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Solid Waste Disposal Facility Feasibility and Capital Costs Technical Memorandum

Fall 2024 – Winter 2025

CITY AND BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY

CBJ Solid Waste Study

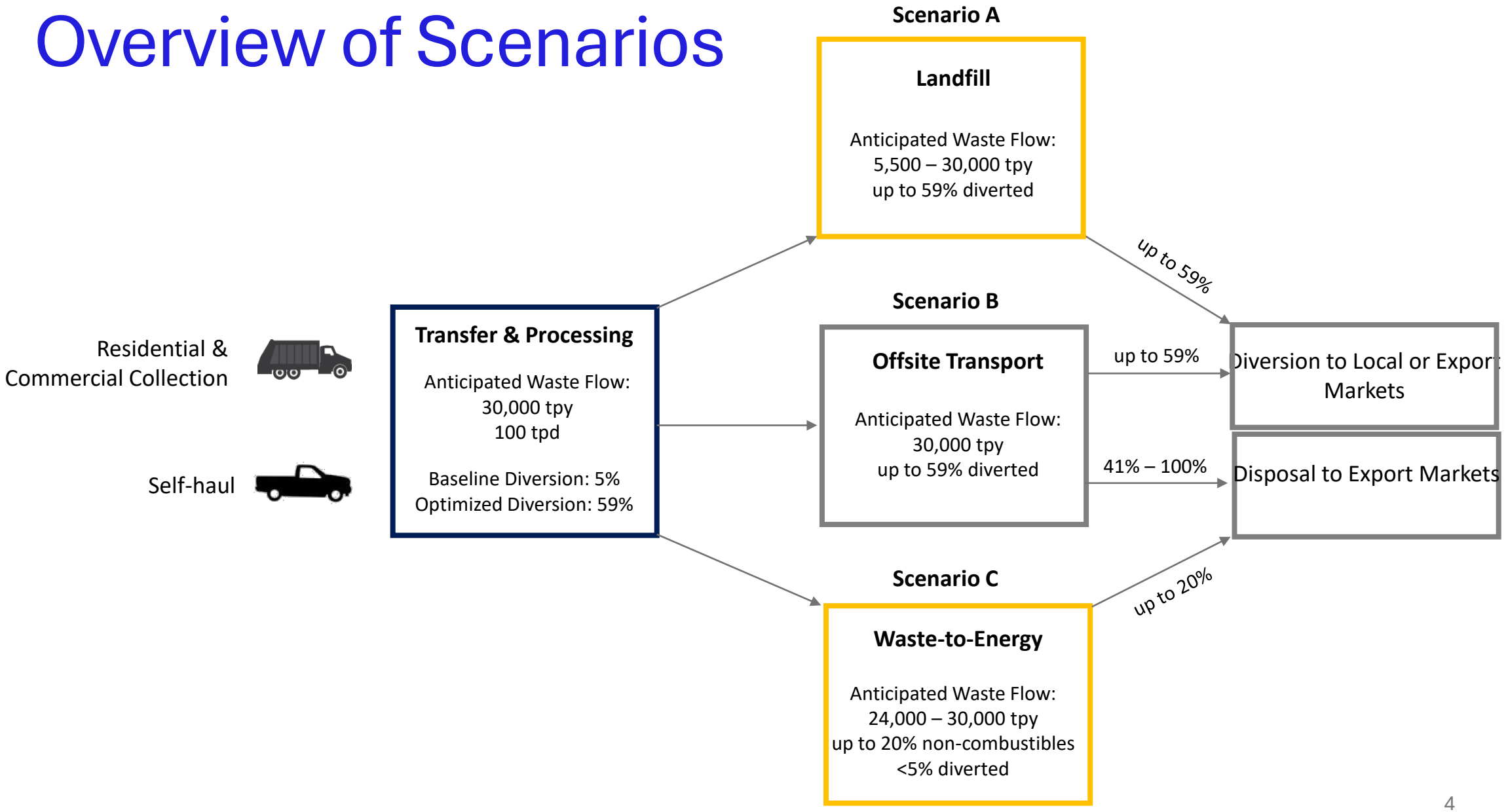
- Objective: Conduct a high-level evaluation of the capital costs and logistical feasibility in relation to three solid waste management scenarios.

- Methodology: Review of publicly available information and subject matter expert input, collaboration with CBJ.

Study Assumptions

1. Unchanging population, waste tonnage, and composition
2. Locations:
   - Transfer processing facility at lower Lemon Creek property
   - Siting study needed for landfill and WTE facility
3. Facility capacity calculations for 50- and 100-year waste stream projections
4. Diversion rates:
   - Current/baseline = 5%
   - Optimized conditions (CBJ Waste Characterization Study) = 59%
5. Existing facilities for barge loading are adequate for transport
6. Financial viability impacted by many factors outside the scope of this study (construction schedule, number of bidders, ownership model, etc.)

Overview of Scenarios



Transfer Processing Facility Capital Costs

Name	Location	Estimate Stage	Estimate Year	Facility Size (SF)	Cost per SF	Adjusted Cost per SF
Central Transfer and Recycling Station	Washington	Class 3 planning estimate	2023	63,000	$540	$800
North Area Recovery Station	California	Engineer's estimate	2023	51,000	$680	$920
Municipality of Anchorage Central Transfer Station	Alaska	Construction estimate	2024	133,000	$800	$1,000
Great Falls Transfer Station	Montana	Class 4 planning estimate	2023	11,000	$630	$1,040
New Transfer Station in Portland Region	Oregon	Order-of-magnitude estimate	2023	13,000	$1,000	$1,550

Transfer processing facility, prepares MSW for <u>local disposal</u>:

$9 million to $20 million (2025$)

Transfer processing facility, prepares MSW for <u>offsite transport</u>:

$14 million to $40 million (2025$)

Landfill Capital Costs

Name	Location	Estimate Stage	Estimate Year	Landfill Footprint (Acres)	Cost per Acre	Adjusted Cost per Acre
Anchorage Landfill Expansion *	Alaska	Construction bid	2020	15	$419,500	$477,500
Western Placer Waste Management Authority Landfill	California	Class 4 planning estimate	2018	253	$1,008,000	$1,654,000
Kodiak Landfill*	Alaska	Payment Records	2013 to 2016	10	$2,282,500	$3,232,000

**Expansion of existing landfill*

50-year landfill, 50- to 100-acre total site area:

$50 million to $162 million (2025$)

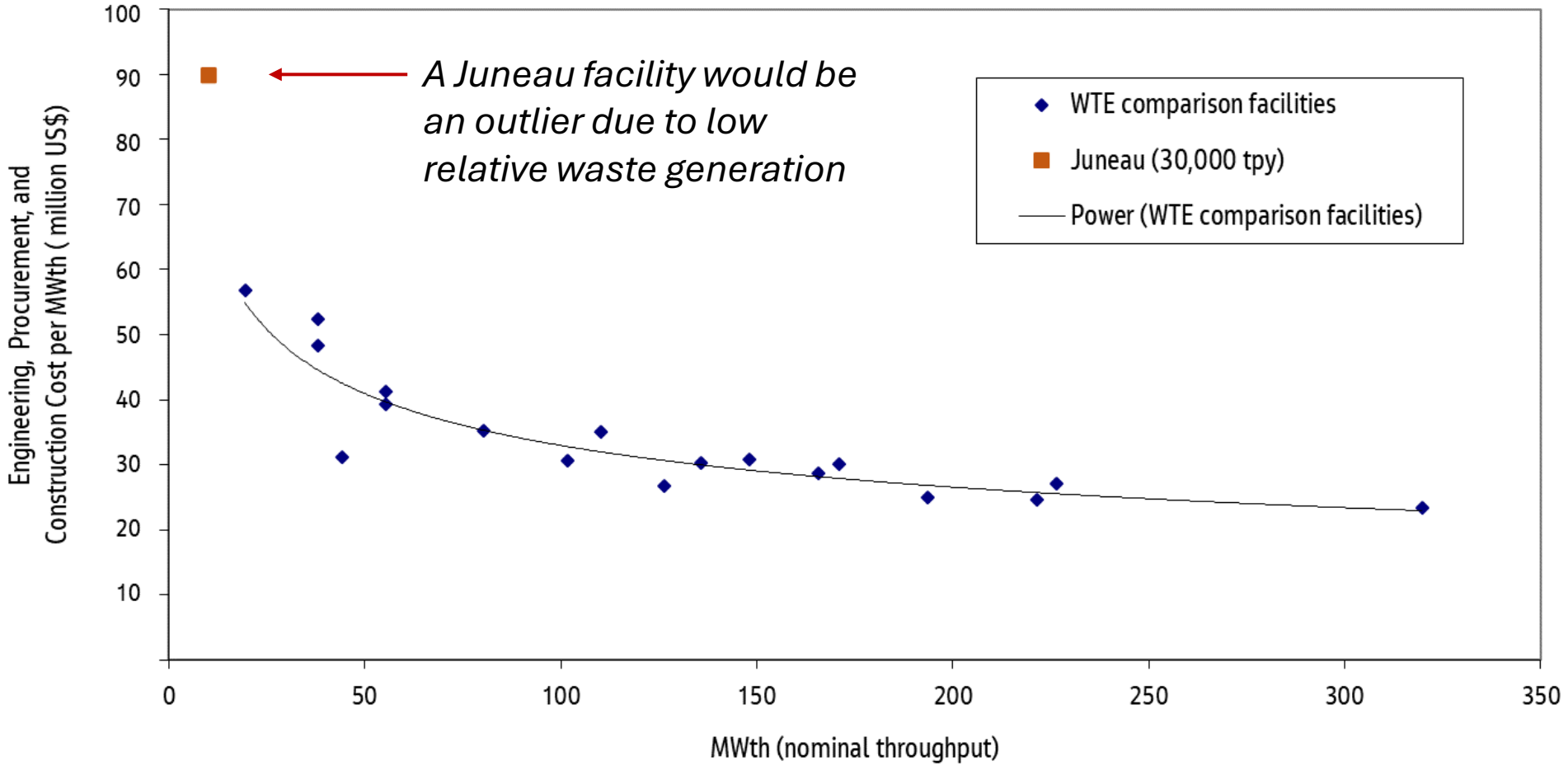
100-year landfill, 100- to 200-acre total site area:

$99 million to $323 million (2025$)

Notes:

1. *Capital estimates vary based on landfill geometry and design parameters. Conservative estimates were used in calculations.*
2. *Landfill capital costs would be applied in phases, while capital costs for other facilities are upfront.*
3. *Costs to construct landfill cells only; operating and maintenance facilities not included.*

Waste-to-Energy Capital Costs



Recommended Next Steps

1. Decide whether CBJ wants to have control in the solid waste management system by owning a solid waste disposal facility.
2. If control is desired, proceed to develop a transfer processing facility that can be used regardless of the scenario selected with design considerations for future expansion
3. Engage with shipping partners and evaluate the capacity of the current shipping facility and the waste hauler's needs for the transfer station.
4. Perform a high-level operating cost estimation for Scenarios A & B (building a new landfill or expanding the transfer station to accommodate shipping waste south for disposal).

Q&A

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