

McKinleyville Community Services District



**Feasibility Study Update
20-Year Wastewater Facilities Plan**

**July 21, 2010
Azalea Hall**

Presentation Overview

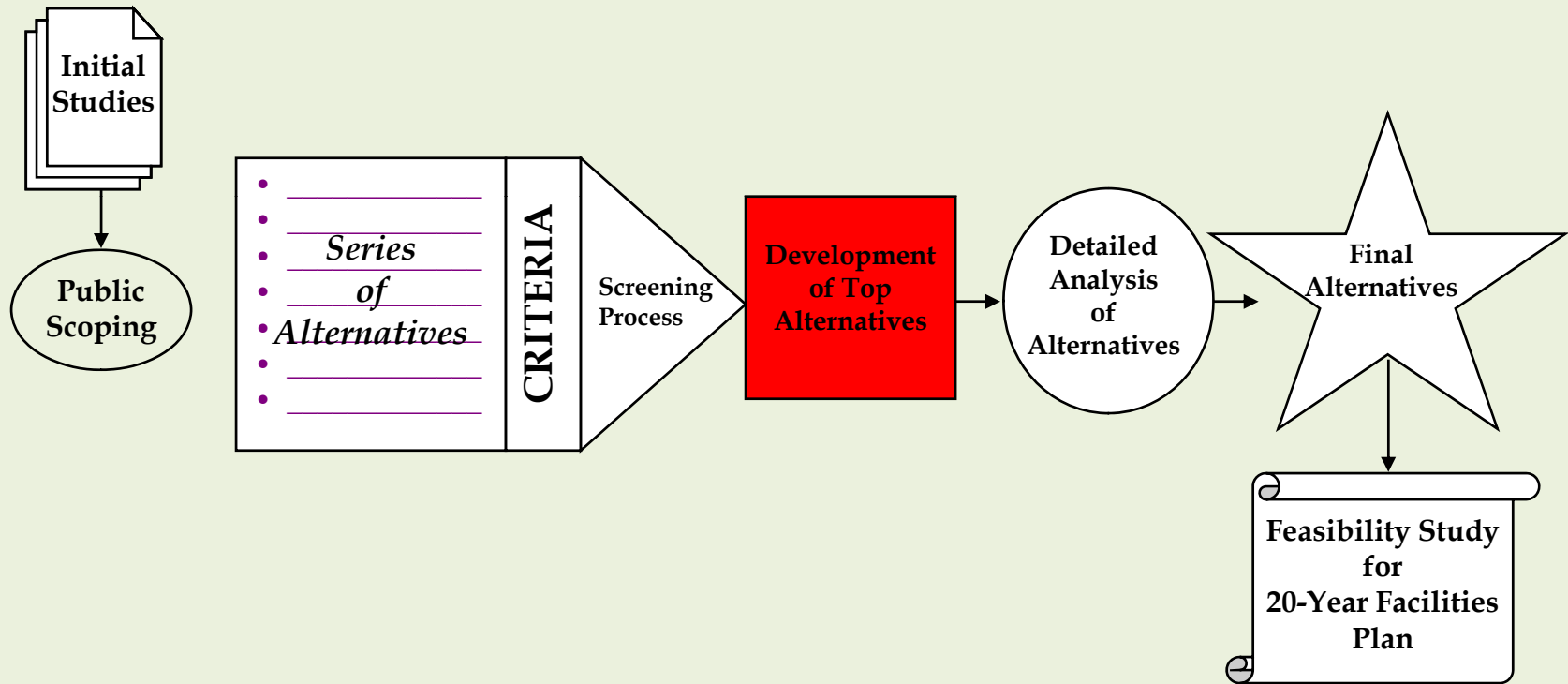
This presentation will cover progress made on the WWMF Feasibility Study including review of the following:

- The public scoping workshop conducted in April 2010.
- The technical review committee meeting in June 2010.
- The project alternatives recommended for further study.

Following the presentation, staff recommends the Board approve the top 4 alternatives from the feasibility study for further review in the 20-year Facilities Plan.



Feasibility Study for 20-Year Facilities Plan



Goals and Objectives

The goal of this process is to:

- identify the final alternatives to be considered in the 20-Year Facilities Plan.



Overview of Public Scoping Session (April 2010)

The workshop presented an opportunity for rate payers and stakeholders to provide input on alternatives to be considered. The outcome included a list of ideas and treatment system goals that the public would like addressed in the feasibility study.

Treatment system:

- Promote energy efficiency
- Increase passive/wetland system use
- Provide recreational benefits
- Incremental build-out of upgrades
- Reduce influent flow/gray water

Biosolids production and reuse:

- Methane capture system
- Composting for reuse

Disposal/reclamation/reuse:

- Use existing discharge for ocean outfall
- Challenge summer discharge prohibition
- Treat portion for reuse and then dispose
- Extract as much benefit before discharging



20-Year Facilities Plan

Facilities Plan Goal:

Develop sustainable wastewater solutions for the MCSD wastewater collection, treatment and disposal systems.

Facilities Plan Outline:

1. Regulatory Setting
2. Collection System
3. Wastewater Treatment
4. Effluent Disposal/Reuse
5. Biosolids Disposal/Reuse
6. Financing Plan
7. Environmental Compliance
8. Additional Considerations



Wastewater Treatment Options

Wastewater Treatment

- Mechanical Treatment
- Passive Treatment
- Enhanced Treatment
- Post-Disinfection Wetlands
- Tertiary Treatment

Biosolids

- Annual/20-Yr Process
- Class A Composting
- Class B Land Application
- Haul and Dispose
- Methane Capture System



Disposal, Reclamation, and Reuse Options



Effluent Disposal

- Mad River Discharge
- Ocean Outfall
- Land Discharge

Land Reclamation

- Land Reclamation

Wastewater Reuse

- Municipal/Public Reuse

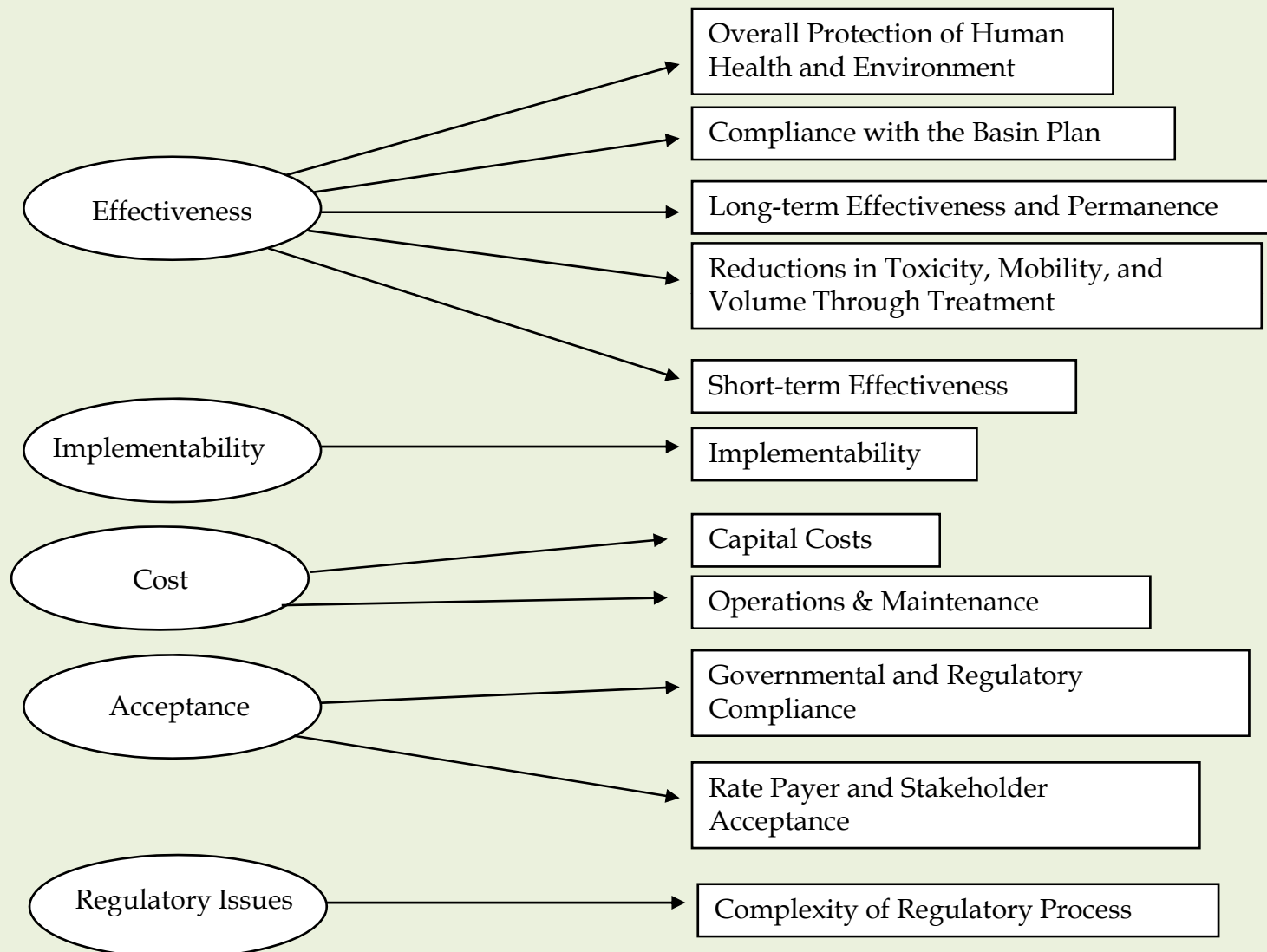
Overview of Technical Review Session (June 2010)

SHN and District staff participated in a technical review working group session in June 2010.

As a group we selected the final evaluation criteria, weighting factors, and scoring system for the process evaluation exercise.

The group then completed a Process Option Evaluation Matrix which involved applying criteria and ranking ideas for all process options identified.

Criteria for Feasibility Study



Weighing and Scoring of Options

	Effectiveness	Implementability	Acceptance
	Short/Long -term Objectives	Technical/Constructability	Regulatory/Public/District
	Water Quality	Adaptability/Flexibility	Public Use/Public Benefit
Score			
1	Does not achieve objectives	Very difficult to implement	Not Acceptable
3	Achieves some objectives	Readily implementable	Marginally Acceptable
5	Effective in achieving objectives	Easily implemented	Easily Accepted

	Cost	Regulatory Issues
	Capital/O&M/Transportation	Regional/State/Federal
	Power/Land Acquisition	
Score		
1	High Costs	Complex regulatory process
3	Moderate Costs	Moderate regulatory process
5	Negligible Costs	Simple regulatory process

Treatment Process Ranking

Treatment		Score
Option 1A	Suspended Aeration	3.8
Option 1B	Oxidation Ditch	3.6
Option 1C	Mechanical Filtration	1.6
Option 2A	SBRs	3
Option 2B	Membrane Reactors	3.8
Option 2C	No Change to Lagoons	2.6
Option 3A	SW Treatment Wetlands	3.6
Option 3B	SW Enhance Wetlands	3.8
Option 3C	No Change to Wetlands	2.6
Option 3D	SS Wetlands	3.4

Disposal Process Ranking

Disposal		Score
Option 5A	Mixing Zone Application	3.8
Option 5B	New Diffuser	3.4
Option 5C	No Change To Outfall	3.8
Option 6A	New Outfall Upstream (<1 mile)	3.2
Option 6B	New Outfall Upstream (>1 mile)	2.6
Option 7A	Estuary at Existing Outfall	3
Option 7B	Estuary at Perc Pond Outfall	2.2
Option 8A	Ocean at Existing Outfall	3
Option 8B	Ocean at New Outfall	3

Reclamation/Reuse Process Ranking

Reclamation/Reuse		Score
Option 9A	No Change	3.8
Option 9B	Modify Crop Cover/Management	4.4
Option 9C	Increase Acreage	3.2
Option 10A	Disposal at Reclamation Sites	4.2
Option 10B	Disposal at New Site	3
Option 10C	Subsurface Disposal at New Site	2.8
Option 11A	Municipal Recycling	3.8
Option 11B	Public Access Recycling	3

Biosolids Process Ranking

BioSolids		Score
Option 13A	Passive Dewatering - 20 Year	3.6
Option 13B	Mechanical Dewatering - 20 Year	3.8
Option 13C	Vendor/Portable System - 20 Year	4
Option 14A	Class A Biosolids - 20 Year	4
Option 14B	Class B Biosolids - 20 Year	3.6
Option 14C	Haul To Landfill - 20 Year	2.8
Option 15A	Passive Dewatering - Annual	2.6
Option 15B	Mechanical Dewatering - Annual	3
Option 15C	Vendor/Portable System - Annual	4.2
Option 16A	Class A Biosolids - Annual	4.4
Option 16B	Class B Biosolids - Annual	3.8
Option 16C	Haul To Landfill - Annual	3

Ranking of Alternatives for the 20-Year Facilities Plan

Alternative Description	Score	Rank
Suspended Aeration + Enhanced Treatment + Wetlands	16	1
Oxidation Ditch + Wetlands	15.8	2
Suspended Aeration + Enhanced Treatment + Wetlands + Ocean Outfall	15.8	2
Oxidation Ditch + Wetlands + Ocean Outfall	15.6	4
Membrane System	15.4	5
No Action	15	6
Lagoons + Wetlands + Enhanced Treatment	15	6
No Action + Ocean Outfall	14.8	8
Lagoons + Wetlands + Enhanced Treatment + Ocean Outfall	14.8	8
Membrane System + Ocean Outfall	14.6	10

Thank You!

