

CIF Project #451- Collection and Processing Decision Making Tree

Project Background

In 2011 MIPC directed the CIF to terminate funding for projects other than those involved in infrastructure rationalization and to undertake a study of an optimized Provincial processing infrastructure. As part of this work, the CIF contracted GS Consulting to consolidate its findings from previous projects and develop a decision making tree that would help to break out the principles and concepts that could be used to ground truth the provincial study.

Summary of Results

Utilizing modeling developed under CIF Project 362, GS Consulting concluded that hubs or consolidation points supporting collection depots with approximately 2 hrs drive times or 280km catchments was the theoretical ideal for optimizing collection system efficiencies. Hubs of approximately 7,500 tonnes or more was proposed. Where insufficient tonnage exists within the catchment area, longer drive times between collection depots and consolidation hubs are warranted vs construction of infrastructure. Within this recommended system, front-end, single stream collection from feeder depots is generally considered the least cost option where single stream processing capability is available. This conclusion is driven by the efficiencies gained through compaction of loads and ability to consolidate small tonnages on one truck. As volumes increase at individual feeder depots (i.e., 700MT or greater), on-site compactors become more economical.

	CURRENT DAY EXISTING CONDITIONS					CONDITION BASED ON MRF RATIONALIZATION
	50km (45 min)	70km (1 hour)	105km (1.5 hours)		140km (2 hours) or greater	
Distance in one direction to MRF	Curbside	Depot Roll-off Single Stream	Depot Roll-off Two Stream	Depot - Front End Single Stream	Depot Front End Two Stream	Best Value Depot Collection Method
Less than 500 tonnes per year	Best Value	Switch to Front-end depot	Switch to single stream Front-end	Best Value	Switch to single stream Front-end	Utilize single stream Front-end
Greater than 500 but less than 1000	Best Value	Switch to Front-end depot	Switch to single stream Front-end	Best Value	Switch to single stream Front-end	Utilize single stream Front-end
Greater than 1000 but less than 2000	Best Value	Switch to Front-end depot	Switch to single stream Front-end	Best Value	Switch to single stream Front-end	Utilize single stream Front-end
Greater than 2000 but less than 3000	Best Value	Switch to Front-end depot	Switch to single stream Front-end	Best Value	Switch to single stream Front-end	Utilize single stream Front-end
Greater than 3000 but less than 5000	Best Value	Switch to Solar Compactor	Switch to single stream Solar Compactor	Switch to single stream Solar Compactor	Switch to single stream Solar Compactor	Utilize either Single Stream Front-End or Solar Compactor
Greater than 5000 but less than 10000	Best Value	Switch to Transtor	Switch to Single Stream Transtor	Switch to Single Stream Transtor	Switch to Single Stream Transtor	Utilize either Single Stream Transtor or Transfer Station
Above 10,000 tonnes per year	Best Value	Switch to Transfer Station	Switch to Single Stream Transfer Station	Switch to Single Stream Transfer Station	Switch to Single Stream Transfer Station	Convert this high volume Depot to a Single Stream Transfer Station