

Integrated System Scenarios

Introduction

In developing the most feasible approach to managing the solid waste system within the County, an array of integrated system scenarios needs to be identified, analyzed and ranked. As part of this study, Brown, Vence & Associates (BVA) in conjunction with Sonoma County staff identified, analyzed, and evaluated eleven potential alternatives for handling the County's solid waste stream. These alternatives were considered to be the "building blocks" of potential integrated system scenarios. Results of the alternatives analysis and evaluation including the weighted scores for each alternative are listed in Table 1 below.

Table 1 | Alternative Scoring

| Alternative | Score |
|---|--------------|
| Short-Term Alternatives | |
| Alternative 1 – Exporting of Solid Waste Outside of County | 312 |
| Alternative 2 – Joint Powers Agency Assumes Greater Responsibility for Solid Waste | 341 |
| Alternative 3 – Maximize Diversion in the County through Zero Waste Policies | 355 |
| Alternative 4 – Expansion of the Central Disposal Site | 292 |
| Alternative 5 – Subregional Waste System | 232 |
| Long-Term Alternatives | |
| Alternative 1 – Exporting of Solid Waste Outside of County | 312 |
| Alternative 3 – Maximize Diversion in the County through Zero Waste Policies | 378 |
| Alternative 6 – Development of West Expansion Area | 285 |
| Alternative 7 – Development of New Long-Term Landfill Capacity in the County | 236 |
| Alternative 8 – Develop Multi-County Regional System by Incorporating Adjacent County's Waste | 333 |
| Alternative 9 – Regional Cooperation to Develop a Materials Recovery Facility to Divert Non-Source Separated Recyclables from the Refuse Stream (this alternative does not include development of a source-separated recyclables MRF as these are already operated by private industry) | 278 |
| Alternative 10 – Development of an Organics Processing Facility | 248 |
| Alternative 11 – Privatization of All or Part of the Solid Waste System | 276 |



System Scenario Development

The first step in developing the integrated system scenarios is to identify those “building blocks” or alternatives that should be included as a base in all scenarios. These base alternatives equate to those ranked most favorable in the evaluation (and can be included in all scenarios) and those that are required as part of a comprehensive system.

To begin the analysis, Alternative 1, exporting waste out-of-county will be required over the short-term to meet in-County landfill capacity shortfall and needs to be included in each scenario. Next, the most favorable alternatives, those alternatives with the highest scores, were selected. The most favorable alternatives, included:

- Alternative 2 – Joint Powers Agency Assumes Greater Responsibility for Solid Waste
- Alternative 3 – Maximize Diversion in the County through Zero Waste Policies
- Alternative 8 – Develop Multi-County Regional System by Incorporating Adjacent County’s Waste

Although Alternatives 2, 3 should be considered as base “building blocks” or part of each scenario, Alternative 8 needs to be integrated into separate scenario(s) for analysis as it affects the overall systematic approach for handling the County’s waste.

Next the least favorable alternatives, including those that scored less than 250 analytic points were reviewed to determine if they could be excluded from the scenarios. The least favorable alternatives included:

- Alternative 5 – Subregional Waste System
- Alternative 7 – Development of New Long-Term Landfill Capacity in the County
- Alternative 10 – Development of an Organics Processing Facility

These results tend to rule out consideration of development of a new in-County landfill, the alternative which received the lowest score of all. The results would also point to not aggressively pursuing the Subregional waste system or development of an organics processing facility. However, since development of the subregional system may not be in the County’s control (i.e., large number of jurisdictions leave the system), it should be included in at least one scenario. In addition, although the organics processing facility is not feasible at the present time, it may be promising in the future, especially as an adjunct to handle organics materials separated from a non-source separated MRF. The option for an organics processing facility should be revisited in the near future to determine its viability.

Thus each scenario would need to include:

- Alternative 1 – Exporting of Solid Waste Outside of County (short term)
 - Alternative 2 – Joint Powers Agency Assumes Greater Responsibility for Solid Waste
 - Alternative 3 – Maximize Diversion in the County through Zero Waste Policies.
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In addition, each scenario would need to include a long-term disposal component to institute once the short-term exportation contract is terminated. As Alternative 4, expansion at Central will only net approximately 13.2 years of capacity at current flow rates, it will need to be combined with other alternatives for long-term disposal capacity; like-wise Alternative 6, development of the West Expansion Area, nets only about 24 years of capacity and also should be combined with longer-term solutions. Thus the possible long-term disposal combinations include (assumes Alternative 7, development of a new in-county site, was eliminated as discussed above):

- Alternative 1 - long-term exporting of waste out-of-county
- Alternative 4 followed by Alternative 1 - expanding Central (East Canyon, Rock Extraction Area and North Area Expansion) and then exporting waste out of County long-term
- Alternative 6 followed by Alternative 1 – developing the West Expansion Area at Central and then exporting waste out-of-County long-term
- Alternative 4 and Alternative 6 followed by Alternative 1 – expanding Central (East Canyon, Rock Extraction Area and North Area Expansion) and then developing the West Expansion Area at the CDS and then exporting waste out-of-County long-term.

These long-term disposal combinations result in the first four scenarios described below:

Scenario A

- Alternative 1 – Exporting of Solid Waste Outside of County (short term)
- Alternative 2 – Joint Powers Agency Assumes Greater Responsibility for Solid Waste
- Alternative 3 – Maximize Diversion in the County through Zero Waste Policies
- Alternative 1 - Long-term Exporting of Waste Out-Of-County

Scenario B

- Alternative 1 – Exporting of Solid Waste Outside of County (short term)
- Alternative 2 – Joint Powers Agency Assumes Greater Responsibility for Solid Waste
- Alternative 3 – Maximize Diversion in the County through Zero Waste Policies
- Alternative 4 followed by Alternative 1 – Expanding Central (East Canyon, Rock Extraction Area and North Area Expansion) and then Exporting Waste Out-Of-County Long-Term

Scenario C

- Alternative 1 – Exporting of Solid Waste Outside of County (short term)
- Alternative 2 – Joint Powers Agency Assumes Greater Responsibility for Solid Waste
- Alternative 3 – Maximize Diversion in the County through Zero Waste Policies



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Alternative 6 followed by Alternative 1 – Developing the West Expansion Area at the CDS and then Exporting Waste Out-Of-County Long-Term

Scenario D

Alternative 1 – Exporting of Solid Waste Outside of County (short term)

Alternative 2 – Joint Powers Agency Assumes Greater Responsibility for Solid Waste

Alternative 3 – Maximize Diversion in the County through Zero Waste Policies

Alternative 4 and Alternative 6 followed by Alternative 1 – Expanding Central (East Canyon, Rock Extraction Area and North Area Expansion) and then developing the West Expansion Area at the CDS and then Exporting Waste Out-Of-County Long-Term

As the Non-Source Separated MRF is a costly alternative that reduces the amount of waste requiring disposal, it was only included as a component of the most costly long-term disposal alternative (to reduce the disposal component of the scenario). The most costly long-term disposal scenario is Scenario A. Alternative 9; the Non-Source Separated MRF was added to this Scenario to develop a new Scenario E as shown below. If the MRF is deemed economically viable, it can be later added back to other scenarios, as appropriate.

Scenario E

Alternative 1 – Exporting of Solid Waste Outside of County (short term)

Alternative 2 – Joint Powers Agency Assumes Greater Responsibility for Solid Waste

Alternative 3 – Maximize Diversion in the County through Zero Waste Policies

Alternative 9 – Regional Cooperation to Develop a Materials Recovery Facility to Divert Non-Source Separated Recyclables from the Refuse Stream

Alternative 1 - Long-term Exporting of Waste Out-Of-County

The remaining alternatives to consider include:

- Alternative 5 – Subregional Waste System
- Alternative 8 – Develop Multi-County Regional System by Incorporating Adjacent County's Waste
- Alternative 11 – Privatization of All or Part of the Solid Waste System

Alternative 5, development of a subregional waste system (from members leaving the system) could evolve under any of the above five scenarios. This yields the following five scenarios:

Scenario F

Alternative 1 – Exporting of Solid Waste Outside of County (short term)

Alternative 2 – Joint Powers Agency Assumes Greater Responsibility for Solid Waste

Alternative 3 – Maximize Diversion in the County through Zero Waste Policies

Alternative 5 – Subregional Waste System

Alternative 1 - Long-term Exporting of Waste Out-Of-County

Scenario G

Alternative 1 – Exporting of Solid Waste Outside of County (short term)

Alternative 2 – Joint Powers Agency Assumes Greater Responsibility for Solid Waste

Alternative 3 – Maximize Diversion in the County through Zero Waste Policies

Alternative 5 – Subregional Waste System

Alternative 4 followed by Alternative 1 - Expanding Central (East Canyon, Rock Extraction Area and North Area Expansion) and then Exporting Waste Out-Of-County Long-Term

Scenario H

Alternative 1 – Exporting of Solid Waste Outside of County (short term)

Alternative 2 – Joint Powers Agency Assumes Greater Responsibility for Solid Waste

Alternative 3 – Maximize Diversion in the County through Zero Waste Policies

Alternative 5 – Subregional Waste System

Alternative 6 followed by Alternative 1 – Developing the West Expansion Area at the CDS and then Exporting Waste Out-Of-County Long-Term

Scenario I

Alternative 1 – Exporting of Solid Waste Outside of County (short term)

Alternative 2 – Joint Powers Agency Assumes Greater Responsibility for Solid Waste

Alternative 3 – Maximize Diversion in the County through Zero Waste Policies

Alternative 5 – Subregional Waste System

Alternative 4 and Alternative 6 followed by Alternative 1 – Expanding Central (East Canyon, Rock Extraction Area and North Area Expansion) and then developing the West Expansion Area at the CDS and then Exporting Waste Out-Of-County Long-Term

Scenario J

Alternative 1 – Exporting of Solid Waste Outside of County (short term)

Alternative 2 – Joint Powers Agency Assumes Greater Responsibility for Solid Waste

Alternative 3 – Maximize Diversion in the County through Zero Waste Policies

Alternative 5 – Subregional Waste System

Alternative 9 – Regional Cooperation to Develop a Materials Recovery Facility to Divert Non-



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Source Separated Recyclables from the Refuse Stream

Alternative 1 - Long-term Exporting of Waste Out-Of-County

Alternative 8, development of a multi-county regional system by incorporating adjacent counties waste would only occur under the scenario that the County was either able to offer in-county landfill capacity or that the counties could combine tonnages to export out of region and take advantage of “economies of scale”. Using Alternative 1, exporting waste out-of-county long term could be considered in this multi-county regional system. This yields the eleventh Scenario K. Using the long-term disposal components of Scenario D, the County could offer in excess of 30 years of capacity to the other counties. This is considered as Scenario L below.

Scenario K

Alternative 1 – Exporting of Solid Waste Outside of County (short term)

Alternative 2 – Joint Powers Agency Assumes Greater Responsibility for Solid Waste

Alternative 3 – Maximize Diversion in the County through Zero Waste Policies

Alternative 8 – Develop Multi-County Regional System by Incorporating Adjacent County’s Waste

Alternative 1 - Long-term Exporting of Waste Out-Of-County

Scenario L

Alternative 1 – Exporting of Solid Waste Outside of County (short term)

Alternative 2 – Joint Powers Agency Assumes Greater Responsibility for Solid Waste

Alternative 3 – Maximize Diversion in the County through Zero Waste Policies

Alternative 8 – Develop Multi-County Regional System by Incorporating Adjacent County’s Waste

Alternative 4 and Alternative 6 followed by Alternative 1 – Expanding Central (East Canyon, Rock Extraction Area and North Area Expansion) and then developing the West Expansion Area at the CDS and then Exporting Waste Out-Of-County Long-Term

Alternative 11, privatization of the solid waste system is assumed to include privatization of the long-term disposal option. This yields the following scenario:

Scenario M

Alternative 1 – Exporting of Solid Waste Outside of County (short term)

Alternative 2 – Joint Powers Agency Assumes Greater Responsibility for Solid Waste

Alternative 3 – Maximize Diversion in the County through Zero Waste Policies

Alternative 11 – Privatization of All or Part of the Solid Waste System

The thirteen scenarios are summarized in Table 2.

Integrated System Scenarios

Table 2 | Scenario Summary

| Scenario | Institutional/Structural Issues | Short-Term Disposal | Facilities | Long-Term Disposal |
|----------|---|----------------------|-------------|---|
| A | Pursue greater responsibility for the JPA; maximize diversion through zero waste policies | Export out-of-county | None | Export out-of-county |
| B | Pursue greater responsibility for the JPA; maximize diversion through zero waste policies | Export out-of-county | None | Expand Central and then export out-of-county |
| C | Pursue greater responsibility for the JPA; maximize diversion through zero waste policies | Export out-of-county | None | Develop West Area at CDS and then export out-of-county |
| D | Pursue greater responsibility for the JPA; maximize diversion through zero waste policies | Export out-of-county | None | Expand Central & Develop West Area at CDS and then export out-of-county |
| E | Pursue greater responsibility for the JPA; maximize diversion through zero waste policies | Export out-of-county | Develop MRF | Export out-of-county |
| F | Pursue greater responsibility for the JPA; maximize diversion through zero waste policies; develop subregional system | Export out-of-county | None | Export out-of-county |
| G | Pursue greater responsibility for the JPA; maximize diversion through zero waste policies; develop subregional system | Export out-of-county | None | Expand Central and then export out-of-county |
| H | Pursue greater responsibility for the JPA; maximize diversion through zero waste policies; develop subregional system | Export out-of-county | None | Develop West Area at CDS and then export out-of-county |
| I | Pursue greater responsibility for the JPA; maximize diversion through zero waste policies; develop subregional system | Export out-of-county | None | Expand Central & Develop West Area at CDS and then export out-of-county |
| J | Pursue greater responsibility for the JPA; maximize diversion through zero waste policies; develop subregional system | Export out-of-county | Develop MRF | Export out-of-county |
| K | Pursue greater responsibility for the JPA; maximize diversion through zero waste policies; develop multi-county regional system | Export out-of-county | None | Export out-of-county |
| L | Pursue greater responsibility for the JPA; maximize diversion through zero waste policies; develop multi-county regional system | Export out-of-county | None | Expand Central & Develop West Area at CDS and then export out-of-county |
| M | Pursue greater responsibility for the JPA; maximize diversion through zero waste policies; privatize solid waste system | Export out-of-county | None | Private landfill |



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