City of Franklin

Integrated Water Resources Plan

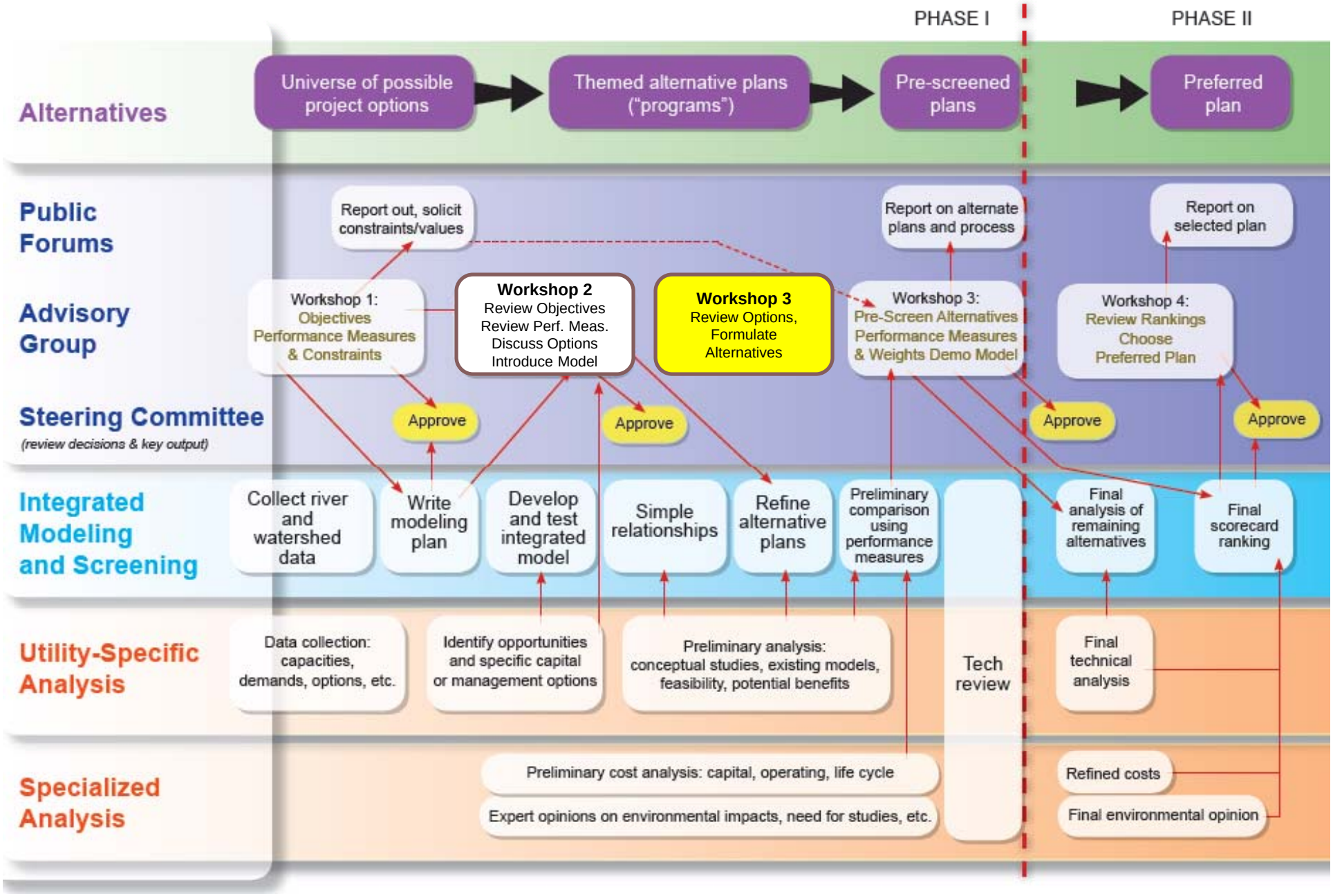
July 12, 2010

Public Forum

Meeting Agenda
6:30 PM

- Review of Overall IWRP Process
- Review of Objectives
- Development of Options
- Discussion of Performance Measures
- Alternatives Formulation and Analysis Process
- Computer Model Demonstration

Franklin IWRP Work Plan



Stakeholders Represent broad interests of Franklin and Beyond

HISTORIC FRANKLIN TENNESSEE

Cumberland River Compact

TDOT Go.

MALLORY VALLEY UTILITY DISTRICT

WILLIAMSON COUNTY TENNESSEE THE GREAT SEAL

TENNESSEE DEPARTMENT OF AGRICULTURE

TENNESSEE WILDLIFE RESOURCES AGENCY

Milcrofton UTILITY DISTRICT

THOMPSON'S STATION TENNESSEE

HARPETH RIVER WATERSHED ASSOCIATION

HVUD HARPETH VALLEY UTILITIES DISTRICT

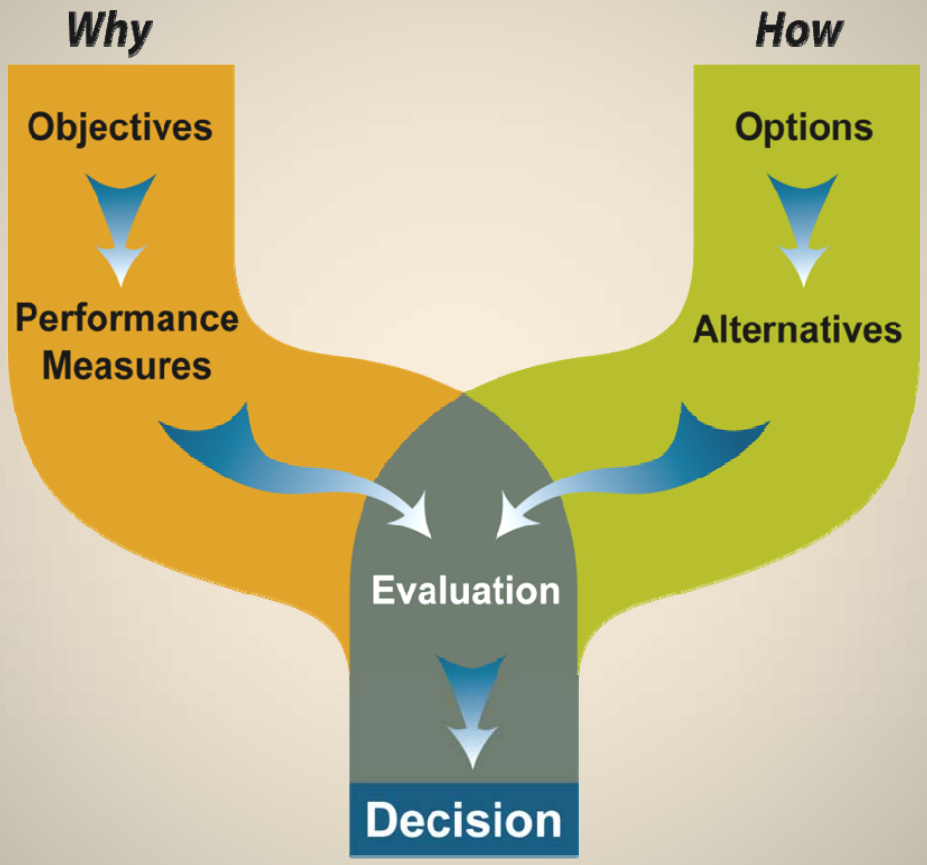
USGS science for a changing world

HBTS UTILITY DISTRICT

DEPARTMENT OF ENVIRONMENT & CONSERVATION

Fundamental IWRP Concept

The most important thing to remember!



Blending the two tracks of water resource planning enables us to move from technical needs to "interest-based" solutions.

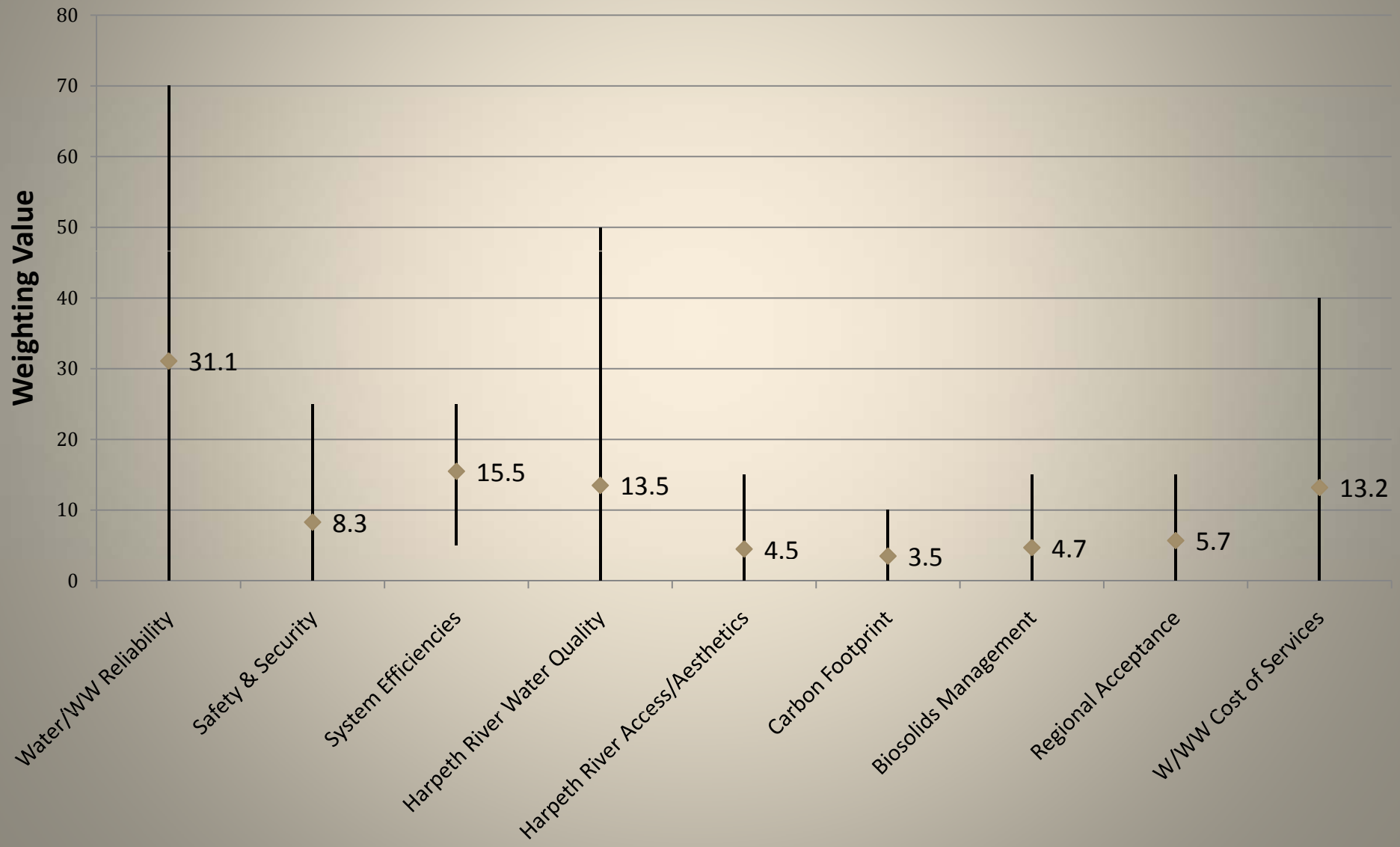
Review of Terminology

Objectives	**Defines the major goals of the IWRP, in broad and understandable terms**
Performance Measures	**The specific metrics that indicate whether or not objectives are being achieved**
Options	**Individual projects that will be assembled into comprehensive alternatives**
Alternatives	**Packages of individual projects that are designed to meet objectives**

Objectives

1. Meet current and future demands for water and wastewater reliably
2. Provide safety and security of water resources systems
3. Maximize efficiency of water use and value of water resources
4. Improve water quality and ecological health of Harpeth River and watershed
5. Provide improved access and aesthetics of Harpeth River
6. Minimize carbon footprint of water resources operations
7. Achieve sustainable biosolids management
8. Achieve regional acceptance
9. Provide excellent level of water/wastewater utility services at reasonable cost

Summary of Objective Weighting



Performance Measures

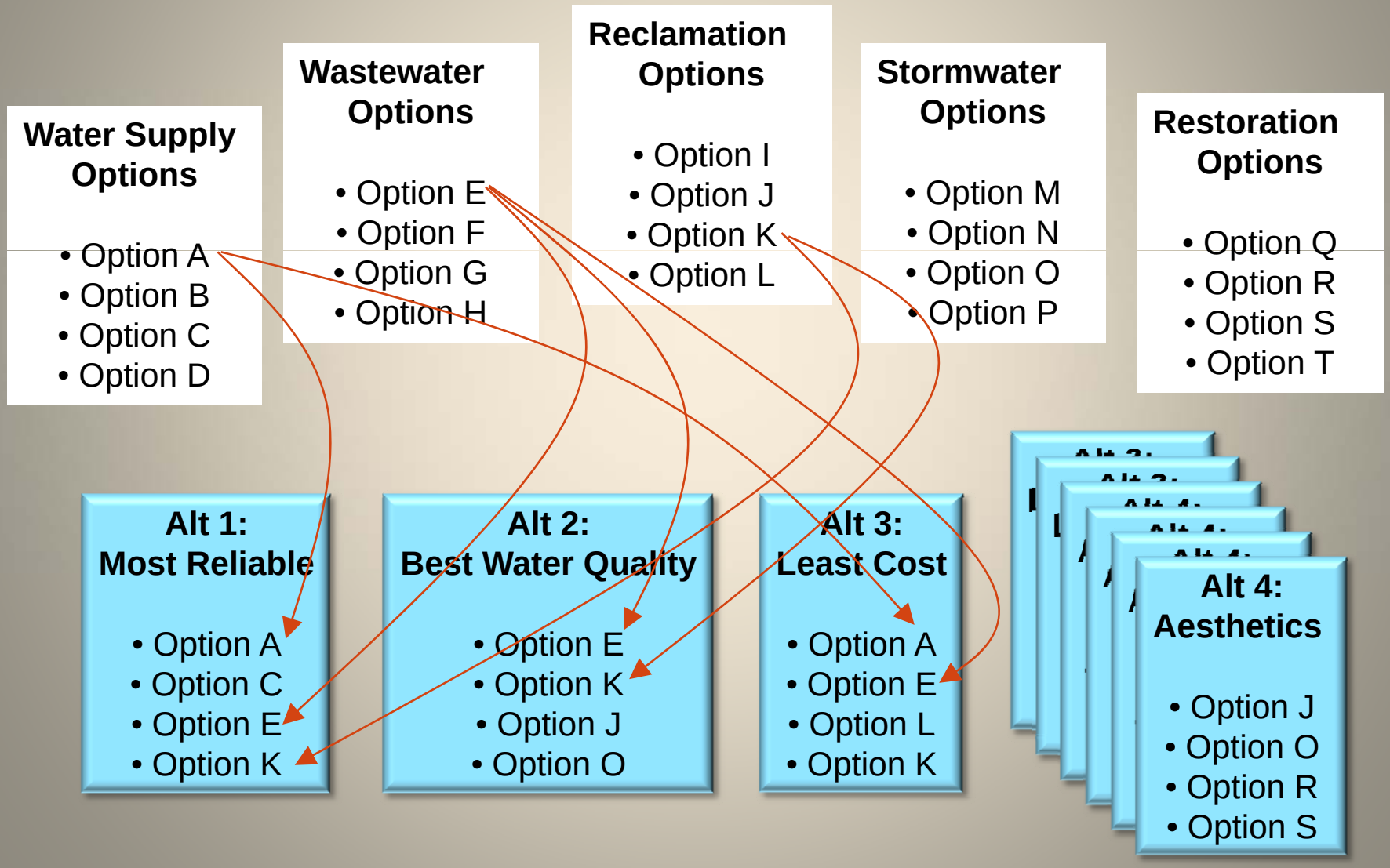
Objectives	Performance Measures	Quantitative	Qualitative
Meet current and future demands for water and wastewater reliably	% of time all water demands met	•	
	Average magnitude of deficits (all uses)	•	
	% of time essential water demands met	•	
	Average magnitude of deficits (essential uses)	•	
	Volume of supply redundancy	•	
	Volume of wastewater capacity surplus or shortfall	•	
Provide safety and security of water resources systems	% of total wastewater on septic	•	
	Change in 100 year flood elevation		•
	Vulnerability of infrastructure and facilities		•
	Emerging water quality concerns		•
Maximize efficiency of water use and value of water resources	% demand reduction	•	
	% reduction in unaccounted for water	•	
	% reduction in inflow and infiltration		•
	% total reuse demand satisfied	•	
	Volume of stormwater put to beneficial use	•	
Improve water quality and ecological health of Harpeth River and watershed	Frequency of low flow < historical Sept. median flow	•	
	Average summer nitrogen load (lb/day)	•	
	Average summer BOD load (lb/day)	•	
	Ecological indicators		•
	Negative impacts of stormwater reduced		•
Provide improved access and aesthetics of Harpeth River	Feet of bank stabilization	•	
	% of streamflow that is WWTP effluent	•	
	Erosion potential		•
	Public accessibility		•
Minimize carbon footprint of water resources operations	Annual average energy requirements	•	
Achieve sustainable biosolids management	% of total biosolids handled sustainably	•	
Achieve regional acceptance	Number of cooperative agreements proposed	•	
	Sphere of positive influence (population)	•	
	Likelihood of public acceptance		•
Provide level of services for water resources at reasonable cost	Life-cycle cost of projects and policies	•	
	Combined % change in water and sewer rates	•	
	Meet secondary drinking water standards (taste, odor, etc.)		•

Development of Options

- Stormwater
- Water Treatment
- Water Distribution System
- Reclaimed Water System
- Conservation
- Ecological Restoration
- Wastewater Treatment
- Wastewater Collection System
- Biosolids

Alternatives Analysis

Step 1: Group Options Into Themed Alternatives

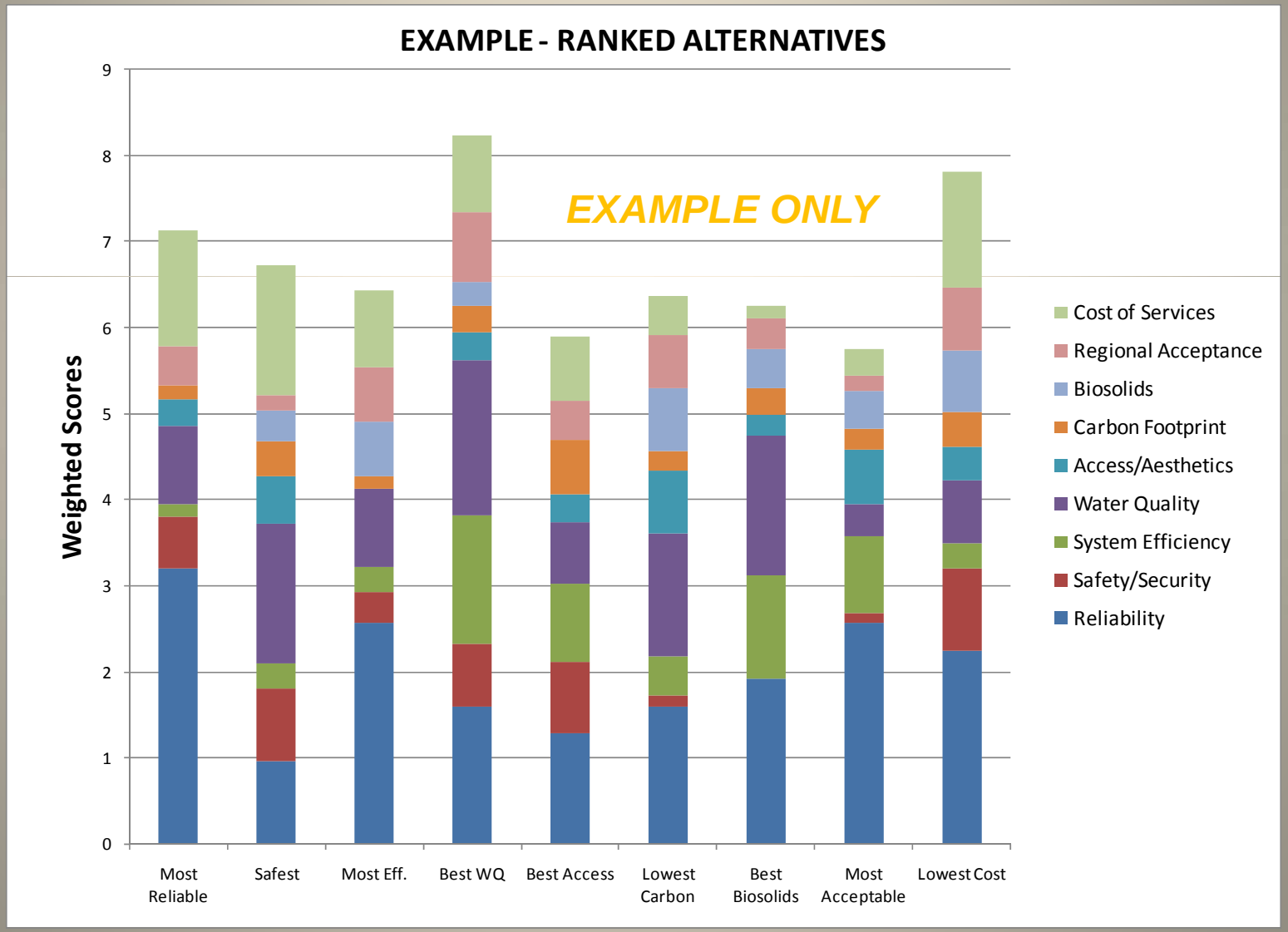


Alternatives Developed

- Water Quality - Improve water quality and ecological health of Harpeth River and watershed
- Cost - Provide excellent level of water/wastewater utility services at reasonable cost
- Efficiency - Maximize efficiency of water use and value of water resources
- Reliability - Meet current and future demands for water and wastewater reliably
- Safety & Security - Provide safety and security of water resources systems

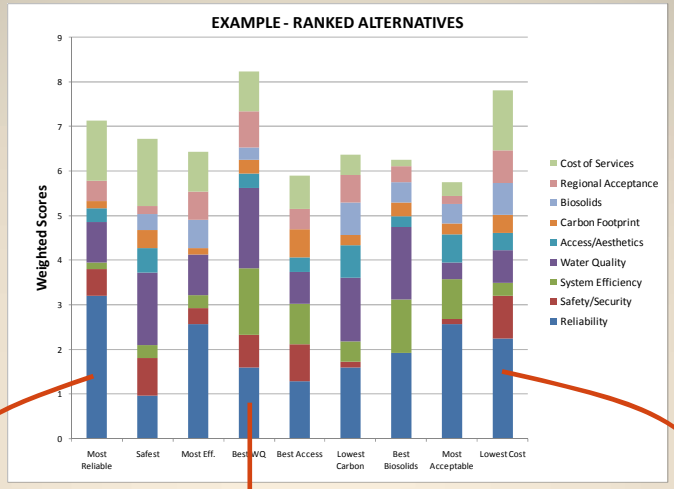
Alternatives Analysis:

Step 2: Rank the Alternatives



Alternatives Analysis:

Step 3: Form Hybrid Alternatives and Repeat Analysis



Repeat ranking with Hybrid(s)

Alternative with highest scores

Most Reliable
- Option A
- Option C
- Option E
- Option K

Best Water Quality
- Option E
- Option K
- Option J
- Option O

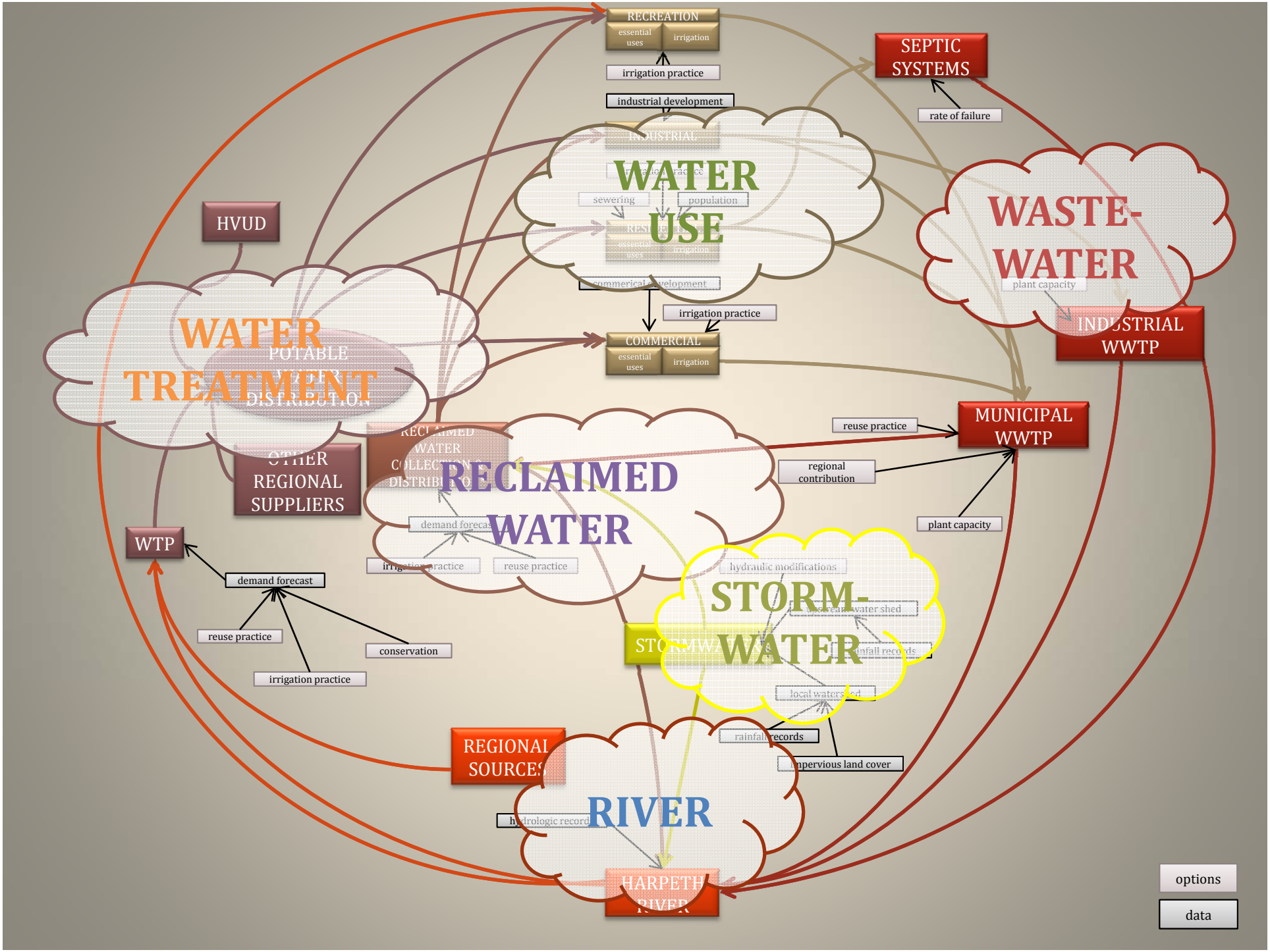
Least Cost
- Option A
- Option E
- Option L
- Option K

Combine common elements Of high-scoring alternatives

Hybrid 1
- Option A
- Option E
- Option K
- Option…

Themed Alternatives

			count	Water Quality	Cost	Efficiency	Reliability	Safety and Security
Stormwater Options	1	Increase stormwater storage for flood control and water quality improvement	2	1				1
	2	Conveyance upgrades for flood control	1					2
	3	Stream restoration to improve stormwater conveyance	0					
	4	Constructed wetlands for flood control and water quality improvements	2	4				4
	5	Develop bacterial source tracking program	0					
	6	Establish stormwater storage for reclaimed water use	2			6	6	
	7	Residential rain barrels and cisterns	3	7	7	7		
	8	Residential and commercial rain gardens	2	8	8			
	9	Pervious parking lots with collection	1	9				
	10	Storage for gradual stream augmentation	1			10		


RECREATION
essential uses
irrigation
irrigation practice
industrial development
SEPTIC SYSTEMS
rate of failure
WATER USE
sewering
population
commercial development
irrigation practice
WASTE-WATER
plant capacity
INDUSTRIAL WWTP
HVUD
WATER TREATMENT
POTABLE WATER DISTRIBUTION
COMMERCIAL
essential uses
irrigation
OTHER REGIONAL SUPPLIERS
RECLAIMED WATER COLLECTION DISTRIBUTION
RECLAIMED WATER
reuse practice
MUNICIPAL WWTP
regional contribution
plant capacity
demand forecast
reuse practice
WTP
demand forecast
reuse practice
conservation
irrigation practice
hydraulic modifications
STORM-WATER
rainfall records
impervious land cover
REGIONAL SOURCES
RIVER
hydrologic records
HARPETH RIVER
options
data

STELLA Model Demonstration

Next Steps

- Stakeholder Workshop #4 – August 18
  - Present modeling results for alternatives
  - Present weighting analysis
  - Present hybrid ideas and preliminary results
  - Discuss plan for recommendations to BOMA
- Website

  http://www.franklin-gov.com/index.aspx?page=618


Thank You