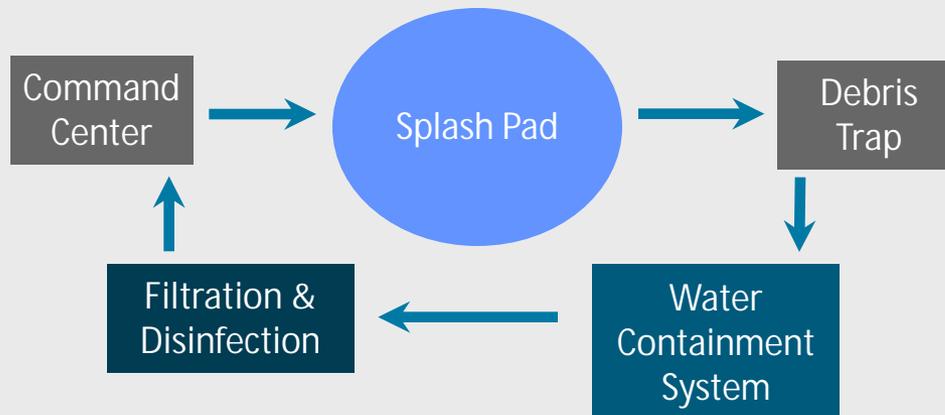
Splash Pad Water Management

- Water efficiency
- Wastewater creation
- Energy efficiency
- Maintenance
- Chemical consumption

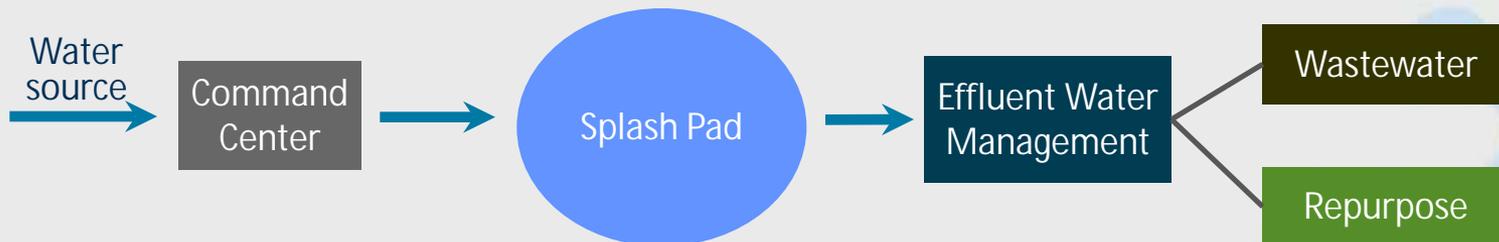
Sustainable Design Practices

Water Management Systems

Recirculation



Flow-Through



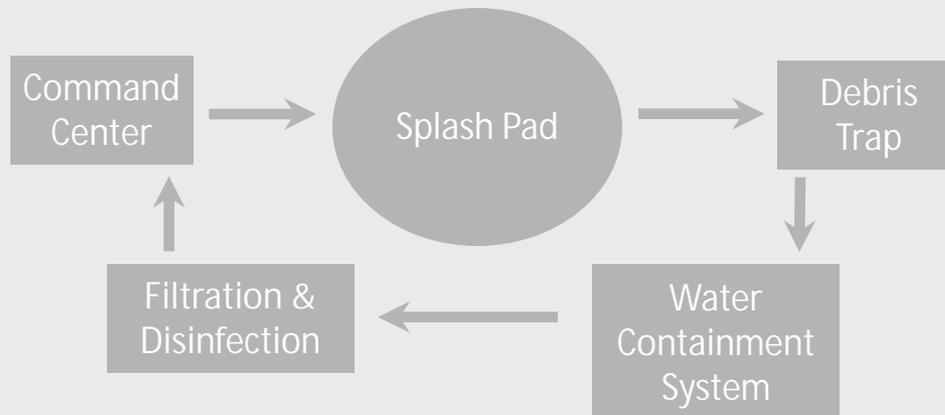
Recirculating Splash Pad Sustainable Design Tips

- Water
 - Recirculated
- Wastewater
 - Rainwater diverter
 - Consider backwashing to percolation system
- Energy
 - Variable frequency driven pumps
 - Optimize pump sizing – use spray sequencing and product selection
 - On-demand automation
- Chemical and Maintenance
 - Reduce debris (eliminate sources near the play area and provide designated entrances)
 - Incorporate a debris control system

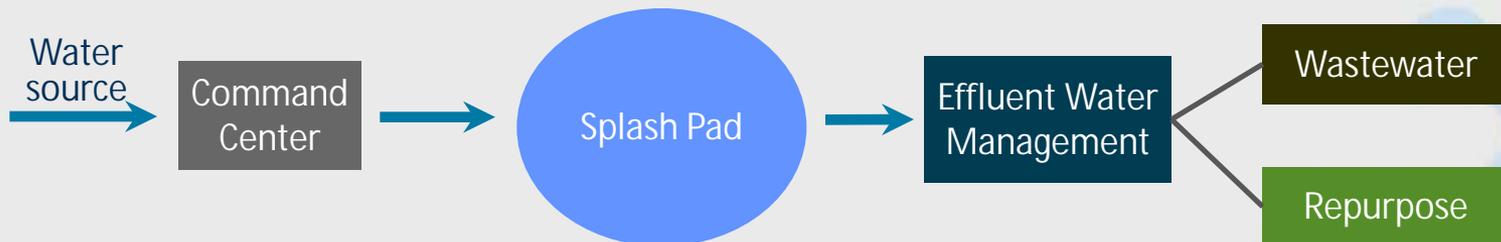
Sustainable Design Practices

Water Management Systems

Recirculation



Flow-Through



Flow-through Splash Pad Sustainable Design Tips

- Water
 - Automation – on demand + spray sequencing
 - High efficiency nozzles
 - Proper product selection
- Energy
 - On-demand activation
 - Most flow-through splash pads require very little energy
- Maintenance
 - Durable materials
 - Reliable water management systems
- Wastewater
 - Rainwater diverter
 - Consider alternatives for effluent water management

Innovations in Water Management

- Sustainability is in higher demand
- Technology and research have given rise to next generation of water management systems
- Repurpose water for irrigation, percolation, replenishment

Governance

- Environmental Protection (EPA)
- Environment Canada
- State Health Departments
- Building Codes

Advantages of Repurposing Systems

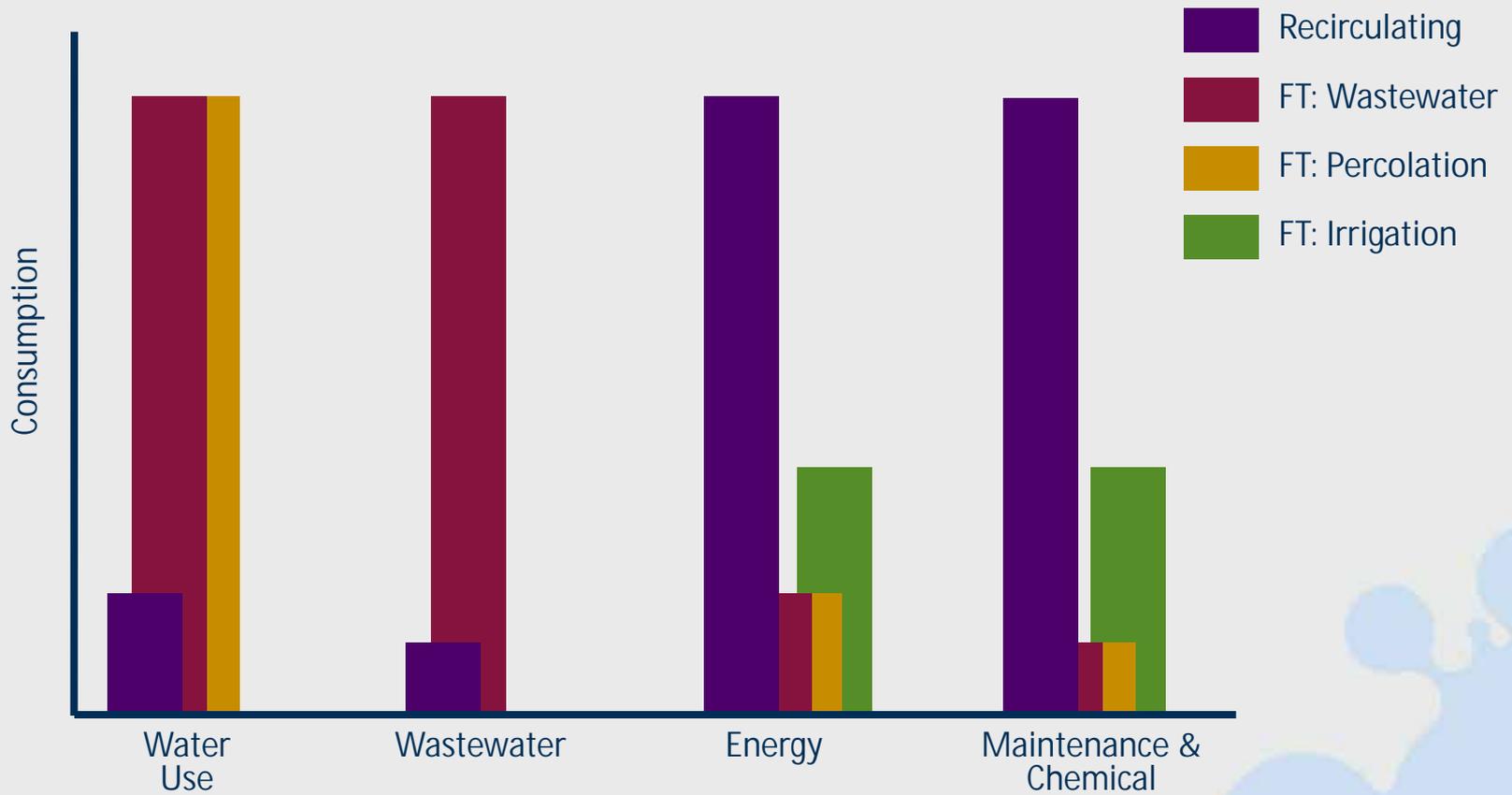
Environmental

- Water is re-used
- Water is conserved and ultimately return to source
- No chemical required
- Low energy consumption

Economical

- Water is repurposed for other municipal uses
- Water does not enter the sanitary system
- Low maintenance cost
- Low operating cost

Water Management Systems Recap



Case Studies

Percolation

- Mill Lake - Abbotsford, BC
- Pumps water from the underground aquifer and sprays to splash pad
- Water then percolates back through the soils, acting as a natural bio-filter into the aquifer



Cases Studies

Surface irrigation

- Lost Hills Park – County of Kern, CA
- A reservoir captures 15,000 gallons per day which will repurpose to irrigate the turf



Cases Studies

Sub-Surface irrigation

- Dos Lagos Shopping Center - Corona, CA
- With a capture & repurpose 6,000 gallon reservoir, water is used to subsurface irrigate all their plants and trees



Potential LEED Credits

- Water-efficient landscaping
 - Wastewater recovery for irrigation
 - Rainwater collection for irrigation
- Innovative wastewater technologies
 - Reducing potable water to sewage conveyance
 - Replenishing aquifer
- Recirculating water

Questions?

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