

1.1 ESTIMATED QUANTITIES OF RECYCLABLES IN DEFINED REGIONS

Based on the methodologies implemented, the following quantities of recyclables were estimated for annual collection by a combination of curbside and dropoff collection as applicable to contributing communities and subsets within the Regions indicated:

Estimated Quantities of Recyclables Implemented in Facility Cost Analyses

Region	Approximate Estimated Recyclables Collected Annually (Tons)
City of Minot Residential MSW Collection Accounts	2,600
Primary Region (NDDH Region II)	4,000
Secondary Region (State of ND)	8,750

These quantities were deemed reasonable estimates based on comparisons to national average MSW diversions, published industry data, and data regarding existing mature recycling programs in the State of North Dakota. These projected volumes are less than the typical industry standard for development of fully automated single stream recyclables materials recovery facilities (MRFs) designed to process a minimum of 10 Tons per hour of materials (approximately 20,000 Tons per year).

The City of Minot may be well-served by working with adjacent communities such as the cities of Burlington and Surrey to implement curbside recycling programs in those cities, thereby increasing diversion rates of regionally available recyclable materials; this potential was implemented in the analysis of quantities. The City could also consider offering incentive programs to further encourage regional participation and recyclables diversion from the regional municipal solid waste stream.

1.2 RECYCLABLES COLLECTION RECOMMENDATIONS

Because the anticipated quantities of recyclables in the Regions examined are limited, maximizing participation and minimizing contamination are critical to the relative success of a regional recycling program. Commingled collection (as opposed to source-separated) collection is recommended to maximize participation, along with a targeted education program to minimize contamination.

The City of Minot currently collects MSW twice per week for residential collection accounts. Approximately 15,000 Tons of MSW are collected annually. As part of recent Public Works solid waste planning and budgeting, it was anticipated that one of two current collection events per week would change to recyclables collection, resulting in weekly collection of residential MSW and weekly collection of residential recyclables. Based on the anticipated quantities of commingled residential recyclables collection in the City of Minot (approximately 2,600 Tons per year), it may be prudent to consider transitioning only one of four collection events per two-week cycle from MSW collection to recyclables collection.

In order to maximize capture of available recyclables from multifamily and other potential local contributing entities such as commercial customers, implementation of

dropoff collection sites in select locations is also recommended. Additional curbside opportunities could also be considered for collections from consolidated multifamily residential and small business scenarios.

1.3 RECYCLABLES PROCESSING RECOMMENDATIONS

Three options were considered for processing of recyclables, including construction and operation of a recyclable materials recovery facility (MRF), construction and operation of a transfer facility, and contracted recyclables collection and hauling to a private processing or transfer facility. The estimated costs for MRF and consolidation facility development were based in part on locating the processing facility on City-owned property on or near the City’s existing solid waste management facility to accommodate shared operational personnel. Based on the methodologies implemented, the following unit costs were estimated for each facility type:

Summary of Processing Cost Comparisons (\$ per Ton of Recyclables Collected)

Processing Facility Type	Estimated Quantity of Recyclables Collected Annually (Tons)	Estimated Cost per Ton of Recyclables Collected
MRF serving Primary Region (NDDH Region II)	4,000	\$254
MRF Serving Secondary Region (State of ND)	8,750	\$175
Consolidation / Transfer Facility and Long Haul serving Primary Region (NDDH Region II)	4,000	\$ 211
None - Contracted Collection, Haul and Processing for City of Minot Residential Accounts	2,600	\$450

As demonstrated by the table above, implementation of recyclables processing is anticipated to result in a net cost scenario for the City of Minot. Current City MSW landfill disposal fees for MSW are approximately \$40 per Ton, which covers disposal operations costs despite the fact that tipping fees are not charged to municipal solid waste from residential garbage collections performed by the City.

It is most reasonable to anticipate that actual quantities of recyclables collected will lie somewhere between the 4,000 and 8,750 tons estimated for the regions of interest. Therefore, the preferred economies of scale for a facility are not likely to be realized. In addition, the estimated per-ton costs above are based on fully-developed collection and processing programs, which historically take three to five years to mature. Should the City choose to develop a facility based on the analyses performed, it is recommended that a regional consolidation / transfer station be developed in a location on or near the City’s existing solid waste management facility.