


**MEMORANDUM
WESTERN PLACER WASTE MANAGEMENT AUTHORITY**

TO: **WPWMA BOARD OF DIRECTORS** DATE: **NOVEMBER 8, 2018**
FROM: **BILL ZIMMERMAN / ERIC ODDO** 
SUBJECT: **WASTE ACTION PLAN – PRELIMINARY MODA AND NPV RESULTS**

RECOMMENDED ACTION:

1. Provide input to staff on the preliminary Waste Action Plan (Plan) MODA and NPV results; and
2. Direct staff to return at the December 13, 2018 meeting with a recommended preferred Plan concept.

BACKGROUND:

At the July 9, 2015 meeting, staff presented your Board with potential modifications and enhancements intended to maintain the long-term viability of the WPWMA's facilities by: 1) responding to changes in applicable regulations, 2) addressing anticipated regional growth, 3) optimizing material diversion rates, 4) maximizing operational efficiencies to improve customer safety and maintain a stable cost structure, and 5) enhancing compatibility between operations and current and future adjacent land uses. At the October 13, 2016 meeting, your Board approved an agreement with CH2M to develop a facility Waste Action Plan (Plan) addressing these needs and prepare the appropriate CEQA-related documents.

As planning efforts progressed, staff and CH2M felt that stakeholder engagement and more robust evaluation was appropriate to insure your Board is provided with the most comprehensive, transparent and objective analysis of the Plan concepts utilizing the WPWMA's existing, eastern and western properties. At the July 12, 2018 meeting, your Board approved the First Amendment to the CH2M Agreement providing funding for additional stakeholder engagement and a Multi Objective Decision Analysis (MODA) and net present value (NPV) cost analysis of the Plan concepts.

Over the past several months, staff and CH2M met with a broad range of stakeholder groups and performed the MODA and NPV analysis for three Plan concepts. Based on preliminary analysis results and stakeholder feedback, **Plan Concept 1 appears to best meet the WPWMA's project goals noted above.**

The following provides detail on the concepts, stakeholder engagement efforts, and the MODA and NPV analysis supporting this preliminary finding.

Waste Action Plan Concepts

Narratives and figures describing the three Plan concepts are included as Attachment A and are summarized as follows:

- Concept 0: All future activities occur exclusively on the existing permitted 320 acre parcel; significantly limiting future adaptability. Existing permitted landfill airspace capacity is reduced to accommodate the need for increased processing and recycling system infrastructure. The unlined waste in cells 1,2,10 and 11 is immediately excavated and relocated to make space for needed changes. No space is

allocated for compatible manufacturing or technology.

- Concept 1: The 158-acre eastern property is configured for future landfilling contiguous to the existing landfill as necessary. The 480-acre western property is utilized for non-landfilling operations including composting and public waste receiving; providing flexibility for future needs. Portions of the western property are set aside for compatible manufacturing/technology. The existing permitted 320 acre property will contain a smaller landfill than is currently permitted and is reconfigured to optimize MRF operations and provide space for emerging technology pilot studies.
- Concept 2: The 480-acre western property is configured for future landfilling as necessary. The existing permitted 320 acre property will contain a smaller landfill than is currently permitted and is reconfigured to optimize MRF and composting operations, public waste receiving, and provides space (as available) for emerging technology pilot studies. Portions of the eastern and western properties are set aside for compatible manufacturing/technology.

Stakeholder Engagement

Staff met with the following stakeholders to solicit feedback on the Plan concepts:

Elected Officials, Boards, Councils

- Placer County Board of Supervisors
- Roseville City Council
- Rocklin City Council
- Lincoln City Council
- Pioneer Energy

Large Land Owners

- Placer Ranch, Inc.
- United Auburn Indian Community
- AKT Development Corp.
- Placer Athens Limited Partnership

Community and Business Groups

- Rocklin Chamber of Commerce Government Relations Committee
- Lincoln Chamber of Commerce
- Placer County Associations of Realtors
- North State Building Industry Association

Regulators

- Placer County Air Pollution Control District
- Regional Water Quality Control Board
- CalRecycle
- Placer County Environmental Health Department

Environmental Groups

- Sierra Club
- Audubon Society

General Public

- Residents from the Blue Oaks, Westpark, Fiddymont Farms, and Amoruso neighborhoods were engaged as part of the annual community meeting to discuss odors.

While each group has a different perspective, they have all been generally supportive and understand the need for the Plan and the value of maintaining the long-term viability of the facility. Many also expressed concerns regarding the potential for increased odors. Staff reinforced the WPWMA’s commitment to being a good neighbor, provided information on odor mitigation efforts to date, and noted that the WPWMA is working on specific odor mitigation strategies as a core Plan element.

MODA Analysis

The MODA process is designed to provide a quantifiable, objective, robust and transparent method for comparing the Plan concepts by analyzing non-monetary aspects of each Plan concept based on a series of project criterion. The criteria were developed with input from the Member Agency Advisory Committee to reflect the priorities most important to the WPWMA, Member Agencies, and key stakeholders and provide a reasonable level of differentiation between the concepts. Other factors (typically evaluated in the CEQA process) such as potential greenhouse gas emissions, noise, and utility requirements were deemed to not be sufficiently definable at this point in the planning in a way that distinguishes between the concepts, thus were excluded from this part of the analysis. At the September 13, 2018 meeting, your Board approved the MODA criteria, included as Attachment B.

WPWMA staff and the Member Agency Advisory Committee then provided feedback on the relative importance of each criterion (through a weighting exercise). CH2M independently scored how well each Plan concept met the criteria and applied the WPWMA staff and Member Agency Advisory Committee weighting factors to determine the ultimate MODA score. Attachment C includes a summary of the WPWMA staff and Member Agency Advisory Committee weighting factors.

To account for feedback received during the stakeholder engagement process, staff and CH2M created several additional MODA weighting “profiles” to consider how the feedback received may influence the MODA results. These additional weighting profiles are generally described below. A summary of the weighting factors for these additional profiles are included in Attachment C.

- Proximate Stakeholders This profile is heavily weighted towards consideration of the impact of odor on nearby sensitive receptors and available future disposal and diversion capacity. The financial implications as well as the potential opportunities related to siting compatible technologies and fostering emerging solid-waste related technologies were also weighted as being important.
- Odor Potential This profile has all weighting on the “sensitive receptors” criterion, which represents the potential impact of odors on surrounding residential and commercial receptors.
- Operational Capacity This profile is weighted toward the ability to provide sufficient future disposal and diversion capacity, maintain flexibility to accommodate changes in future operations, traffic and material flow patterns, and the potential to attract compatible technologies.
- Financial Implications This profile is heavily weighted towards the relative need to obtain near-term external financing for the proposed concepts.

The following table summarizes the preliminary MODA results for WPWMA staff, Member Agency Advisory Committee members and modeled ranking profiles. With the exception of the “Odor Potential” profile, the MODA results suggest that Plan Concept 1 best meets the WPWMA’s project goals when viewed from multiple perspectives.

Profile	MODA Score		
	Concept 0	Concept 1	Concept 2
WPWMA staff	33.9	75.1	52.9
Advisory Committee	34.4	75.8	53.0
Proximate Stakeholders	41.2	61.7	47.4
Odor Potential	72.6	17.1	28.4
Operational Capacity	28.9	85.1	59.8
Financial Implications	47.6	74.6	52.0

NPV Analysis

The purpose of the NPV analysis is to produce an annualized cost in current (2018) dollars for each Plan concept and to identify when significant changes in capital and operating expenditures could be necessary. For the purposes of this analysis, the overall project timeframe was equal to the longest landfill life expectancy of the three Plan concepts (approximately 90 additional years from now).

Similar to the MODA process, the NPV is intended to reflect the relative difference between Plan concepts. The NPV includes only the capital, operating and overhead costs for the elements identified in the Plan concepts. Other costs or revenues that may be realized in the future (such as renovations or replacement of MRF equipment – which are not an element of the master planning exercise) are not included in the NPV. The NPV cost results are not intended to be viewed in their absolute terms or used to directly predict future tipping fees. Rather, they should be compared to provide general insight into the budgetary-level costs needed to achieve the goals for each Plan concept over the entire life of the NPV evaluation period.

CH2M utilized costs from past WPWMA construction projects and operating budgets, current industry standard unit cost figures, and discussions with Nortech to develop individual capital, operating and overhead costs for each Plan concept element (e.g. composting, landfill, public area, office space, etc.). A key element in the NPV analysis was estimating future waste generation, processing and disposal rates. For the purposes of this analysis, CH2M assumed the wastestream received and processed at the WPWMA’s facility would roughly double over the next 30 years (consistent with population growth estimates included in the Participating Agencies’ general plans) and flatten thereafter.

The following table provides the preliminary NPV estimates for each Plan concept:

Concept 0:	\$75,300,000
Concept 1:	\$51,700,000
Concept 2:	\$60,800,000

Additional detail that summarizes the relationship between capital and operating costs for these estimates as well as information about when these costs may be incurred is included in Attachment D.

Next Steps

Staff will work with CH2M to finalize the MODA and NPV analysis, including addressing any feedback on the preliminary results received from your Board and/or any of the previously engaged stakeholder groups.

Staff plans to return to your Board in December with the finalized analysis, a recommendation regarding the preferred Plan concept, and a request for authorization to initiate the CEQA process.

ENVIRONMENTAL CLEARANCE:

The recommended actions do not constitute a project under the California Environmental Quality Act.

FISCAL IMPACT:

There is no additional fiscal impact to the WPWMA associated with the recommended actions. Any costs associated with incorporating input from your Board on the preliminary MODA and NPV results and directing staff to return with the final Plan concept recommendation at the December meeting are already included in the Agreement with CH2M.

ATTACHMENTS: ATTACHMENT A – PLAN CONCEPT NARRATIVES
ATTACHMENT B – MODA CRITERIA
ATTACHMENT C – MODA WEIGHTING FACTORS
ATTACHMENT D – PRELIMINARY NET PRESENT VALUE ESTIMATES

PLAN CONCEPT 0 EXISTING SITE RECONFIGURED

Ability to Meet Project Goals

Increase recycling rates	X
Maintain local control	
Regulatory compliance	X
Provide long-term recycling capacity	X
Provide long-term disposal capacity	
Enhance compatibility	X
Opportunity for innovation	

General Description

All future solid waste activities will occur exclusively on the existing permitted 320-acre parcel. The WPWMA could elect to continue leasing to tenants or sell the western and eastern properties.

Processing and Recycling Operations

Core processing and recycling operations (MRF, C&D and composting) will occur on the northern portion of the existing property. Systems will be sized to accommodate anticipated material growth rates over the next 25 years. Maintaining relatively close and compact proximity of these operations to each other is intended to initially yield increased operational efficiencies and reduce operating costs. Flexibility to further expand or modify these operations in the future may be hampered by lack of available space between operations.

Landfill Operations

Modules 1, 2, 10 and 11 (closed, unlined modules) will be immediately excavated and relocated to a lined module to facilitate expansion of processing and recycling operations. The space currently allocated for future Modules 8 and 9 will be utilized for processing and recycling operations and no longer available for landfilling. The overall permitted capacity of the landfill will be reduced from ~36.5 million cubic yards to ~17.7 million cubic yards, yielding an estimated remaining landfill life of approximately 30 years. Upon closure, wastes will continue to be received at the facility, processed for diversion, and the residuals transferred via long-haul trucks to a third-party landfill. Potential local options include Recology’s Ostrom Road Landfill, Sacramento County’s Kiefer Landfill, and Yolo County’s Central Landfill.

Compatible Operations and Opportunities for Innovation

Space for compatible operations, emerging technology pilot studies and collaboration with universities is not included in this concept. The WPWMA could potentially pursue a separate project in the future to permit the western and eastern properties for such uses.

Enhanced Compatibility

Facility odors could be reduced by utilizing ASP composting technologies and earlier closure of the landfill, although opportunities to employ new odor-reducing waste processing technologies may be more limited (compared to Concepts 1 and 2) due to lack of available space



PLAN CONCEPT 1 LANDFILL EAST

Ability to Meet Project Goals

Increase recycling rates	X
Maintain local control	X
Regulatory compliance	X
Provide long-term recycling capacity	X
Provide long-term disposal capacity	X
Enhance compatibility	X
Opportunity for innovation	X

General Description

The majority of the 158-acre eastern property will be reserved for future landfill capacity. MRF and C&D operations will remain proximate to each other on the existing 320-acre property. Composting and other organics management will occur on the 480-acre western property. Portions of the western property will be reserved for compatible third-party operations.

Processing and Recycling Operations

Systems will be sized to accommodate anticipated material growth rates over the next 25 years. Placement on the western property provides additional space specifically allowing for expansion of composting operations as necessitated by current and anticipated future organics regulations.

Landfill Operations

Future filling operations could occur on the eastern property. Modules 1, 2, 10 and 11 (closed, unlined modules) will be excavated and relocated to a lined module to facilitate expansion of processing, recycling operations and additional landfill space if necessary. Excavation and relocation can be phased as needed or as finances allow. The space currently allocated for future Module 9 will be utilized for processing and recycling operations and no longer available for landfilling. Landfill capacity will increase from ~36.5 million cubic yards to ~75.8 million cubic yards, yielding an estimated remaining landfill life of approximately 90 years.

Compatible Operations and Opportunities for Innovation

A significant portion of the western property will be available for compatible operations, emerging technology pilot studies and collaboration with universities. Doing so will serve to increase the recovery and marketability of materials and produce alternative fuels and energy.

Enhanced Compatibility

Concept 1 provides the WPWMA the greatest opportunity to employ new odor-reducing waste processing technologies such as ASP composting. Landfill odors could persist for a longer period compared to Concepts 0 and 2 due to a longer projected remaining life.



PLAN CONCEPT 2 LANDFILL WEST

Ability to Meet Project Goals

Increase recycling rates	X
Maintain local control	X
Regulatory compliance	X
Provide long-term recycling capacity	X
Provide long-term disposal capacity	X
Enhance compatibility	X
Opportunity for innovation	X

General Description

Over half of the 480-acre western property will be reserved for future landfill capacity. All non-landfill solid waste activities will occur exclusively on the existing permitted 320-acre parcel. Portions of the eastern property will be reserved for compatible third-party operations and could also include a biological reserve area.

Processing and Recycling Operations

Systems will be sized to accommodate anticipated material growth rates over the next 25 years. Maintaining relatively close and compact proximity of these operations to each other should initially yield increased operational efficiencies and reduce operating costs. Flexibility to further expand or modify these operations in the future may be hampered by the lack of available, unencumbered space between the individual operations.

Landfill Operations

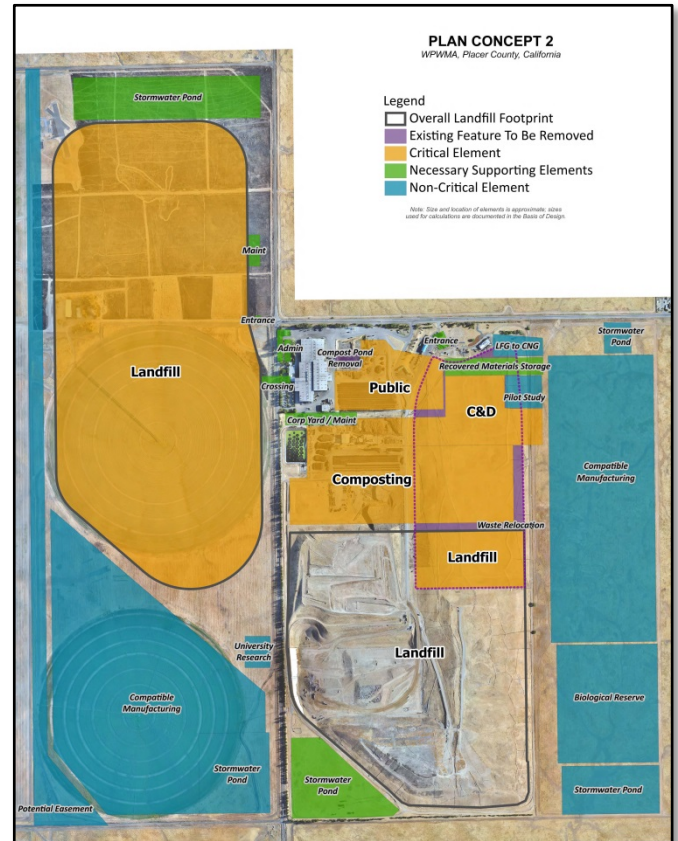
Future filling operations could occur on the western property. Modules 1, 2, 10 and 11 (closed, unlined modules) will be immediately excavated and relocated to a lined module to facilitate expansion of processing and recycling operations. The space currently allocated for future Modules 8 and 9 will be utilized for processing and recycling operations and no longer available for landfilling. Landfill capacity will increase from ~36.5 million cubic yards to ~54.3 million cubic yards, yielding an estimated remaining landfill life of approximately 70 years.

Compatible Operations and Opportunities for Innovation

A significant portion of the eastern property will be available for compatible operations, emerging technology pilot studies and collaboration with universities, which could serve to increase recycling rates and produce alternative fuels and energy.

Enhanced Compatibility

Concept 2 provides the WPWMA some opportunity to employ new odor-reducing waste processing technologies such as ASP composting. Landfill odors could persist for a longer period compared to Concepts due to a longer project remaining life.



MODA Criteria

Criterion	Description	Performance Measures
<i>Enhances operational compatibility with current and future neighboring land uses</i>		
Sensitive Receptors: Optimizes separation of potential odor and nuisance generating elements from existing land uses with potentially sensitive receptors.	Prefer concept with fewest potential (relative) odor and other nuisance effects (e.g. windblown litter or dust from landfill, windblown compost fines) on surrounding land uses with potentially sensitive receptors.	Acres (current or planned) with the following sensitive receptors: residential, commercial, schools, hospitals, daycares, recreational areas within 3 zones (0 – 1.5 miles, 1.5 – 2.5 miles, 2.5 – 4 miles) from center of primary operations (landfill and compost).
Wetland Impacts: Minimizes environmental impacts to wetlands or vernal pools.	Prefer concept that minimizes potential for impacts to documented wetlands, vernal pools and related receptors on the Eastern or Western properties.	Acreage of potential environmental impacts to wetlands or vernal pools that will be impacted on the Eastern or Western properties in two categories (critical and non-critical elements).
Cultural Resource Impacts: Minimizes impacts to areas of cultural significance.	Prefer concept that minimizes potential for impacts to documented historic properties or archeological resources that may require mitigation measures.	Number of identified potential historic or cultural impacts on the Eastern or Western properties in two categories (critical and non-critical elements).
Offsite Vehicle Impacts: Minimizes offsite traffic impacts (air emissions, traffic impacts, wear and tear on roads).	Prefer concept that has the fewest offsite vehicle miles traveled (from MRF to alternative disposal site outside of county and/or outside of state).	Measure based on estimated round trip trucks needed for offsite disposal based on the waste forecast through the years requiring disposal.
<i>Provides capacity to support current and future population development, ensures compliance with expanding regulations, increases diversion, and allows for industrial innovation</i>		
Disposal and Diversion Capacity: Addresses disposal and diversion capacity: Provides onsite capacity and expansion area to support current and anticipated compost, C&D, and landfill needs of the current and future population and development.	Prefer concept that provides capacity and area to support current and anticipated diversion and disposal needs of future population and development and ensure compliance with state regulations.	Measure based on years of available landfill disposal capacity
Opportunities for Industrial Innovation: Creates opportunities for industrial innovation and economic growth. Acres reserved for potential compatible manufacturing. Reflecting the potential to create opportunities for industrial innovation and economic growth, including land for growth and availability or readily upgradable utility connections.	Prefer concept that creates opportunities for industrial innovation and economic growth, including available land and available or readily upgradable utility connections necessary for development.	Measure based on acres available for third-party industrial innovation space.

<i>Optimizes onsite operational adjacencies</i>		
<p>Traffic and Material Flow: Optimizes onsite traffic and material flow.</p>	<p>Prefer concept that provide access points that improve separation of traffic and safety; onsite traffic circulation patterns that improve separation of public, commercial, and operational traffic and minimize traffic congestion and risk of traffic collisions or other traffic accidents; optimized traffic flow patterns for operational materials transport and reduced wait times and improved customer convenience.</p>	<p>1-5 scale the reflecting degree to which the planned concept improves separation of public, commercial, operational traffic; provides minimal traffic congestion and impacts to risk of traffic collisions or other traffic accidents; optimizes traffic flow patterns for reduced wait times and improved customer convenience; optimizes operational materials transport (time, air emissions).</p>
<p>Flexibility for Future Operations: Provides flexibility for future operations or infrastructure needs.</p>	<p>Prefer concept that provides space between project elements to allow for future operational changes while maintaining proximity to allow for efficient material flow.</p>	<p>1-5 scale reflecting potential for space between project elements to allow for future changes including odor mitigation enhancements or necessary operational changes resulting from fluctuating recycling markets while maintaining sufficient proximity to allow for efficient flow of materials.</p>
<i>Provides a safeguard for future generations by maintaining local control and stable rates</i>		
<p>External Financing: Minimizes external financing.</p>	<p>Prefer concept that requires the least amount of external financing.</p>	<p>Total capital cost in first 5 years; reflecting degree that concept may require external financing (for large capital expenditures) in the first 5 years.</p>

**MODA Weighting and Ranking
WPWMA Staff and Member Agency Advisory Committee Members**

Criteria	WPWMA	Lincoln	Rocklin	Roseville	Placer County
Sensitive Receptors	16%	17%	10%	21%	15%
Wetland Impacts	4%	2%	2%	2%	5%
Cultural Resource Impacts	3%	2%	2%	2%	7%
Offsite Vehicle Impact	12%	6%	10%	14%	5%
Disposal and Diversion Capacity	16%	22%	21%	17%	18%
Opportunities for Industrial Innovation	12%	12%	10%	11%	11%
Traffic and Material Flow	13%	9%	8%	6%	13%
Flexibility for Future Operations	15%	11%	19%	11%	16%
External Financing	9%	19%	17%	17%	9%

**MODA Weighting and Ranking
Additional Modeled Profiles**

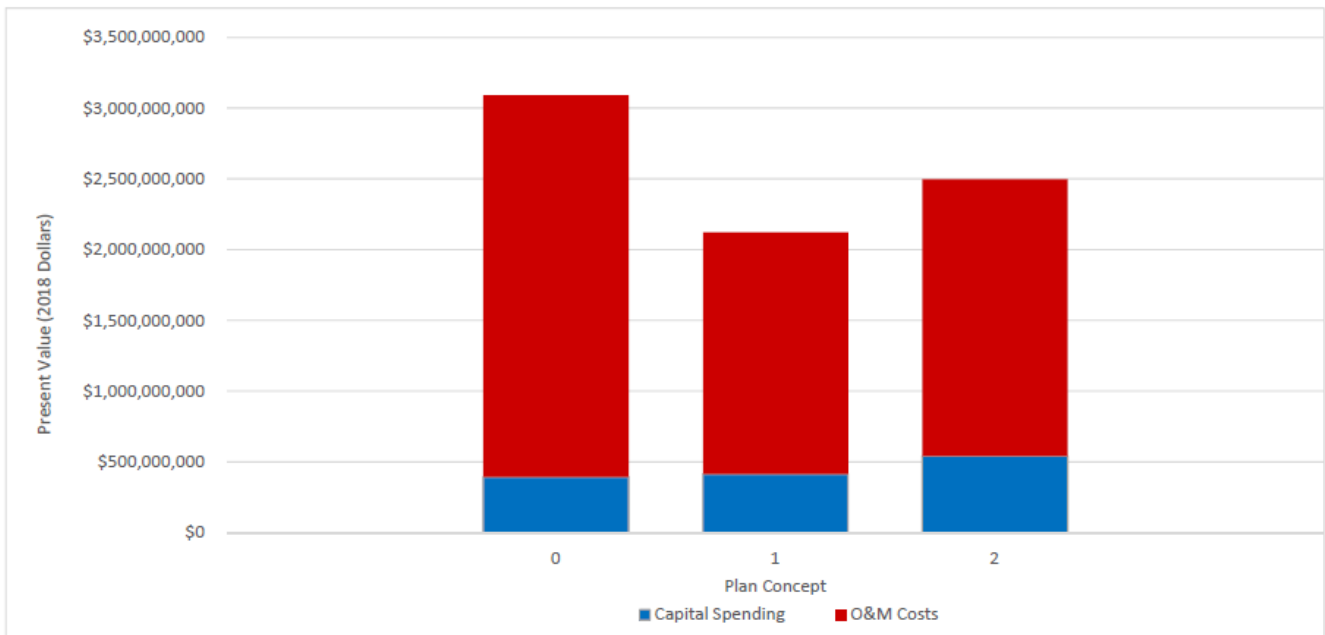
Criteria	Proximate Stakeholders	Odor Potential	Operational Capacity	Financial Implications
Sensitive Receptors	38%	100%	5%	8%
Wetland Impacts	2%	0%	1%	8%
Cultural Resource Impacts	2%	0%	1%	8%
Offsite Vehicle Impact	4%	0%	3%	8%
Disposal and Diversion Capacity	19%	0%	26%	8%
Opportunities for Industrial Innovation	15%	0%	13%	8%
Traffic and Material Flow	2%	0%	23%	8%
Flexibility for Future Operations	8%	0%	25%	8%
External Financing	11%	0%	3%	38%

Net Present Value Cost Estimates

Client: WPWMA
 Project: Renewable Placer - Waste Action Plan
 Date: Oct-31-2018

Summary of Concept Costs, Present Value, 2018 Dollars (Rounded)

Plan Concept	Capital Spending (PV)	O&M Costs (PV)	Total Project Present Value (PV)	Annualized Capital Spending (PV)	Annualized O&M Costs (PV)	Annualized Project Present Value (PV)
0 Existing Site Reconfigured	\$394,300,000	\$2,697,800,000	\$3,092,100,000	\$9,600,000	\$65,700,000	\$75,300,000
1 Landfill East	\$414,700,000	\$1,710,000,000	\$2,124,700,000	\$10,100,000	\$41,600,000	\$51,700,000
2 Landfill West	\$541,800,000	\$1,957,300,000	\$2,499,100,000	\$13,200,000	\$47,700,000	\$60,800,000



Numbers shown are the present value of costs.