

Biosolids Management Study



Madison Metropolitan Sewerage District

Biosolids Management Study: History



1930's
Nitrohumus



1979
Metrogro



1993
Metrogro
Storage



2005
Metromix



Challenges: Nutrients



Challenges: Soil



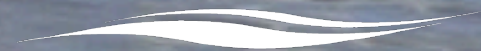
Challenges: Land Use



Challenges: Climate Change



Madison Metropolitan Sewerage District



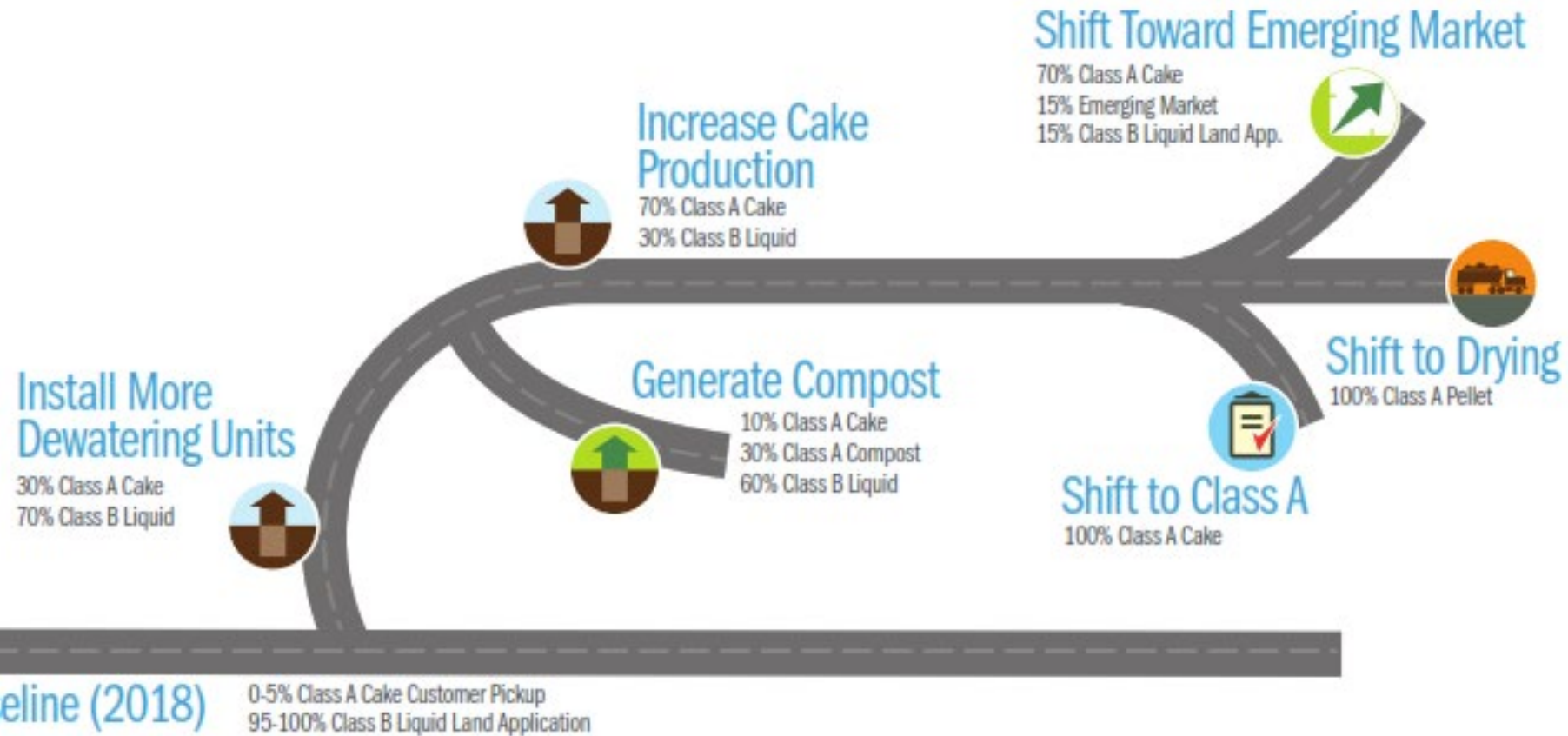
Biosolids Management Study: Goals

Drivers and Model Inputs

- Performance
- Costs
- Energy/Emissions
- Product Quality
- Feed Solids
- Transport/Hauling
- Regulatory Compliance



Biosolids Management Study: Plan



Biosolids Management Study Phases



Biosolids Management Study: Goals & Drivers



Biosolids Management Study: Considerations

Envision Category Impacted?	Decrease in truck traffic and hauling days?	Provides increased capabilities for watershed protection?	End-product provides regional collaboration opportunities?	LCC within 15% of lowest value?	Operational cost within 15% of lowest value?	Product improves soil health management opportunities?	Processing provides resilience to changing regulations?	Approach limits spending on single-use assets with low salvage value?	Approach limits business process adjustments needed from other units of the district?
Quality of Life – Wellbeing									
Leadership – Collaboration									
Leadership - Economy									
Resource Allocation – Energy									
Natural World - Ecology									
Natural World - Protect Surface and Groundwater Quality									
Natural World - Protect Soil Health									
Climate and Resilience – Emissions									
Climate and Resilience – Resilience									



Biosolids Management Study: Considerations

Evaluation Metric	Scoring Guidance (1 – low, 5 – high)	Product 1: Class B Liquid	Product 2: Class B Cake	Product 3: Class A Cake	Product 4: Class A Compost	Product 5: Dried Class A Biosolids	Product 6: Class A Alkaline Stabilized Biosolids
Number of trucks per year	5 – fewest trucks 4 – within 15% of lowest value, 1 – most trucks	Score: Notes:	Score: Notes:	Score: Notes:	Score: Notes:	Score: Notes:	Score: Notes:
Number of hauling days per year	5 – fewest hauling days 4 – within 15% of lowest value, 1 – most hauling days	Score: Notes:	Score: Notes:	Score: Notes:	Score: Notes:	Score: Notes:	Score: Notes:
End-product provides regional collaboration opportunities	5 – Supplements existing collaborations 1 – Minimal opportunities	Score: Notes:	Score: Notes:	Score: Notes:	Score: Notes:	Score: Notes:	Score: Notes:
LCC	5 – Lowest LCC 4 – within 15% of lowest value, 1 – Highest LCC	Score: Notes:	Score: Notes:	Score: Notes:	Score: Notes:	Score: Notes:	Score: Notes:
Annual Operating Cost	5 – Lowest operating cost 4 – within 15% of lowest value, 1 – Highest operating cost	Score: Notes:	Score: Notes:	Score: Notes:	Score: Notes:	Score: Notes:	Score: Notes:
Product impacts on soil health	5 – high potential soil health benefit 1 – Low soil health benefit	Score: Notes:	Score: Notes:	Score: Notes:	Score: Notes:	Score: Notes:	Score: Notes:
Resilience to changing regulations	5 – High flexibility 1 – Low flexibility	Score: Notes:	Score: Notes:	Score: Notes:	Score: Notes:	Score: Notes:	Score: Notes:
Limits spending on single-use assets	5 – High flexibility 1 – Low flexibility	Score: Notes:	Score: Notes:	Score: Notes:	Score: Notes:	Score: Notes:	Score: Notes:
Limits business process adjustments from other units	5 – High flexibility 1 – Low flexibility	Score: Notes:	Score: Notes:	Score: Notes:	Score: Notes:	Score: Notes:	Score: Notes:

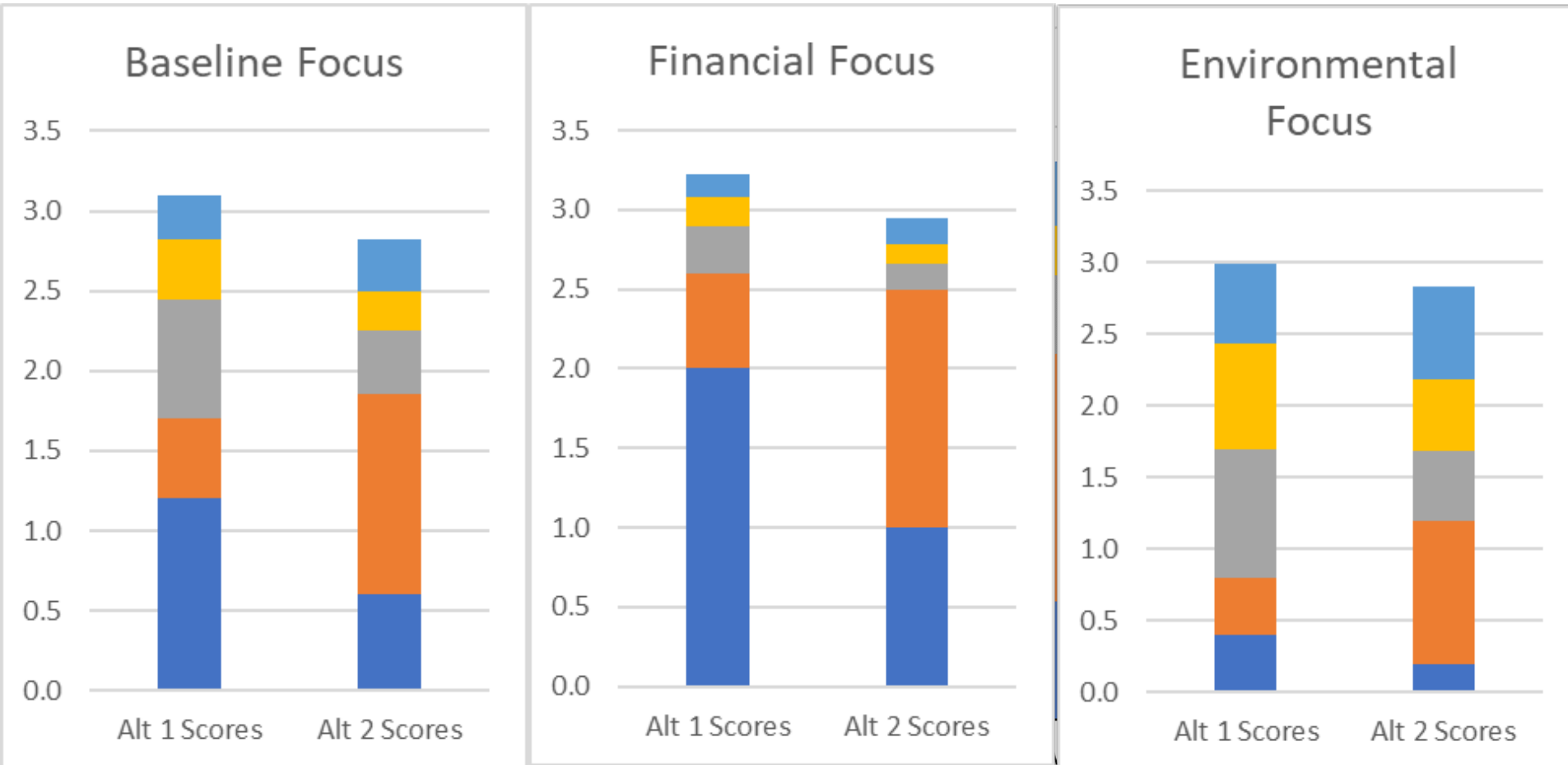
Biosolids Management Study: Considerations

Evaluation Metric	Weight	Product 1: Class B Liquid	Product 2: Class B Cake	Product 3: Class A Cake	Product 4: Class A Compost	Product 5: Dried Class A Biosolids	Product 6: Class A Alkaline Stabilized Biosolids
Number of trucks per year	20%	Score:	Score:	Score:	Score:	Score:	Score:
Number of hauling days per year	20%	Score:	Score:	Score:	Score:	Score:	Score:
End-product provides regional collaboration opportunities	10%	Score:	Score:	Score:	Score:	Score:	Score:
LCC	25%	Score:	Score:	Score:	Score:	Score:	Score:
Annual Operating Cost	5%	Score:	Score:	Score:	Score:	Score:	Score:
Product impacts on soil health	5%	Score:	Score:	Score:	Score:	Score:	Score:
Resilience to changing regulations	5%	Score:	Score:	Score:	Score:	Score:	Score:
Limits spending on single-use assets	5%	Score:	Score:	Score:	Score:	Score:	Score:
Limits business process adjustments from other units	5%	Score:	Score:	Score:	Score:	Score:	Score:



Biosolids Management Study: Considerations

Weighted Total Score



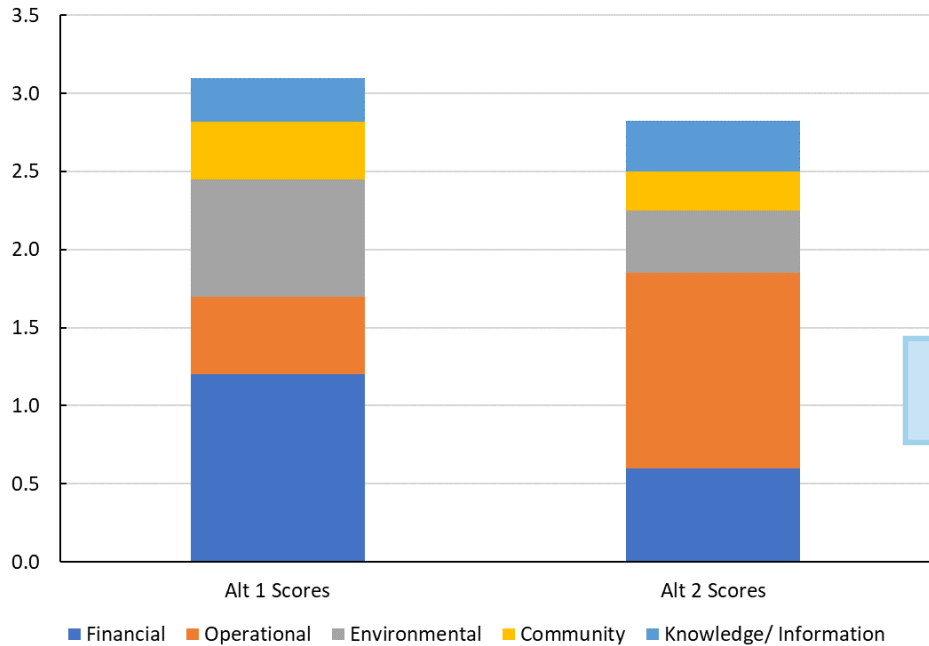
■ Financial ■ Operational ■ Environmental ■ Community ■ Knowledge/ Information

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Biosolids Management Study: Considerations

Weighted Total Score



Questions?

