

GROOT INDUSTRIES LAKE TRANSFER STATION ENERGY AND EMISSIONS LIFE-CYCLE ASSESSMENT

Shaw Environmental, Inc. (Shaw) was retained by Groot Industries, Inc. (Groot) to prepare a life-cycle assessment of the annual energy consumption and emissions associated with the proposed operation of the Lake Transfer Station in Round Lake Park. Annual energy consumption and emissions were compared for both current conditions and development of the Lake Transfer Station to assess the environmental impact of the proposed transfer station.

The assessment was performed to address Section 4.1.2 of the *2009 Solid Waste Management Plan Update for Lake County*, which requires the developer of any new disposal facility (including a transfer station) to demonstrate “that its proposed disposal option is superior to the current system (for at least three of the four parameters, one of which must be carbon dioxide emissions)”¹. Parameters to be assessed include net annual energy consumption, sulfur oxides (SO_x) emissions, nitrogen oxides (NO_x) emissions, and carbon dioxide (CO₂) emissions.

For purposes of this analysis, the following two scenarios were assessed:

1. Current Conditions Scenario: Under this scenario, the Countryside Landfill and Veolia ES Zion Landfill are assumed to receive the majority of the waste disposed by Lake County until they reach capacity. Once capacity is reached, all waste from Lake County will be exported in collection trucks to transfer stations located outside the County (the next nearest facilities), then transfer hauled to regional landfills.
2. Lake Transfer Station Scenario: Under this scenario, the Lake Transfer Station will begin operating prior to the closure of the Countryside Landfill and Veolia ES Zion Landfill. These three facilities will receive the majority of waste disposed by Lake County, operating in an interim condition until the landfills reach capacity. Once the landfills reach capacity, a portion of the County’s waste will continue to be delivered to the Lake Transfer Station, and the remainder will be exported to transfer stations located outside the County. Waste will then be transfer hauled to regional landfills.

The following sections summarize the assumptions and methodology applied to conduct the life-cycle assessment and detail the findings of the assessment. Detailed calculations are provided in Attachment A.

Facility Background

The proposed Lake Transfer Station will be located in the Village of Round Lake Park, at the northeast corner of the intersection of Route 120 and Porter Drive. The facility is proposed to receive 750 tons per day of municipal solid waste from residential, commercial, and light

¹ Section 4.2.5, Recommendation T.5, further specifies that the life cycle assessment is to address the “life cycle environmental impacts of the proposed transfer and disposal system compared to the current and projected disposal system in Lake County”. The assessment therefore considers transportation-related emissions for the disposal of all municipal solid waste from Lake County.



industrial sources within Lake County. The facility is expected to operate from 4:00 A.M. to 8:00 P.M. Monday through Friday and 4:00 A.M. to 12:00 P.M. Saturday.

All waste will be handled within an approximately 28,000 square foot transfer building. Upon weighing in at the facility scale, collection vehicles will be directed to the transfer station building. Waste will be discharged on the tipping floor within the transfer station building, consolidated by a rubber-tired front-end loader, then loaded into a transfer trailer by an excavator equipped with a grapple attachment.

Assumptions

The life-cycle assessment was developed based on the following assumptions:

- Municipal waste is disposed at a rate of 6.1 pounds per capita per day (pcd) and is assumed to remain constant throughout the analysis. The waste disposal rate is based on 2011 disposal data for the Chicago metropolitan area (which includes Lake County) obtained from state regulatory agencies. This represents the most recent data on disposal quantities.
- Population is projected to grow from 2010 US Census populations, with growth continuing throughout the analysis period. Annual populations are calculated based on straight-line interpolation of 2010 US Census data and 2040 Chicago Metropolitan Agency for Planning (CMAP) projections for Lake County and its townships. Population growth is assumed to remain linear beyond 2040, and population projections are extrapolated for these years accordingly.
- The analysis was conducted for a 20-year period (2016-2035) and a 30-year period (2016-2045). The transfer station is expected to have an operating life of a minimum of 20 years, and experience with other facilities indicates that a transfer station may have an operating life of 30 years or more.
- The proposed Lake Transfer Station will begin operating by 2016. The transfer station is assumed to operate at its proposed capacity of 750 tons per day (214,500 tons per year) for each year of the analysis.
- Waste disposed by Lake County is primarily managed at facilities within the County until the in-county landfills close, with an estimated 20 percent of the County's waste exported to transfer stations outside the County. The current and future distribution of Lake County waste between Countryside Landfill and Veolia ES Zion Landfill is based on the historical average distribution of Lake County waste between the landfills as reported in the facility audit reports dating from 2003 through 2011. The estimate of waste exported from the County is based on relative export quantities from Groot Industries' collection operations in Lake County. Under the Lake Transfer Station Scenario, landfill tonnages are proportionally reduced by the tonnage projected to be delivered to the transfer station.
- Projected landfill closure dates are based on remaining capacity reported to IEPA on the annual Landfill Capacity Certification Forms by each landfill as of January 1, 2012 and average quantities of waste received at each facility over the period 2007



to 2011. The full expansion capacity at Veolia ES Zion Landfill has been included, though an IEPA permit has not yet been issued for a portion of the expansion. Landfill closure dates are rounded to the end of the calculated closure year such that no partial-year calculations have been made. Projected landfill closure dates are calculated for the landfills in aggregate, and not individually.

- The average weight of loads delivered by collection vehicles (i.e., packer and roll-off vehicles which collect waste from residents and businesses) is 6 tons, and average fuel efficiency is 4 miles per gallon. The average weight of transfer-haul loads is 24 tons, and average fuel efficiency is 5 miles per gallon.
- The proposed Lake Transfer Station will operate 16 hours per operating day (with Saturdays representing $\frac{1}{2}$ operating day). The rubber-tired front-end loader is assumed to operate during all hours of operation. The grapple excavator is assumed to operate 8 hours per operating day, loading a projected 32 transfer trailers daily (750 tons/day / 24 tons/load = 31.25 loads/day) at a conservative transfer trailer loadout rate of 15 minutes per load.
- Electricity usage by the transfer facility is assumed to be equivalent to current electricity usage at Groot's DuKane Transfer Station in West Chicago. The facilities are similar in square footage, hours of operation, and electrical systems, and therefore are expected to use comparable amounts of electricity annually.

Methodology

To complete the life-cycle assessment for the two scenarios identified, Shaw performed the following steps. Detailed spreadsheets documenting the analysis are provided in Attachment A.

1. Distances were calculated from the geographic center of each political township in Lake County to the following in-county facilities:
 - Countryside Landfill
 - Veolia ES Zion Landfill
 - Lake Transfer Station

The distance from each township to each in-county facility was weighted by the 2010 township population, and a weighted average distance to each in-county facility was then calculated (refer to Table A-1). This represents the average distance waste must be direct-hauled to in-county landfills or the proposed transfer station.

2. Distances were calculated from the geographic center of each political township in Lake County to the following out-of-county transfer stations:
 - Bluff City Transfer Station
 - Glenview Transfer Station
 - Rolling Meadows Transfer Station
 - Veolia ES Evanston Transfer Station
 - Veolia ES Northbrook Transfer Station



- Virginia Road Transfer Station
- WM-Wheeling Transfer Station

The distance from each township to each out-of-county transfer station was weighted by the 2010 township population, and a weighted average distance to all out-of-county transfer stations was then calculated (refer to Table A-2). This represents the average distance waste must be direct-hauled to out-of-county transfer stations.

3. Distances were calculated from the proposed Lake Transfer Station to the following regional landfills intended to receive waste from the Lake Transfer Station:

- Rochelle Municipal Landfill
- Winnebago Landfill

A simple average of the distance to these regional landfills was calculated, representing the average distance waste may be hauled for transfer and disposal from the Lake Transfer Station (refer to Table A-3).

4. Distances were calculated from the out-of-county transfer stations identified in Step 2 to the following regional landfills that receive waste from the out-of-county transfer stations:

- Lee County Landfill
- Prairie Hill Landfill
- Rochelle Municipal Landfill
- Veolia ES Orchard Hills Landfill
- Winnebago Landfill

A simple average of the distance to these regional landfills from all out-of-county transfer stations was calculated, representing the average distance waste may be hauled for transfer and disposal from out-of-county transfer stations (refer to Table A-3).

5. Using the average distances calculated in Steps 1-4 above, four conditions were then modeled, described as follows:

- Condition 1: Current Conditions (In-County Landfill and Export) – 20% of Lake County waste is hauled to out-of-county transfer stations and transferred to out-of-county regional landfills for disposal, and the remainder is disposed at Countryside Landfill and Veolia ES Zion Landfill.
- Condition 2: Future Conditions (Export) – 100% of Lake County waste is hauled to out-of-county transfer stations and transferred to out-of-county regional landfills for disposal.
- Condition 3: Interim Conditions (In-County Transfer/Landfill and Export) – A portion of Lake County's waste is hauled to Lake Transfer Station and transferred to out-of-county regional landfills. The remainder is disposed at Countryside Landfill and Veolia ES Zion Landfill or hauled to out-of-



county transfer stations and transferred to out-of-county regional landfills for disposal.

- Condition 4: Future Conditions (In-County Transfer and Export) – A portion of Lake County's waste is hauled to Lake Transfer Station, and the remainder is hauled to out-of-county transfer stations. All waste is then ultimately transferred to out-of-county regional landfills.

For each condition, the annual tonnage managed, annual direct-haul truckloads, annual transfer-haul truckloads, annual direct-haul vehicle miles traveled (VMT), annual transfer-haul VMT, and annual total VMT was calculated for each facility (refer to Table A-4).

6. A VMT summary for each of the two assessment scenarios was compiled based on the condition observed for each year of the analysis (refer to Table A-5). The VMT summary provides the basis for calculating annual energy consumption and emissions for direct-haul and transfer-haul vehicles for each scenario.
 - In the Current Conditions Scenario, Condition 1: Current Conditions (In-County Landfill and Export) will be experienced from 2016-2027. Condition 2: Future Conditions (Export) will be experienced beginning in 2028 and continue through the end of the analysis period.
 - In the Lake Transfer Station Scenario, Condition 3: Interim Conditions (In-County Transfer/Landfill and Export) will be experienced from 2016-2031. Condition 4: Future Conditions (In-County Transfer and Export) will be experienced beginning in 2032 and continue through the end of the analysis period.
7. An emissions summary for each of the two assessment scenarios was compiled based on the annual VMT calculated in Table A-5 and the proposed transfer station operations. See Attachment C for a summary of model inputs.
 - Collection and transfer vehicle emissions of NO_x and SO_x were calculated using emission factors calculated by USEPA's Motor Vehicle Emissions Simulator (MOVES) model.
 - Collection and transfer vehicle emissions of CO₂ were calculated using emission factors published by The Climate Registry's General Reporting Protocol and assumed fuel efficiency for each vehicle type.
 - Transfer station equipment emissions were calculated using emission factors calculated by USEPA's NONROAD emissions model.
 - Transfer facility emissions from electricity usage were calculated using year 2009 eGRID emissions factors.
8. Annual energy consumption for each of the two assessment scenarios was compiled based on the annual VMT calculated in Table A-5 and estimated fuel efficiency for



direct-haul and transfer-haul vehicles and daily fuel consumption by mobile equipment used at the Lake Transfer Station (refer to Table A-7).

Findings

Based on the life-cycle assessment methodology identified in the previous section and the detailed tables contained in Attachment A, the operation of the Lake Transfer Station is projected to result in reductions in energy consumption, nitrogen oxides emissions, and carbon dioxide emissions compared to the current waste disposal system for both the 20-year and 30-year analysis periods. Life-cycle emissions and energy consumption are summarized in Table 1 below.

TABLE 1. LIFE-CYCLE ASSESSMENT SUMMARY				
	NO _x (tons)	SO _x (tons)	CO ₂ (tons)	Energy Consumption (gallons)
20-Year Life-Cycle Assessment				
Current Conditions Scenario	533.9	2.8	516,181.0	46,137,669
Lake Transfer Station Scenario	513.9	14.4	452,740.4	39,937,451
Change (Current – Lake TS)	(20.0)	11.6	(63,440.6)	(6,200,218)
30-Year Life-Cycle Assessment				
Current Conditions Scenario	825.3	4.8	942,272.7	84,223,065
Lake Transfer Station Scenario	789.5	22.4	851,580.4	75,322,138
Change (Current – Lake TS)	(35.8)	17.6	(90,692.3)	(8,900,927)

A sensitivity analysis was also conducted, applying more conservative assumptions. The following assumptions were made for this sensitivity analysis:

1. Municipal waste is projected to be disposed at a lower per capita rate of 4.77 pounds per capita per day (pcd) in 2010, based on 2010 data reported in Table 2 of Lake County's *60% Recycling Task Force Report*, decreasing to 3.48 pcd in 2020, then remaining constant through the remainder of the analysis.
2. Less waste is projected to be exported from the County under existing conditions. An estimated 13 percent of waste disposed by Lake County is assumed to be exported to out-of-county transfer stations under current conditions, based on County estimates reported in Table 2 of Lake County's *60% Recycling Task Force Report*.

Even under these conservative assumptions, the operation of the Lake Transfer Station is projected to result in reductions in energy consumption, nitrogen oxides emissions, and carbon dioxide emissions compared to the current waste disposal system for the 30-year analysis period, as documented by the detailed calculations contained in Attachment B.



Conclusion

The proposed Lake Transfer Station is projected to result in reductions in annual and life-cycle energy consumption, nitrogen oxides emissions, and carbon dioxide emissions. The Lake Transfer Station will therefore result in a system that is superior to the current disposal system for three of the four parameters assessed and satisfies this requirement of the 2009 *Solid Waste Management Plan Update for Lake County*.



Attachment A
Detailed Calculations

Table A-1: Travel Distances and Times to In-County Facilities

Township	Population (2010)	COUNTRYSIDE LANDFILL			VEOLIA ES ZION LANDFILL			LAKE TRANSFER STATION		
		Distance (mi.)	Est. Drive Time (min.)	Est. Travel Speed (mph)	Distance (mi.)	Est. Drive Time (min.)	Est. Travel Speed (mph)	Distance (mi.)	Est. Drive Time (min.)	Est. Travel Speed (mph)
Antioch	27,745	12.3	23	32.1	13	25	31.2	10.8	21	30.9
Avon	65,001	4.2	8	31.5	18.8	32	35.3	1.8	4	27.0
Benton-Zion	43,364	18.1	35	31.0	3.5	8	26.3	19.8	38	31.3
Cuba	16,826	14.8	27	32.9	34.3	58	35.5	15.5	25	37.2
Deerfield	34,129	19.8	33	36.0	27.2	37	44.1	23.7	36	39.5
Ela	42,654	10.8	22	29.5	34.5	51	40.6	16.8	26	38.8
Fremont	32,337	4.7	9	31.3	24.2	41	35.4	7.3	13	33.7
Grant	26,523	9.5	20	28.5	21.9	41	32.0	6.2	13	28.6
Lake Villa	40,276	7.3	14	31.3	14.7	27	32.7	5.7	12	28.5
Libertyville	53,139	6.8	14	29.1	18.5	31	35.8	9.4	21	26.9
Newport	6,770	15.7	25	37.7	5.3	9	35.3	17.5	29	36.2
Shields	39,062	12.2	25	29.3	14.5	29	30.0	16.0	29	33.1
Vernon	67,095	12.2	22	33.3	28.5	40	42.8	16.7	29	34.6
Warren	64,841	7.2	15	28.8	13.2	22	36.0	8.3	19	26.2
Wauconda	21,730	11.3	18	37.7	27.8	46	36.3	7.4	10	44.4
Waukegan	90,893	12.1	25	29.0	9.3	20	27.9	13.8	29	28.6
West Deerfield	31,077	15.3	28	32.8	25.3	36	42.2	20.9	34	36.9
Total / Wtd. Avg.	703,462	10.7	21	31.1	18.8	31	35.0	12.3	23	31.7

Table A-2: Travel Distances and Times to Out-of-County Transfer Stations

Township	Population (2010)	BLUFF CITY TRANSFER STATION			GLENVIEW TRANSFER STATION			ROLLING MEADOWS TRANSFER STATION			VEOLIA ES EVANSTON TRANSFER STATION			VEOLIA ES NORTHBROOK TRANSFER STATION			VIRGINIA ROAD TRANSFER STATION			WM-WHEELING TRANSFER STATION			AVERAGE		
		Distance (mi.)	Est. Drive Time (min.)	Est. Travel Speed (mph)	Distance (mi.)	Est. Drive Time (min.)	Est. Travel Speed (mph)	Distance (mi.)	Est. Drive Time (min.)	Est. Travel Speed (mph)	Distance (mi.)	Est. Drive Time (min.)	Est. Travel Speed (mph)	Distance (mi.)	Est. Drive Time (min.)	Est. Travel Speed (mph)	Distance (mi.)	Est. Drive Time (min.)	Est. Travel Speed (mph)	Distance (mi.)	Est. Drive Time (min.)	Est. Travel Speed (mph)	Distance (mi.)	Est. Drive Time (min.)	Est. Travel Speed (mph)
Antioch	27,745	38.1	67	34.1	34.8	51	40.9	31.2	46	40.7	44.6	65	41.2	36.5	53	41.1	29.9	48	37.4	31.6	48	39.5	35.2	64.0	39.2
Avon	65,001	32.3	58	33.4	25.5	39	39.2	25.5	38	40.3	37.1	55	40.5	29	44	39.5	22	40	33.0	22.3	35	38.2	27.7	44.1	37.6
Benton-Zion	43,364	55.6	89	37.5	34	51	40.0	37.1	62	35.9	35	59	35.6	32.1	51	37.8	41.8	74	33.9	30.8	48	38.5	38.1	62.0	36.8
Cuba	16,826	18.1	37	29.4	20	32	37.5	11.9	22	32.5	30.3	54	33.7	20	38	31.6	10.4	22	28.4	16.8	29	34.8	18.2	33.4	32.7
Deerfield	34,129	35.4	62	34.3	13.7	24	34.3	17.6	34	31.1	14.2	24	35.5	8.2	18	27.3	28.8	58	29.8	10.5	20	31.5	18.3	34.3	32.1
Ela	42,654	20.9	42	29.9	16	23	41.7	8.2	16	30.8	26.6	43	37.1	16.7	30	33.4	14.2	30	28.4	12.8	19	40.4	16.5	29.0	34.1
Fremont	32,337	27.7	54	30.8	19	30	38.0	18.1	33	32.9	29.6	50	35.5	19.7	37	31.9	20.3	37	32.9	15.8	26	36.5	21.5	38.1	33.8
Grant	26,523	30.4	54	33.8	31.6	44	43.1	23.6	34	41.6	42	67	37.6	31.7	50	38.0	22.3	36	37.2	28.4	41	41.6	30.0	46.6	38.7
Lake Villa	40,276	36.5	64	34.2	28.6	42	40.9	29.7	43	41.4	38.4	56	41.1	30.2	44	41.2	28.3	45	37.7	25.4	39	39.1	31.0	47.6	39.1
Libertyville	53,139	32.2	63	30.7	15.8	25	37.9	19.7	35	33.8	25.4	39	39.1	17.3	27	38.4	24.8	45	33.1	12.6	22	34.4	21.1	36.6	34.6
Newport	6,770	36.8	81	27.3	32.6	43	45.5	36.5	52	42.1	38.9	54	43.2	30.7	42	43.9	39.4	64	36.9	29.4	39	45.2	34.9	53.6	39.1
Shields	39,062	43.0	69	37.4	21.3	32	39.9	25.1	42	35.9	22.3	39	34.3	15.1	32	28.3	30.1	57	31.7	18.1	29	37.4	25.0	42.9	35.0
Vernon	67,095	30.0	48	37.5	10	12	50.0	12.2	21	34.9	20.6	32	38.6	10.7	19	33.8	20.2	40	30.3	6.7	9	44.7	15.8	25.9	36.6
Warren	64,841	38.2	72	31.8	26.3	36	43.8	24.9	44	34.0	32.6	47	41.6	24.4	36	40.7	30.9	54	34.3	23.1	32	43.3	28.6	45.9	37.5
Wauconda	21,730	23.2	43	32.4	24.3	33	44.2	16.3	22	44.5	34.7	55	37.9	24.4	39	37.5	15	25	36.0	21.1	29	43.7	22.7	35.1	38.8
Waukegan	90,893	49.7	79	37.7	28	42	40.0	31.8	52	36.7	29.1	50	34.9	26.1	42	37.3	35.8	64	33.6	24.8	39	38.2	32.2	52.6	36.7
West Deerfield	31,077	35.0	57	36.8	13.3	20	39.9	17.2	30	34.4	16.2	27	36.0	7.3	15	29.2	25	50	30.0	10.1	17	35.6	17.7	30.9	34.5
Total / Wtd. Avg.	703,462	36.1	63	34.2	22.7	33	41.1	23.0	38	36.2	29.6	47	37.8	22.0	36	36.1	26.6	48	33.0	19.5	30	39.0	25.6	42	36.3

Table A-3: Travel Distances and Times from Transfer Stations to Regional Landfills

Transfer Station	LEE COUNTY LANDFILL			PRAIRIE HILL LANDFILL			ROCHELLE MUNICIPAL LANDFILL			VEOLIA ES ORCHARD HILLS LANDFILL			WINNEBAGO LANDFILL			AVERAGE		
	Distance (mi.)	Est. Drive Time (min.)	Est. Travel Speed (mph)	Distance (mi.)	Est. Drive Time (min.)	Est. Travel Speed (mph)	Distance (mi.)	Est. Drive Time (min.)	Est. Travel Speed (mph)	Distance (mi.)	Est. Drive Time (min.)	Est. Travel Speed (mph)	Distance (mi.)	Est. Drive Time (min.)	Est. Travel Speed (mph)	Distance (mi.)	Est. Drive Time (min.)	Est. Travel Speed (mph)
Bluff City	82.3	105	47.0	110	114	57.9	64.9	73	53.3	54.9	67	49.2	53.1	64	49.8	73.0	84.6	51.8
Glenview	98.0	122	48.2	125	130	57.7	80.6	89	54.3	71.4	90	47.6	69.6	87	48.0	88.9	103.6	51.5
Rolling Meadows	96.1	119	48.5	123	127	58.1	78.8	86	55.0	65.8	78	50.6	64	75	51.2	85.5	97.0	52.9
Veolia ES Evanston	105.0	139	45.3	132	147	53.9	87.4	106	49.5	84.3	110	46.0	82.5	107	46.3	98.2	121.8	48.4
Veolia ES Northbrook	102.0	128	47.8	130	136	57.4	84.9	95	53.6	75.6	96	47.3	73.8	93	47.6	93.3	109.6	51.1
Virginia Road	96.3	119	48.6	110	125	52.8	62.1	81	46.0	47.9	68	42.3	46.1	65	42.6	72.5	91.6	47.5
WM-Wheeling	102.0	128	47.8	129	136	56.9	84.8	95	53.6	75.3	93	48.6	73.5	90	49.0	92.9	108.4	51.4
Average	97.4	123	47.6	122.7	131	56.4	77.6	89	52.2	67.9	86	47.4	66.1	83	47.8	86.3	102	50.6
Lake	NA	NA	NA	NA	NA	NA	76	105	43.4	NA	NA	NA	60.1	99	36.4	68.1	102.0	40.1

Table A-4: Condition 1: Current Conditions (Countryside LF, Veolia ES Zion LF, 20% Export to Out-of-County Transfer Stations)

Disposal Rate (pcd) 6.1 pcd
Average Direct-Haul Payload 6 tons
Average Transfer-Haul Payload 24 tons

System Tonnage Distribution	% Share	Distance (one-way)
Countryside LF	41%	10.7
Zion LF	39%	18.8
Out-of-County TS	20%	25.6
Total	100%	
Lake TS		12.3

Transfer Loads to LF	
From Lake TS	68.1
From Out-of-County TS	86.3

Year	1 2016	2 2017	3 2018	4 2019	5 2020	6 2021	7 2022	8 2023	9 2024	10 2025	11 2026	12 2027	13 2028	14 2029	15 2030
Population	753,504	761,845	770,185	778,526	786,866	795,206	803,547	811,887	820,228	828,568	836,908	845,249	853,589	861,930	870,270
Annual Tons	838,838	848,124	857,408	866,694	875,979	885,263	894,549	903,833	913,119	922,403	931,688	940,973	950,258	959,544	968,828
Countryside LF	343,924	347,731	351,537	355,345	359,151	362,958	366,765	370,572	374,379	378,185	381,992	385,799	389,606	393,413	397,219
Zion LF	327,147	330,768	334,389	338,011	341,632	345,253	348,874	352,495	356,116	359,737	363,358	366,979	370,601	374,222	377,843
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	167,768	169,625	171,482	173,339	175,196	177,053	178,910	180,767	182,624	184,481	186,338	188,195	190,052	191,909	193,766
Annual Truckloads (Direct)	139,807	141,354	142,902	144,449	145,997	147,544	149,092	150,639	152,187	153,734	155,281	156,829	158,376	159,924	161,471
Countryside LF	57,321	57,955	58,590	59,224	59,859	60,493	61,128	61,762	62,397	63,031	63,665	64,300	64,934	65,569	66,203
Zion LF	54,525	55,128	55,732	56,335	56,939	57,542	58,146	58,749	59,353	59,956	60,560	61,163	61,767	62,370	62,974
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	27,961	28,271	28,580	28,890	29,199	29,509	29,818	30,128	30,437	30,747	31,056	31,366	31,675	31,985	32,294
Annual Truckloads (Transfer)	6,990	7,068	7,145	7,222	7,300	7,377	7,455	7,532	7,609	7,687	7,764	7,841	7,919	7,996	8,074
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	6,990	7,068	7,145	7,222	7,300	7,377	7,455	7,532	7,609	7,687	7,764	7,841	7,919	7,996	8,074
Annual VMT (Direct)	4,708,412	4,760,525	4,812,645	4,864,758	4,916,878	4,968,990	5,021,111	5,073,223	5,125,343	5,177,455	5,229,554	5,281,688	5,333,787	5,385,921	5,438,019
Countryside LF	1,226,669	1,240,237	1,253,826	1,267,394	1,280,983	1,294,550	1,308,139	1,321,707	1,335,296	1,348,863	1,362,431	1,376,020	1,389,588	1,403,177	1,416,744
Zion LF	2,050,140	2,072,813	2,095,523	2,118,196	2,140,906	2,163,579	2,186,290	2,208,962	2,231,673	2,254,346	2,277,056	2,299,729	2,322,439	2,345,112	2,367,822
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	1,431,603	1,447,475	1,463,296	1,479,168	1,494,989	1,510,861	1,526,682	1,542,554	1,558,374	1,574,246	1,590,067	1,605,939	1,621,760	1,637,632	1,653,453
Annual VMT (Transfer)	1,206,474	1,219,937	1,233,227	1,246,517	1,259,980	1,273,270	1,286,733	1,300,023	1,313,313	1,326,776	1,340,066	1,353,357	1,366,819	1,380,110	1,393,572
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	1,206,474	1,219,937	1,233,227	1,246,517	1,259,980	1,273,270	1,286,733	1,300,023	1,313,313	1,326,776	1,340,066	1,353,357	1,366,819	1,380,110	1,393,572
Total Annual VMT	5,914,886	5,980,462	6,045,872	6,111,275	6,176,858	6,242,260	6,307,844	6,373,246	6,438,656	6,504,231	6,569,620	6,635,045	6,700,606	6,766,031	6,831,591
Countryside LF	1,226,669	1,240,237	1,253,826	1,267,394	1,280,983	1,294,550	1,308,139	1,321,707	1,335,296	1,348,863	1,362,431	1,376,020	1,389,588	1,403,177	1,416,744
Zion LF	2,050,140	2,072,813	2,095,523	2,118,196	2,140,906	2,163,579	2,186,290	2,208,962	2,231,673	2,254,346	2,277,056	2,299,729	2,322,439	2,345,112	2,367,822
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	2,638,077	2,667,412	2,696,523	2,725,685	2,754,969	2,784,131	2,813,415	2,842,577	2,871,687	2,901,022	2,930,133	2,959,296	2,988,579	3,017,742	3,047,025

Table A-4: Condition 1: Current Conditions (Countryside LF, Veolia ES Zion LF, 20% Export to Out-of-County Transfer Stations)

Disposal Rate (pcd) 6.1 pcd
Average Direct-Haul Payload 6 tons
Average Transfer-Haul Payload 24 tons

<u>System Tonnage Distribution</u>	<u>% Share</u>	<u>Distance (one-way)</u>
Countryside LF	41%	10.7
Zion LF	39%	18.8
Out-of-County TS	20%	25.6
Total	100%	
Lake TS		12.3

Transfer Loads to LF	
From Lake TS	68.1
From Out-of-County TS	86.3

Year	16 2031	17 2032	18 2033	19 2034	20 2035	21 2036	22 2037	23 2038	24 2039	25 2040	26 2041	27 2042	28 2043	29 2044	30 2045
Population	878,610	886,951	895,291	903,632	911,972	920,312	928,653	936,993	945,334	953,674	962,014	970,355	978,695	987,036	995,376
Annual Tons	978,113	987,398	996,683	1,005,968	1,015,253	1,024,537	1,033,823	1,043,107	1,052,393	1,061,678	1,070,962	1,080,248	1,089,532	1,098,818	1,108,102
Countryside LF	401,026	404,833	408,640	412,447	416,254	420,060	423,867	427,674	431,481	435,288	439,094	442,902	446,708	450,515	454,322
Zion LF	381,464	385,085	388,706	392,328	395,949	399,569	403,191	406,812	410,433	414,054	417,675	421,297	424,917	428,539	432,160
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	195,623	197,480	199,337	201,194	203,051	204,907	206,765	208,621	210,479	212,336	214,192	216,050	217,906	219,764	221,620
Annual Truckloads (Direct)	163,019	164,566	166,114	167,661	169,210	170,756	172,305	173,851	175,400	176,946	178,494	180,041	181,589	183,136	184,684
Countryside LF	66,838	67,472	68,107	68,741	69,376	70,010	70,645	71,279	71,914	72,548	73,182	73,817	74,451	75,086	75,720
Zion LF	63,577	64,181	64,784	65,388	65,992	66,595	67,199	67,802	68,406	69,009	69,613	70,216	70,820	71,423	72,027
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	32,604	32,913	33,223	33,532	33,842	34,151	34,461	34,770	35,080	35,389	35,699	36,008	36,318	36,627	36,937
Annual Truckloads (Transfer)	8,151	8,228	8,306	8,383	8,460	8,538	8,615	8,693	8,770	8,847	8,925	9,002	9,079	9,157	9,234
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	8,151	8,228	8,306	8,383	8,460	8,538	8,615	8,693	8,770	8,847	8,925	9,002	9,079	9,157	9,234
Annual VMT (Direct)	5,490,153	5,542,253	5,594,386	5,646,484	5,698,655	5,750,717	5,802,888	5,854,950	5,907,122	5,959,182	6,011,333	6,063,416	6,115,565	6,167,647	6,219,797
Countryside LF	1,430,333	1,443,901	1,457,490	1,471,057	1,484,646	1,498,214	1,511,803	1,525,371	1,538,960	1,552,527	1,566,095	1,579,684	1,593,251	1,606,840	1,620,408
Zion LF	2,390,495	2,413,206	2,435,878	2,458,589	2,481,299	2,503,972	2,526,682	2,549,355	2,572,066	2,594,738	2,617,449	2,640,122	2,662,832	2,685,505	2,708,215
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	1,669,325	1,685,146	1,701,018	1,716,838	1,732,710	1,748,531	1,764,403	1,780,224	1,796,096	1,811,917	1,827,789	1,843,610	1,859,482	1,875,302	1,891,174
Annual VMT (Transfer)	1,406,863	1,420,153	1,433,616	1,446,906	1,460,196	1,473,659	1,486,949	1,500,412	1,513,702	1,526,992	1,540,455	1,553,745	1,567,035	1,580,498	1,593,788
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	1,406,863	1,420,153	1,433,616	1,446,906	1,460,196	1,473,659	1,486,949	1,500,412	1,513,702	1,526,992	1,540,455	1,553,745	1,567,035	1,580,498	1,593,788
Total Annual VMT	6,897,016	6,962,406	7,028,002	7,093,390	7,158,851	7,224,376	7,289,837	7,355,362	7,420,824	7,486,174	7,551,788	7,617,161	7,682,600	7,748,145	7,813,585
Countryside LF	1,430,333	1,443,901	1,457,490	1,471,057	1,484,646	1,498,214	1,511,803	1,525,371	1,538,960	1,552,527	1,566,095	1,579,684	1,593,251	1,606,840	1,620,408
Zion LF	2,390,495	2,413,206	2,435,878	2,458,589	2,481,299	2,503,972	2,526,682	2,549,355	2,572,066	2,594,738	2,617,449	2,640,122	2,662,832	2,685,505	2,708,215
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	3,076,188	3,105,299	3,134,634	3,163,744	3,192,906	3,222,190	3,251,352	3,280,636	3,309,798	3,338,909	3,368,244	3,397,355	3,426,517	3,455,800	3,484,962

Table A-4: Condition 2: Future Conditions (Export to Out-of-County TSs)

Disposal Rate (pcd) 6.1 pcd
 Average Direct-Haul Payload 6 tons
 Average Transfer-Haul Payload 24 tons

<u>System Tonnage Distribution</u>	<u>% Share</u>	<u>Distance (one-way)</u>
Countryside LF	0%	10.7
Zion LF	0%	18.8
Out-of-County TS	100%	25.6
Total	100%	
Lake TS		12.3

Transfer Loads to LF	
From Lake TS	68.1
From Out-of-County TS	86.3

Year	1 2016	2 2017	3 2018	4 2019	5 2020	6 2021	7 2022	8 2023	9 2024	10 2025	11 2026	12 2027	13 2028	14 2029	15 2030
Population	753,504	761,845	770,185	778,526	786,866	795,206	803,547	811,887	820,228	828,568	836,908	845,249	853,589	861,930	870,270
Annual Tons	838,838	848,124	857,408	866,694	875,979	885,263	894,549	903,833	913,119	922,403	931,688	940,973	950,258	959,544	968,828
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	838,838	848,124	857,408	866,694	875,979	885,263	894,549	903,833	913,119	922,403	931,688	940,973	950,258	959,544	968,828
Annual Truckloads (Direct)	139,806	141,354	142,901	144,449	145,997	147,544	149,092	150,639	152,187	153,734	155,281	156,829	158,376	159,924	161,471
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	139,806	141,354	142,901	144,449	145,997	147,544	149,092	150,639	152,187	153,734	155,281	156,829	158,376	159,924	161,471
Annual Truckloads (Transfer)	34,952	35,339	35,725	36,112	36,499	36,886	37,273	37,660	38,047	38,433	38,820	39,207	39,594	39,981	40,368
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	34,952	35,339	35,725	36,112	36,499	36,886	37,273	37,660	38,047	38,433	38,820	39,207	39,594	39,981	40,368
Annual VMT (Direct)	7,158,067	7,237,325	7,316,531	7,395,789	7,475,046	7,554,253	7,633,510	7,712,717	7,791,974	7,871,181	7,950,387	8,029,645	8,108,851	8,188,109	8,267,315
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	7,158,067	7,237,325	7,316,531	7,395,789	7,475,046	7,554,253	7,633,510	7,712,717	7,791,974	7,871,181	7,950,387	8,029,645	8,108,851	8,188,109	8,267,315
Annual VMT (Transfer)	6,032,715	6,099,511	6,166,135	6,232,931	6,299,727	6,366,524	6,433,320	6,500,116	6,566,912	6,633,536	6,700,332	6,767,128	6,833,924	6,900,721	6,967,517
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	6,032,715	6,099,511	6,166,135	6,232,931	6,299,727	6,366,524	6,433,320	6,500,116	6,566,912	6,633,536	6,700,332	6,767,128	6,833,924	6,900,721	6,967,517
Total Annual VMT	13,190,782	13,336,836	13,482,666	13,628,720	13,774,773	13,920,777	14,066,830	14,212,833	14,358,886	14,504,717	14,650,719	14,796,773	14,942,775	15,088,830	15,234,832
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	13,190,782	13,336,836	13,482,666	13,628,720	13,774,773	13,920,777	14,066,830	14,212,833	14,358,886	14,504,717	14,650,719	14,796,773	14,942,775	15,088,830	15,234,832

Table A-4: Condition 2: Future Conditions (Export to Out-of-County TSs)

Disposal Rate (pcd) 6.1 pcd
 Average Direct-Haul Payload 6 tons
 Average Transfer-Haul Payload 24 tons

<u>System Tonnage Distribution</u>	<u>% Share</u>	<u>Distance (one-way)</u>
Countryside LF	0%	10.7
Zion LF	0%	18.8
Out-of-County TS	100%	25.6
Total	100%	
Lake TS		12.3

Transfer Loads to LF	
From Lake TS	68.1
From Out-of-County TS	86.3

Year	16 2031	17 2032	18 2033	19 2034	20 2035	21 2036	22 2037	23 2038	24 2039	25 2040	26 2041	27 2042	28 2043	29 2044	30 2045
Population	878,610	886,951	895,291	903,632	911,972	920,312	928,653	936,993	945,334	953,674	962,014	970,355	978,695	987,036	995,376
Annual Tons	978,113	987,398	996,683	1,005,968	1,015,253	1,024,537	1,033,823	1,043,107	1,052,393	1,061,678	1,070,962	1,080,248	1,089,532	1,098,818	1,108,102
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	978,113	987,398	996,683	1,005,968	1,015,253	1,024,537	1,033,823	1,043,107	1,052,393	1,061,678	1,070,962	1,080,248	1,089,532	1,098,818	1,108,102
Annual Truckloads (Direct)	163,019	164,566	166,114	167,661	169,209	170,756	172,304	173,851	175,399	176,946	178,494	180,041	181,589	183,136	184,684
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	163,019	164,566	166,114	167,661	169,209	170,756	172,304	173,851	175,399	176,946	178,494	180,041	181,589	183,136	184,684
Annual Truckloads (Transfer)	40,755	41,142	41,528	41,915	42,302	42,689	43,076	43,463	43,850	44,237	44,623	45,010	45,397	45,784	46,171
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	40,755	41,142	41,528	41,915	42,302	42,689	43,076	43,463	43,850	44,237	44,623	45,010	45,397	45,784	46,171
Annual VMT (Direct)	8,346,573	8,425,779	8,505,037	8,584,243	8,663,501	8,742,707	8,821,965	8,901,171	8,980,429	9,059,635	9,138,893	9,218,099	9,297,357	9,376,563	9,455,821
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	8,346,573	8,425,779	8,505,037	8,584,243	8,663,501	8,742,707	8,821,965	8,901,171	8,980,429	9,059,635	9,138,893	9,218,099	9,297,357	9,376,563	9,455,821
Annual VMT (Transfer)	7,034,313	7,101,109	7,167,733	7,234,529	7,301,325	7,368,121	7,434,918	7,501,714	7,568,510	7,635,306	7,701,930	7,768,726	7,835,522	7,902,318	7,969,115
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	7,034,313	7,101,109	7,167,733	7,234,529	7,301,325	7,368,121	7,434,918	7,501,714	7,568,510	7,635,306	7,701,930	7,768,726	7,835,522	7,902,318	7,969,115
Total Annual VMT	15,380,886	15,526,888	15,672,770	15,818,772	15,964,826	16,110,828	16,256,883	16,402,885	16,548,939	16,694,941	16,840,823	16,986,825	17,132,879	17,278,881	17,424,936
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	15,380,886	15,526,888	15,672,770	15,818,772	15,964,826	16,110,828	16,256,883	16,402,885	16,548,939	16,694,941	16,840,823	16,986,825	17,132,879	17,278,881	17,424,936

Table A-4: Condition 3: Interim Conditions (In-County Transfer/Landfill and Export to Out-of-County Transfer Stations)

Disposal Rate (pcd) 6.1 pcd
 Average Direct-Haul Payload 6 tons
 Average Transfer-Haul Payload 24 tons

<u>System Tonnage Distribution</u>	<u>% Share</u>	<u>Distance (one-way)</u>
Countryside LF	41%	10.7
Zion LF	39%	18.8
Out-of-County TS	20%	25.6
Total	100%	
Lake TS		12.3

Transfer Loads to LF	
From Lake TS	68.1
From Out-of-County TS	86.3

Year	1 2016	2 2017	3 2018	4 2019	5 2020	6 2021	7 2022	8 2023	9 2024	10 2025	11 2026	12 2027	13 2028	14 2029	15 2030
Population	753,504	761,845	770,185	778,526	786,866	795,206	803,547	811,887	820,228	828,568	836,908	845,249	853,589	861,930	870,270
Annual Tons	838,838	848,124	857,408	866,694	875,979	885,263	894,549	903,833	913,119	922,403	931,688	940,973	950,258	959,544	968,828
Countryside LF	255,979	259,786	263,592	267,400	271,206	275,013	278,820	282,627	286,434	290,240	294,047	297,854	301,661	305,468	309,274
Zion LF	243,492	247,113	250,734	254,356	257,977	261,598	265,219	268,840	272,461	276,082	279,703	283,324	286,946	290,567	294,188
Lake TS	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500
Out-of-County TS	124,868	126,725	128,582	130,439	132,296	134,153	136,010	137,867	139,724	141,581	143,438	145,295	147,152	149,009	150,866
Annual Truckloads (Direct)	139,806	141,355	142,901	144,450	145,996	147,545	149,091	150,640	152,186	153,734	155,281	156,829	158,376	159,924	161,471
Countryside LF	42,663	43,298	43,932	44,567	45,201	45,836	46,470	47,105	47,739	48,373	49,008	49,642	50,277	50,911	51,546
Zion LF	40,582	41,186	41,789	42,393	42,996	43,600	44,203	44,807	45,410	46,014	46,617	47,221	47,824	48,428	49,031
Lake TS	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750
Out-of-County TS	20,811	21,121	21,430	21,740	22,049	22,359	22,668	22,978	23,287	23,597	23,906	24,216	24,525	24,835	25,144
Annual Truckloads (Transfer)	14,141	14,218	14,296	14,373	14,450	14,528	14,605	14,682	14,760	14,837	14,915	14,992	15,069	15,147	15,224
Lake TS	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938
Out-of-County TS	5,203	5,280	5,358	5,435	5,512	5,590	5,667	5,744	5,822	5,899	5,977	6,054	6,131	6,209	6,286
Annual VMT (Direct)	4,383,844	4,436,016	4,488,077	4,540,249	4,592,310	4,644,481	4,696,543	4,748,714	4,800,775	4,852,924	4,905,007	4,957,158	5,009,240	5,061,390	5,113,473
Countryside LF	912,988	926,577	940,145	953,734	967,301	980,890	994,458	1,008,047	1,021,615	1,035,182	1,048,771	1,062,339	1,075,928	1,089,495	1,103,084
Zion LF	1,525,883	1,548,594	1,571,266	1,593,977	1,616,650	1,639,360	1,662,033	1,684,743	1,707,416	1,730,126	1,752,799	1,775,510	1,798,182	1,820,893	1,843,566
Lake TS	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450
Out-of-County TS	1,065,523	1,081,395	1,097,216	1,113,088	1,128,909	1,144,781	1,160,602	1,176,474	1,192,294	1,208,166	1,223,987	1,239,859	1,255,680	1,271,552	1,287,373
Annual VMT (Transfer)	2,115,394	2,128,684	2,142,147	2,155,437	2,168,727	2,182,190	2,195,480	2,208,770	2,222,233	2,235,523	2,248,986	2,262,276	2,275,567	2,289,029	2,302,320
Lake TS	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356
Out-of-County TS	898,038	911,328	924,791	938,081	951,371	964,834	978,124	991,414	1,004,877	1,018,167	1,031,630	1,044,920	1,058,211	1,071,673	1,084,964
Total Annual VMT	6,499,238	6,564,700	6,630,224	6,695,686	6,761,037	6,826,671	6,892,023	6,957,484	7,023,008	7,088,447	7,153,993	7,219,434	7,284,807	7,350,419	7,415,793
Countryside LF	912,988	926,577	940,145	953,734	967,301	980,890	994,458	1,008,047	1,021,615	1,035,182	1,048,771	1,062,339	1,075,928	1,089,495	1,103,084
Zion LF	1,525,883	1,548,594	1,571,266	1,593,977	1,616,650	1,639,360	1,662,033	1,684,743	1,707,416	1,730,126	1,752,799	1,775,510	1,798,182	1,820,893	1,843,566
Lake TS	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806
Out-of-County TS	1,963,561	1,992,723	2,022,007	2,051,169	2,080,280	2,109,615	2,138,726	2,167,888	2,197,171	2,226,333	2,255,617	2,284,779	2,313,891	2,343,225	2,372,337

Table A-4: Condition 3: Interim Conditions (In-County Transfer/Landfill and Export to Out-of-County Transfer Stations)

Disposal Rate (pcd) 6.1 pcd
 Average Direct-Haul Payload 6 tons
 Average Transfer-Haul Payload 24 tons

System Tonnage Distribution	% Share	Distance (one-way)
Countryside LF	41%	10.7
Zion LF	39%	18.8
Out-of-County TS	20%	25.6
Total	100%	
Lake TS		12.3

Transfer Loads to LF	
From Lake TS	68.1
From Out-of-County TS	86.3

Year	16 2031	17 2032	18 2033	19 2034	20 2035	21 2036	22 2037	23 2038	24 2039	25 2040	26 2041	27 2042	28 2043	29 2044	30 2045
Population	878,610	886,951	895,291	903,632	911,972	920,312	928,653	936,993	945,334	953,674	962,014	970,355	978,695	987,036	995,376
Annual Tons	978,113	987,398	996,683	1,005,968	1,015,253	1,024,537	1,033,823	1,043,107	1,052,393	1,061,678	1,070,962	1,080,248	1,089,532	1,098,818	1,108,102
Countryside LF	313,081	316,888	320,695	324,502	328,309	332,115	335,922	339,729	343,536	347,343	351,149	354,957	358,763	362,570	366,377
Zion LF	297,809	301,430	305,051	308,673	312,294	315,914	319,536	323,157	326,778	330,399	334,020	337,642	341,262	344,884	348,505
Lake TS	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500
Out-of-County TS	152,723	154,580	156,437	158,294	160,151	162,007	163,865	165,721	167,579	169,436	171,292	173,150	175,006	176,864	178,720
Annual Truckloads (Direct)	163,019	164,566	166,114	167,662	169,209	170,756	172,304	173,852	175,399	176,947	178,494	180,042	181,589	183,136	184,684
Countryside LF	52,180	52,815	53,449	54,084	54,718	55,353	55,987	56,622	57,256	57,891	58,525	59,160	59,794	60,428	61,063
Zion LF	49,635	50,238	50,842	51,446	52,049	52,652	53,256	53,860	54,463	55,067	55,670	56,274	56,877	57,481	58,084
Lake TS	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750
Out-of-County TS	25,454	25,763	26,073	26,382	26,692	27,001	27,311	27,620	27,930	28,239	28,549	28,858	29,168	29,477	29,787
Annual Truckloads (Transfer)	15,301	15,379	15,456	15,534	15,611	15,688	15,766	15,843	15,920	15,998	16,075	16,153	16,230	16,307	16,385
Lake TS	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938
Out-of-County TS	6,363	6,441	6,518	6,596	6,673	6,750	6,828	6,905	6,982	7,060	7,137	7,215	7,292	7,369	7,447
Annual VMT (Direct)	5,165,623	5,217,706	5,269,856	5,321,976	5,374,087	5,426,170	5,478,321	5,530,441	5,582,553	5,634,673	5,686,786	5,738,906	5,791,019	5,843,117	5,895,250
Countryside LF	1,116,652	1,130,241	1,143,809	1,157,398	1,170,965	1,184,554	1,198,122	1,211,711	1,225,278	1,238,867	1,252,435	1,266,024	1,279,592	1,293,159	1,306,748
Zion LF	1,866,276	1,888,949	1,911,659	1,934,370	1,957,042	1,979,715	2,002,426	2,025,136	2,047,809	2,070,519	2,093,192	2,115,902	2,138,575	2,161,286	2,183,958
Lake TS	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450
Out-of-County TS	1,303,245	1,319,066	1,334,938	1,350,758	1,366,630	1,382,451	1,398,323	1,414,144	1,430,016	1,445,837	1,461,709	1,477,530	1,493,402	1,509,222	1,525,094
Annual VMT (Transfer)	2,315,610	2,329,073	2,342,363	2,355,826	2,369,116	2,382,406	2,395,869	2,409,159	2,422,449	2,435,912	2,449,202	2,462,665	2,475,955	2,489,245	2,502,708
Lake TS	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356
Out-of-County TS	1,098,254	1,111,717	1,125,007	1,138,470	1,151,760	1,165,050	1,178,513	1,191,803	1,205,093	1,218,556	1,231,846	1,245,309	1,258,599	1,271,889	1,285,352
Total Annual VMT	7,481,233	7,546,779	7,612,219	7,677,802	7,743,203	7,808,576	7,874,190	7,939,600	8,005,002	8,070,585	8,135,988	8,201,571	8,266,974	8,332,362	8,397,958
Countryside LF	1,116,652	1,130,241	1,143,809	1,157,398	1,170,965	1,184,554	1,198,122	1,211,711	1,225,278	1,238,867	1,252,435	1,266,024	1,279,592	1,293,159	1,306,748
Zion LF	1,866,276	1,888,949	1,911,659	1,934,370	1,957,042	1,979,715	2,002,426	2,025,136	2,047,809	2,070,519	2,093,192	2,115,902	2,138,575	2,161,286	2,183,958
Lake TS	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806
Out-of-County TS	2,401,499	2,430,783	2,459,945	2,489,228	2,518,390	2,547,501	2,576,836	2,605,947	2,635,109	2,664,393	2,693,555	2,722,839	2,752,001	2,781,111	2,810,446

Table A-4: Condition 4: Future Conditions (In-County Transfer and Export to Out-of-County TSs)

Disposal Rate (pcd) 6.1 pcd
 Average Direct-Haul Payload 6 tons
 Average Transfer-Haul Payload 24 tons

<u>System Tonnage Distribution</u>	<u>% Share</u>	<u>Distance (one-way)</u>
Countryside LF	0%	10.7
Zion LF	0%	18.8
Out-of-County TS	100%	25.6
Total	100%	
Lake TS		12.3

Transfer Loads to LF	
From Lake TS	68.1
From Out-of-County TS	86.3

Year	1 2016	2 2017	3 2018	4 2019	5 2020	6 2021	7 2022	8 2023	9 2024	10 2025	11 2026	12 2027	13 2028	14 2029	15 2030
Population	753,504	761,845	770,185	778,526	786,866	795,206	803,547	811,887	820,228	828,568	836,908	845,249	853,589	861,930	870,270
Annual Tons	838,838	848,124	857,408	866,694	875,979	885,263	894,549	903,833	913,119	922,403	931,688	940,973	950,258	959,544	968,828
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake TS	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500
Out-of-County TS	624,338	633,624	642,908	652,194	661,479	670,763	680,049	689,333	698,619	707,903	717,188	726,473	735,758	745,044	754,328
Annual Truckloads (Direct)	139,806	141,354	142,901	144,449	145,997	147,544	149,092	150,639	152,187	153,734	155,281	156,829	158,376	159,924	161,471
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake TS	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750
Out-of-County TS	104,056	105,604	107,151	108,699	110,247	111,794	113,342	114,889	116,437	117,984	119,531	121,079	122,626	124,174	125,721
Annual Truckloads (Transfer)	34,952	35,339	35,726	36,113	36,500	36,886	37,273	37,660	38,047	38,434	38,821	39,208	39,595	39,982	40,368
Lake TS	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938
Out-of-County TS	26,014	26,401	26,788	27,175	27,562	27,948	28,335	28,722	29,109	29,496	29,883	30,270	30,657	31,044	31,430
Annual VMT (Direct)	6,207,117	6,286,375	6,365,581	6,444,839	6,524,096	6,603,303	6,682,560	6,761,767	6,841,024	6,920,231	6,999,437	7,078,695	7,157,901	7,237,159	7,316,365
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake TS	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450
Out-of-County TS	5,327,667	5,406,925	5,486,131	5,565,389	5,644,646	5,723,853	5,803,110	5,882,317	5,961,574	6,040,781	6,119,987	6,199,245	6,278,451	6,357,709	6,436,915
Annual VMT (Transfer)	5,707,372	5,774,169	5,840,965	5,907,761	5,974,557	6,041,181	6,107,977	6,174,773	6,241,569	6,308,366	6,375,162	6,441,958	6,508,754	6,575,550	6,642,174
Lake TS	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356
Out-of-County TS	4,490,016	4,556,813	4,623,609	4,690,405	4,757,201	4,823,825	4,890,621	4,957,417	5,024,213	5,091,010	5,157,806	5,224,602	5,291,398	5,358,194	5,424,818
Total Annual VMT	11,914,489	12,060,544	12,206,546	12,352,600	12,498,653	12,644,484	12,790,537	12,936,540	13,082,593	13,228,597	13,374,599	13,520,653	13,666,655	13,812,709	13,958,539
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake TS	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806
Out-of-County TS	9,817,683	9,963,738	10,109,740	10,255,794	10,401,847	10,547,678	10,693,731	10,839,734	10,985,787	11,131,791	11,277,793	11,423,847	11,569,849	11,715,903	11,861,733

Table A-4: Condition 4: Future Conditions (In-County Transfer and Export to Out-of-County TSs)

Disposal Rate (pcd) 6.1 pcd
 Average Direct-Haul Payload 6 tons
 Average Transfer-Haul Payload 24 tons

<u>System Tonnage Distribution</u>	<u>% Share</u>	<u>Distance (one-way)</u>
Countryside LF	0%	10.7
Zion LF	0%	18.8
Out-of-County TS	100%	25.6
Total	100%	
Lake TS		12.3

Transfer Loads to LF	
From Lake TS	68.1
From Out-of-County TS	86.3

Year	16 2031	17 2032	18 2033	19 2034	20 2035	21 2036	22 2037	23 2038	24 2039	25 2040	26 2041	27 2042	28 2043	29 2044	30 2045
Population	878,610	886,951	895,291	903,632	911,972	920,312	928,653	936,993	945,334	953,674	962,014	970,355	978,695	987,036	995,376
Annual Tons	978,113	987,398	996,683	1,005,968	1,015,253	1,024,537	1,033,823	1,043,107	1,052,393	1,061,678	1,070,962	1,080,248	1,089,532	1,098,818	1,108,102
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake TS	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500
Out-of-County TS	763,613	772,898	782,183	791,468	800,753	810,037	819,323	828,607	837,893	847,178	856,462	865,748	875,032	884,318	893,602
Annual Truckloads (Direct)	163,019	164,566	166,114	167,661	169,209	170,756	172,304	173,851	175,399	176,946	178,494	180,041	181,589	183,136	184,684
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake TS	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750
Out-of-County TS	127,269	128,816	130,364	131,911	133,459	135,006	136,554	138,101	139,649	141,196	142,744	144,291	145,839	147,386	148,934
Annual Truckloads (Transfer)	40,755	41,142	41,529	41,916	42,303	42,690	43,076	43,463	43,850	44,237	44,624	45,011	45,398	45,785	46,171
Lake TS	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938
Out-of-County TS	31,817	32,204	32,591	32,978	33,365	33,752	34,138	34,525	34,912	35,299	35,686	36,073	36,460	36,847	37,233
Annual VMT (Direct)	7,395,623	7,474,829	7,554,087	7,633,293	7,712,551	7,791,757	7,871,015	7,950,221	8,029,479	8,108,685	8,187,943	8,267,149	8,346,407	8,425,613	8,504,871
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake TS	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450
Out-of-County TS	6,516,173	6,595,379	6,674,637	6,753,843	6,833,101	6,912,307	6,991,565	7,070,771	7,150,029	7,229,235	7,308,493	7,387,699	7,466,957	7,546,163	7,625,421
Annual VMT (Transfer)	6,708,970	6,775,766	6,842,563	6,909,359	6,976,155	7,042,951	7,109,575	7,176,371	7,243,167	7,309,963	7,376,760	7,443,556	7,510,352	7,577,148	7,643,772
Lake TS	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356
Out-of-County TS	5,491,614	5,558,410	5,625,207	5,692,003	5,758,799	5,825,595	5,892,219	5,959,015	6,025,811	6,092,607	6,159,404	6,226,200	6,292,996	6,359,792	6,426,416
Total Annual VMT	14,104,593	14,250,595	14,396,650	14,542,652	14,688,706	14,834,708	14,980,590	15,126,592	15,272,646	15,418,648	15,564,703	15,710,705	15,856,759	16,002,761	16,148,643
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake TS	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806
Out-of-County TS	12,007,787	12,153,789	12,299,844	12,445,846	12,591,900	12,737,902	12,883,784	13,029,786	13,175,840	13,321,842	13,467,897	13,613,899	13,759,953	13,905,955	14,051,837

Table A-5: Vehicle Miles Traveled (VMT) Summary

Year	1 2016	2 2017	3 2018	4 2019	5 2020	6 2021	7 2022	8 2023	9 2024	10 2025	11 2026	12 2027	13 2028	14 2029	15 2030
Current Conditions Scenario															
In-County LFs															
Direct-Haul	4,708,412	4,760,525	4,812,645	4,864,758	4,916,878	4,968,990	5,021,111	5,073,223	5,125,343	5,177,455	5,229,554	5,281,688			
Transfer-Haul	1,206,474	1,219,937	1,233,227	1,246,517	1,259,980	1,273,270	1,286,733	1,300,023	1,313,313	1,326,776	1,340,066	1,353,357			
Subtotal	5,914,886	5,980,462	6,045,872	6,111,275	6,176,858	6,242,260	6,307,844	6,373,246	6,438,656	6,504,231	6,569,620	6,635,045			
Export to Out-of-County TSs															
Direct-Haul													8,108,851	8,188,109	8,267,315
Transfer-Haul													6,833,924	6,900,721	6,967,517
Subtotal													14,942,775	15,088,830	15,234,832
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Total	5,914,886	5,980,462	6,045,872	6,111,275	6,176,858	6,242,260	6,307,844	6,373,246	6,438,656	6,504,231	6,569,620	6,635,045	14,942,775	15,088,830	15,234,832
Lake TS Scenario															
In-County LFs + Lake TS															
Direct-Haul	4,383,844	4,436,016	4,488,077	4,540,249	4,592,310	4,644,481	4,696,543	4,748,714	4,800,775	4,852,924	4,905,007	4,957,158	5,009,240	5,061,390	5,113,473
Transfer-Haul	2,115,394	2,128,684	2,142,147	2,155,437	2,168,727	2,182,190	2,195,480	2,208,770	2,222,233	2,235,523	2,248,986	2,262,276	2,275,567	2,289,029	2,302,320
Subtotal	6,499,238	6,564,700	6,630,224	6,695,686	6,761,037	6,826,671	6,892,023	6,957,484	7,023,008	7,088,447	7,153,993	7,219,434	7,284,807	7,350,419	7,415,793
Lake TS + Export to Out-of-County TSs															
Direct-Haul															
Transfer-Haul															
Subtotal															
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Total	6,499,238	6,564,700	6,630,224	6,695,686	6,761,037	6,826,671	6,892,023	6,957,484	7,023,008	7,088,447	7,153,993	7,219,434	7,284,807	7,350,419	7,415,793
Year	1 2016	2 2017	3 2018	4 2019	5 2020	6 2021	7 2022	8 2023	9 2024	10 2025	11 2026	12 2027	13 2028	14 2029	15 2030
Current Conditions Scenario															
In-County LFs															
Direct-Haul	4,708,412	4,760,525	4,812,645	4,864,758	4,916,878	4,968,990	5,021,111	5,073,223	5,125,343	5,177,455	5,229,554	5,281,688			
Transfer-Haul	1,206,474	1,219,937	1,233,227	1,246,517	1,259,980	1,273,270	1,286,733	1,300,023	1,313,313	1,326,776	1,340,066	1,353,357			
Subtotal	5,914,886	5,980,462	6,045,872	6,111,275	6,176,858	6,242,260	6,307,844	6,373,246	6,438,656	6,504,231	6,569,620	6,635,045			
Export to Out-of-County TSs															
Direct-Haul													8,108,851	8,188,109	8,267,315
Transfer-Haul													6,833,924	6,900,721	6,967,517
Subtotal													14,942,775	15,088,830	15,234,832
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Total	5,914,886	5,980,462	6,045,872	6,111,275	6,176,858	6,242,260	6,307,844	6,373,246	6,438,656	6,504,231	6,569,620	6,635,045	14,942,775	15,088,830	15,234,832
Lake TS Scenario															
In-County LFs + Lake TS															
Direct-Haul	4,383,844	4,436,016	4,488,077	4,540,249	4,592,310	4,644,481	4,696,543	4,748,714	4,800,775	4,852,924	4,905,007	4,957,158	5,009,240	5,061,390	5,113,473
Transfer-Haul	2,115,394	2,128,684	2,142,147	2,155,437	2,168,727	2,182,190	2,195,480	2,208,770	2,222,233	2,235,523	2,248,986	2,262,276	2,275,567	2,289,029	2,302,320
Subtotal	6,499,238	6,564,700	6,630,224	6,695,686	6,761,037	6,826,671	6,892,023	6,957,484	7,023,008	7,088,447	7,153,993	7,219,434	7,284,807	7,350,419	7,415,793
Lake TS + Export to Out-of-County TSs															
Direct-Haul															
Transfer-Haul															
Subtotal															
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Total	6,499,238	6,564,700	6,630,224	6,695,686	6,761,037	6,826,671	6,892,023	6,957,484	7,023,008	7,088,447	7,153,993	7,219,434	7,284,807	7,350,419	7,415,793

Table A-5: Vehicle Miles Traveled (VMT) Summary

Year	16 2031	17 2032	18 2033	19 2034	20 2035	21 2036	22 2037	23 2038	24 2039	25 2040	26 2041	27 2042	28 2043	29 2044	30 2045	Total
Current Conditions Scenario																
In-County LFs																
Direct-Haul																59,940,582
Transfer-Haul																15,359,673
Subtotal																75,300,255
Export to Out-of-County TSs																
Direct-Haul	8,346,573	8,425,779	8,505,037	8,584,243	8,663,501	8,742,707	8,821,965	8,901,171	8,980,429	9,059,635	9,138,893	9,218,099	9,297,357	9,376,563	9,455,821	158,082,048
Transfer-Haul	7,034,313	7,101,109	7,167,733	7,234,529	7,301,325	7,368,121	7,434,918	7,501,714	7,568,510	7,635,306	7,701,930	7,768,726	7,835,522	7,902,318	7,969,115	133,227,351
Subtotal	15,380,886	15,526,888	15,672,770	15,818,772	15,964,826	16,110,828	16,256,883	16,402,885	16,548,939	16,694,941	16,840,823	16,986,825	17,132,879	17,278,881	17,424,936	291,309,399
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Total	15,380,886	15,526,888	15,672,770	15,818,772	15,964,826	16,110,828	16,256,883	16,402,885	16,548,939	16,694,941	16,840,823	16,986,825	17,132,879	17,278,881	17,424,936	366,609,654
Lake TS Scenario																
In-County LFs + Lake TS																
Direct-Haul	5,165,623															76,395,824
Transfer-Haul	2,315,610															35,448,373
Subtotal	7,481,233															111,844,197
Lake TS + Export to Out-of-County TSs																
Direct-Haul		7,474,829	7,554,087	7,633,293	7,712,551	7,791,757	7,871,015	7,950,221	8,029,479	8,108,685	8,187,943	8,267,149	8,346,407	8,425,613	8,504,871	111,857,900
Transfer-Haul		6,775,766	6,842,563	6,909,359	6,976,155	7,042,951	7,109,575	7,176,371	7,243,167	7,309,963	7,376,760	7,443,556	7,510,352	7,577,148	7,643,772	100,937,458
Subtotal		14,250,595	14,396,650	14,542,652	14,688,706	14,834,708	14,980,590	15,126,592	15,272,646	15,418,648	15,564,703	15,710,705	15,856,759	16,002,761	16,148,643	212,795,358
		=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Total	7,481,233	14,250,595	14,396,650	14,542,652	14,688,706	14,834,708	14,980,590	15,126,592	15,272,646	15,418,648	15,564,703	15,710,705	15,856,759	16,002,761	16,148,643	324,639,555

Year	16 2031	17 2032	18 2033	19 2034	20 2035	Total
Current Conditions Scenario						
In-County LFs						
Direct-Haul						59,940,582
Transfer-Haul						15,359,673
Subtotal						75,300,255
Export to Out-of-County TSs						
Direct-Haul	8,346,573	8,425,779	8,505,037	8,584,243	8,663,501	67,089,408
Transfer-Haul	7,034,313	7,101,109	7,167,733	7,234,529	7,301,325	56,541,171
Subtotal	15,380,886	15,526,888	15,672,770	15,818,772	15,964,826	123,630,579
	=====	=====	=====	=====	=====	=====
Total	15,380,886	15,526,888	15,672,770	15,818,772	15,964,826	198,930,834
Lake TS Scenario						
In-County LFs + Lake TS						
Direct-Haul	5,165,623					76,395,824
Transfer-Haul	2,315,610					35,448,373
Subtotal	7,481,233					111,844,197
Lake TS + Export to Out-of-County TSs						
Direct-Haul		7,474,829	7,554,087	7,633,293	7,712,551	30,374,760
Transfer-Haul		6,775,766	6,842,563	6,909,359	6,976,155	27,503,843
Subtotal		14,250,595	14,396,650	14,542,652	14,688,706	57,878,603
		=====	=====	=====	=====	=====
Total	7,481,233	14,250,595	14,396,650	14,542,652	14,688,706	169,722,800

Table A-6: Emissions Summary (tons)

Page 1 of 4

Annual kWh	177,600														
Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Emission Rates															
Direct-Haul (pounds/mile)															
NO _x	0.01498	0.01298	0.01124	0.00975	0.0085	0.00748	0.00664	0.00597	0.00542	0.00495	0.00456	0.00424	0.00401	0.00384	0.00371
SO _x	0.0000292	0.0000279	0.0000282	0.0000283	0.0000275	0.0000276	0.0000277	0.0000275	0.0000273	0.0000271	0.0000276	0.0000273	0.0000270	0.0000266	0.0000278
CO ₂	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594
Transfer-Haul (pounds/mile)															
NO _x	0.01488	0.01298	0.01133	0.00992	0.00872	0.00774	0.00694	0.00628	0.00574	0.00529	0.00492	0.00462	0.00438	0.00419	0.00404
SO _x	0.0000340	0.0000338	0.0000335	0.0000332	0.0000330	0.0000329	0.0000327	0.0000326	0.0000325	0.0000324	0.0000324	0.0000323	0.0000323	0.0000322	0.0000322
CO ₂	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475
Transfer Station Equipment (pounds/ton MSW handled)															
NO _x	0.02085	0.01872	0.01659	0.01446	0.01233	0.01127	0.01021	0.00916	0.00810	0.00704	0.00670	0.00635	0.00601	0.00566	0.00532
SO _x	0.0009042	0.0008845	0.0008648	0.0008451	0.0008254	0.0008158	0.0008063	0.0007967	0.0007872	0.0007776	0.0007747	0.0007718	0.0007689	0.0007660	0.0007631
CO ₂	4.917	4.917	4.917	4.917	4.917	4.918	4.918	4.918	4.918	4.918	4.918	4.918	4.918	4.918	4.918
Transfer Station Electricity (pounds/kWh)															
NO _x	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125
SO _x	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904
CO ₂	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52
Current Conditions Scenario															
In-County LFs															
Direct-Haul															
NO _x	35.3	30.9	27.0	23.7	20.9	18.6	16.7	15.1	13.9	12.8	11.9	11.2			
SO _x	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			
CO ₂	13,169.4	13,315.2	13,461.0	13,606.7	13,752.5	13,898.3	14,044.0	14,189.8	14,335.6	14,481.3	14,627.1	14,772.9			
Transfer-Haul															
NO _x	9.0	7.9	7.0	6.2	5.5	4.9	4.5	4.1	3.8	3.5	3.3	3.1			
SO _x	-	-	-	-	-	-	-	-	-	-	-	-			
CO ₂	2,699.5	2,729.6	2,759.3	2,789.1	2,819.2	2,848.9	2,879.1	2,908.8	2,938.5	2,968.7	2,998.4	3,028.1			
Export to Out-of-County TSs															
Direct-Haul															
NO _x													16.3	15.7	15.3
SO _x													0.1	0.1	0.1
CO ₂													22,680.5	22,902.1	23,123.7
Transfer-Haul															
NO _x													15.0	14.5	14.1
SO _x													0.1	0.1	0.1
CO ₂													15,290.9	15,440.4	15,589.8
Total															
NO _x	44.3	38.8	34.0	29.9	26.4	23.5	21.2	19.2	17.7	16.3	15.2	14.3	31.3	30.2	29.4
SO _x	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
CO ₂	15,868.9	16,044.8	16,220.3	16,395.8	16,571.7	16,747.2	16,923.1	17,098.6	17,274.1	17,450.0	17,625.5	17,801.0	37,971.4	38,342.5	38,713.5
Lake TS Scenario															
In-County LFs + Lake TS															
Direct-Haul															
NO _x	32.8	28.8	25.2	22.1	19.5	17.4	15.6	14.2	13.0	12.0	11.2	10.5	10.0	9.7	9.5
SO _x	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
CO ₂	12,261.6	12,407.5	12,553.2	12,699.1	12,844.7	12,990.6	13,136.2	13,282.2	13,427.8	13,573.6	13,719.3	13,865.2	14,010.8	14,156.7	14,302.4
Transfer-Haul															
NO _x	15.7	13.8	12.1	10.7	9.5	8.4	7.6	6.9	6.4	5.9	5.5	5.2	5.0	4.8	4.7
SO _x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO ₂	4,733.2	4,762.9	4,793.1	4,822.8	4,852.5	4,882.7	4,912.4	4,942.1	4,972.2	5,002.0	5,032.1	5,061.8	5,091.6	5,121.7	5,151.4
Transfer Station Operations															
NO _x	2.4	2.1	1.9	1.7	1.4	1.3	1.2	1.1	1.0	0.9	0.8	0.8	0.8	0.7	0.7
SO _x	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
CO ₂	662.3	662.3	662.3	662.3	662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4
Lake TS + Export to Out-of-County TSs															
Direct-Haul															
NO _x															
SO _x															
CO ₂															
Transfer-Haul															
NO _x															
SO _x															
CO ₂															
Transfer Station Operations															
NO _x															
SO _x															
CO ₂															
Total															
NO _x	50.9	44.7	39.2	34.5	30.4	27.1	24.4	22.2	20.4	18.8	17.5	16.5	15.8	15.2	14.9
SO _x	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
CO ₂	17,657.1	17,832.7	18,008.6	18,184.2	18,359.6	18,535.7	18,711.0	18,886.7	19,062.4	19,238.0	19,413.8	19,589.4	19,764.8	19,940.8	20,116.2

Table A-6: Emissions Summary (tons)

Annual kWh	177,600															
Year	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Total
Emission Rates	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	
Direct-Haul (pounds/mile)																
NO _x	0.00361	0.00353	0.00347	0.00343	0.0034	0.00338	0.00335	0.00335	0.00334	0.00333	0.00333	0.00333	0.00333	0.00333	0.00333	
SO _x	0.0000275	0.0000271	0.0000268	0.0000272	0.0000268	0.0000264	0.0000275	0.0000278	0.0000281	0.0000277	0.0000273	0.0000276	0.0000272	0.0000281	0.0000277	
CO ₂	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	
Transfer-Haul (pounds/mile)																
NO _x	0.00393	0.00385	0.00378	0.00374	0.0037	0.00368	0.00365	0.00364	0.00363	0.00363	0.00363	0.00363	0.00362	0.00362	0.00362	
SO _x	0.0000322	0.0000322	0.0000322	0.0000322	0.0000321	0.0000321	0.0000321	0.0000321	0.0000321	0.0000321	0.0000321	0.0000321	0.0000321	0.0000321	0.0000321	
CO ₂	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	
Transfer Station Equipment (pounds/ton MSW handled)																
NO _x	0.00523	0.00514	0.00504	0.00495	0.00486	0.00483	0.00481	0.00478	0.00476	0.00473	0.00472	0.00472	0.00471	0.00471	0.00470	
SO _x	0.0007623	0.0007615	0.0007608	0.0007600	0.0007592	0.0007589	0.0007586	0.0007584	0.0007581	0.0007578	0.0007578	0.0007578	0.0007577	0.0007577	0.0007577	
CO ₂	4.918	4.918	4.918	4.918	4.918	4.918	4.918	4.918	4.918	4.918	4.918	4.918	4.918	4.918	4.918	
Transfer Station Electricity (pounds/kWh)																
NO _x	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	
SO _x	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	
CO ₂	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	
Current Conditions Scenario																
In-County LFs																
Direct-Haul																
NO _x																238.0
SO _x																1.2
CO ₂																167,653.8
Transfer-Haul																
NO _x																62.8
SO _x																-
CO ₂																34,367.2
Export to Out-of-County TSs																
Direct-Haul																
NO _x	15.1	14.9	14.8	14.7	14.7	14.8	14.8	14.9	15.0	15.1	15.2	15.3	15.5	15.6	15.7	273.4
SO _x	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.8
CO ₂	23,345.4	23,566.9	23,788.6	24,010.1	24,231.8	24,453.4	24,675.0	24,896.6	25,118.3	25,339.8	25,561.5	25,783.0	26,004.7	26,226.2	26,447.9	442,155.5
Transfer-Haul																
NO _x	13.8	13.7	13.5	13.5	13.5	13.6	13.6	13.7	13.7	13.9	14.0	14.1	14.2	14.3	14.4	251.1
SO _x	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.8
CO ₂	15,739.3	15,888.7	16,037.8	16,187.3	16,336.7	16,486.2	16,635.6	16,785.1	16,934.5	17,084.0	17,233.1	17,382.5	17,532.0	17,681.4	17,830.9	298,096.2
Total																
NO _x	28.9	28.6	28.3	28.2	28.2	28.4	28.4	28.6	28.7	29.0	29.2	29.4	29.7	29.9	30.1	825.3
SO _x	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	4.8
CO ₂	39,084.7	39,455.6	39,826.4	40,197.4	40,568.5	40,939.6	41,310.6	41,681.7	42,052.8	42,423.8	42,794.6	43,165.5	43,536.7	43,907.6	44,278.8	942,272.7
Lake TS Scenario																
In-County LFs + Lake TS																
Direct-Haul																
NO _x	9.3															260.8
SO _x	0.1															1.6
CO ₂	14,448.2															213,679.1
Transfer-Haul																
NO _x	4.6															126.8
SO _x	-															-
CO ₂	5,181.2															79,315.7
Transfer Station Operations																
NO _x	0.7															19.5
SO _x	0.6															9.6
CO ₂	662.4															10,598.0
Lake TS + Export to Out-of-County TSs																
Direct-Haul																
NO _x		13.2	13.1	13.1	13.1	13.2	13.2	13.3	13.4	13.5	13.6	13.8	13.9	14.0	14.2	188.6
SO _x		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.4
CO ₂		20,907.1	21,128.8	21,350.3	21,572.0	21,793.5	22,015.2	22,236.8	22,458.5	22,680.0	22,901.7	23,123.2	23,344.9	23,566.4	23,788.1	312,866.5
Transfer-Haul																
NO _x		13.0	12.9	12.9	12.9	13.0	13.0	13.1	13.1	13.3	13.4	13.5	13.6	13.7	13.8	185.2
SO _x		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.4
CO ₂		15,160.8	15,310.2	15,459.7	15,609.1	15,758.6	15,907.7	16,057.1	16,206.6	16,356.0	16,505.5	16,655.0	16,804.4	16,953.9	17,102.9	225,847.5
Transfer Station Operations																
NO _x		0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	8.6
SO _x		0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	8.4
CO ₂		662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4	9,273.6
Total																
NO _x	14.6	26.9	26.7	26.6	26.6	26.8	26.8	27.0	27.1	27.4	27.6	27.9	28.1	28.3	28.6	789.5
SO _x	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	22.4
CO ₂	20,291.8	36,730.3	37,101.4	37,472.4	37,843.5	38,214.5	38,585.3	38,956.3	39,327.5	39,698.4	40,069.6	40,440.6	40,811.7	41,182.7	41,553.4	851,580.4

Table A-6: Emissions Summary (tons)

Annual kWh	177,600														
Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Current Conditions Scenario															
In-County LFs															
Direct-Haul															
NO _x	35.3	30.9	27.0	23.7	20.9	18.6	16.7	15.1	13.9	12.8	11.9	11.2			
SO _x	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			
CO ₂	13,169.4	13,315.2	13,461.0	13,606.7	13,752.5	13,898.3	14,044.0	14,189.8	14,335.6	14,481.3	14,627.1	14,772.9			
Transfer-Haul															
NO _x	9.0	7.9	7.0	6.2	5.5	4.9	4.5	4.1	3.8	3.5	3.3	3.1			
SO _x	-	-	-	-	-	-	-	-	-	-	-	-			
CO ₂	2,699.5	2,729.6	2,759.3	2,789.1	2,819.2	2,848.9	2,879.1	2,908.8	2,938.5	2,968.7	2,998.4	3,028.1			
Export to Out-of-County TSs															
Direct-Haul															
NO _x													16.3	15.7	15.3
SO _x													0.1	0.1	0.1
CO ₂													22,680.5	22,902.1	23,123.7
Transfer-Haul															
NO _x													15.0	14.5	14.1
SO _x													0.1	0.1	0.1
CO ₂													15,290.9	15,440.4	15,589.8
Total															
NO _x	44.3	38.8	34.0	29.9	26.4	23.5	21.2	19.2	17.7	16.3	15.2	14.3	31.3	30.2	29.4
SO _x	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
CO ₂	15,868.9	16,044.8	16,220.3	16,395.8	16,571.7	16,747.2	16,923.1	17,098.6	17,274.1	17,450.0	17,625.5	17,801.0	37,971.4	38,342.5	38,713.5
Lake TS Scenario															
In-County LFs + Lake TS															
Direct-Haul															
NO _x	32.8	28.8	25.2	22.1	19.5	17.4	15.6	14.2	13.0	12.0	11.2	10.5	10.0	9.7	9.5
SO _x	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
CO ₂	12,261.6	12,407.5	12,553.2	12,699.1	12,844.7	12,990.6	13,136.2	13,282.2	13,427.8	13,573.6	13,719.3	13,865.2	14,010.8	14,156.7	14,302.4
Transfer-Haul															
NO _x	15.7	13.8	12.1	10.7	9.5	8.4	7.6	6.9	6.4	5.9	5.5	5.2	5.0	4.8	4.7
SO _x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO ₂	4,733.2	4,762.9	4,793.1	4,822.8	4,852.5	4,882.7	4,912.4	4,942.1	4,972.2	5,002.0	5,032.1	5,061.8	5,091.6	5,121.7	5,151.4
Transfer Station Operations															
NO _x	2.4	2.1	1.9	1.7	1.4	1.3	1.2	1.1	1.0	0.9	0.8	0.8	0.8	0.7	0.7
SO _x	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
CO ₂	662.3	662.3	662.3	662.3	662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4
Lake TS + Export to Out-of-County TSs															
Direct-Haul															
NO _x															
SO _x															
CO ₂															
Transfer-Haul															
NO _x															
SO _x															
CO ₂															
Transfer Station Operations															
NO _x															
SO _x															
CO ₂															
Total															
NO _x	50.9	44.7	39.2	34.5	30.4	27.1	24.4	22.2	20.4	18.8	17.5	16.5	15.8	15.2	14.9
SO _x	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
CO ₂	17,657.1	17,832.7	18,008.6	18,184.2	18,359.6	18,535.7	18,711.0	18,886.7	19,062.4	19,238.0	19,413.8	19,589.4	19,764.8	19,940.8	20,116.2

Table A-6: Emissions Summary (tons)

Annual kWh	177,600					
Year	16 2031	17 2032	18 2033	19 2034	20 2035	Total
Current Conditions Scenario						
In-County LFs						
Direct-Haul						
NO _x						238.0
SO _x						1.2
CO ₂						167,653.8
Transfer-Haul						
NO _x						62.8
SO _x						-
CO ₂						34,367.2
Export to Out-of-County TSs						
Direct-Haul						
NO _x	15.1	14.9	14.8	14.7	14.7	121.5
SO _x	0.1	0.1	0.1	0.1	0.1	0.8
CO ₂	23,345.4	23,566.9	23,788.6	24,010.1	24,231.8	187,649.1
Transfer-Haul						
NO _x	13.8	13.7	13.5	13.5	13.5	111.6
SO _x	0.1	0.1	0.1	0.1	0.1	0.8
CO ₂	15,739.3	15,888.7	16,037.8	16,187.3	16,336.7	126,510.9
Total						
NO _x	28.9	28.6	28.3	28.2	28.2	533.9
SO _x	0.2	0.2	0.2	0.2	0.2	2.8
CO ₂	39,084.7	39,455.6	39,826.4	40,197.4	40,568.5	516,181.0
Lake TS Scenario						
In-County LFs + Lake TS						
Direct-Haul						
NO _x	9.3					260.8
SO _x	0.1					1.6
CO ₂	14,448.2					213,679.1
Transfer-Haul						
NO _x	4.6					126.8
SO _x	-					-
CO ₂	5,181.2					79,315.7
Transfer Station Operations						
NO _x	0.7					19.5
SO _x	0.6					9.6
CO ₂	662.4					10,598.0
Lake TS + Export to Out-of-County TSs						
Direct-Haul						
NO _x		13.2	13.1	13.1	13.1	52.5
SO _x		0.1	0.1	0.1	0.1	0.4
CO ₂		20,907.1	21,128.8	21,350.3	21,572.0	84,958.2
Transfer-Haul						
NO _x		13.0	12.9	12.9	12.9	51.7
SO _x		0.1	0.1	0.1	0.1	0.4
CO ₂		15,160.8	15,310.2	15,459.7	15,609.1	61,539.8
Transfer Station Operations						
NO _x		0.7	0.7	0.6	0.6	2.6
SO _x		0.6	0.6	0.6	0.6	2.4
CO ₂		662.4	662.4	662.4	662.4	2,649.6
Total						
NO _x	14.6	26.9	26.7	26.6	26.6	513.9
SO _x	0.7	0.8	0.8	0.8	0.8	14.4
CO ₂	20,291.8	36,730.3	37,101.4	37,472.4	37,843.5	452,740.4

Table A-7: Annual Energy Consumption

Fuel Efficiency:
 Direct-haul (miles per gallon) 4
 Transfer-haul (miles per gallon) 5
 Transfer station equipment (gallons per day) 114.4

Year	1 2016	2 2017	3 2018	4 2019	5 2020	6 2021	7 2022	8 2023	9 2024	10 2025	11 2026	12 2027	13 2028	14 2029	15 2030
Current Conditions Scenario															
In-County LFs															
Direct-Haul	1,177,103	1,190,131	1,203,161	1,216,190	1,229,220	1,242,248	1,255,278	1,268,306	1,281,336	1,294,364	1,307,389	1,320,422			
Transfer-Haul	241,295	243,987	246,645	249,303	251,996	254,654	257,347	260,005	262,663	265,355	268,013	270,671			
Subtotal	1,418,398	1,434,118	1,449,806	1,465,493	1,481,216	1,496,902	1,512,625	1,528,311	1,543,999	1,559,719	1,575,402	1,591,093			
Export to Out-of-County TSs															
Direct-Haul													2,027,213	2,047,027	2,066,829
Transfer-Haul													1,366,785	1,380,144	1,393,503
Subtotal													3,393,998	3,427,171	3,460,332
Total	1,418,398	1,434,118	1,449,806	1,465,493	1,481,216	1,496,902	1,512,625	1,528,311	1,543,999	1,559,719	1,575,402	1,591,093	3,393,998	3,427,171	3,460,332
Lake TS Scenario															
In-County LFs + Lake TS															
Direct-Haul	1,095,961	1,109,004	1,122,019	1,135,062	1,148,078	1,161,120	1,174,136	1,187,179	1,200,194	1,213,231	1,226,252	1,239,290	1,252,310	1,265,348	1,278,368
Transfer-Haul	423,079	425,737	428,429	431,087	433,745	436,438	439,096	441,754	444,447	447,105	449,797	452,455	455,113	457,806	460,464
Subtotal	1,519,040	1,534,741	1,550,448	1,566,149	1,581,823	1,597,558	1,613,232	1,628,933	1,644,641	1,660,336	1,676,049	1,691,745	1,707,423	1,723,154	1,738,832
Lake TS + Export to Out-of-County TSs															
Direct-Haul															
Transfer-Haul															
Subtotal															
Transfer Station Operations	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718
Total	1,551,758	1,567,459	1,583,166	1,598,867	1,614,541	1,630,276	1,645,950	1,661,651	1,677,359	1,693,054	1,708,767	1,724,463	1,740,141	1,755,872	1,771,550
Current Conditions Scenario															
In-County LFs															
Direct-Haul	1,177,103	1,190,131	1,203,161	1,216,190	1,229,220	1,242,248	1,255,278	1,268,306	1,281,336	1,294,364	1,307,389	1,320,422			
Transfer-Haul	241,295	243,987	246,645	249,303	251,996	254,654	257,347	260,005	262,663	265,355	268,013	270,671			
Subtotal	1,418,398	1,434,118	1,449,806	1,465,493	1,481,216	1,496,902	1,512,625	1,528,311	1,543,999	1,559,719	1,575,402	1,591,093			
Export to Out-of-County TSs															
Direct-Haul													2,027,213	2,047,027	2,066,829
Transfer-Haul													1,366,785	1,380,144	1,393,503
Subtotal													3,393,998	3,427,171	3,460,332
Total	1,418,398	1,434,118	1,449,806	1,465,493	1,481,216	1,496,902	1,512,625	1,528,311	1,543,999	1,559,719	1,575,402	1,591,093	3,393,998	3,427,171	3,460,332
Lake TS Scenario															
In-County LFs + Lake TS															
Direct-Haul	1,095,961	1,109,004	1,122,019	1,135,062	1,148,078	1,161,120	1,174,136	1,187,179	1,200,194	1,213,231	1,226,252	1,239,290	1,252,310	1,265,348	1,278,368
Transfer-Haul	423,079	425,737	428,429	431,087	433,745	436,438	439,096	441,754	444,447	447,105	449,797	452,455	455,113	457,806	460,464
Subtotal	1,519,040	1,534,741	1,550,448	1,566,149	1,581,823	1,597,558	1,613,232	1,628,933	1,644,641	1,660,336	1,676,049	1,691,745	1,707,423	1,723,154	1,738,832
Lake TS + Export to Out-of-County TSs															
Direct-Haul															
Transfer-Haul															
Subtotal															
Transfer Station Operations	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718
Total	1,551,758	1,567,459	1,583,166	1,598,867	1,614,541	1,630,276	1,645,950	1,661,651	1,677,359	1,693,054	1,708,767	1,724,463	1,740,141	1,755,872	1,771,550

Table A-7: Annual Energy Consumption

Fuel Efficiency:	4															
Direct-haul (miles per gallon)	5															
Transfer-haul (miles per gallon)																
Transfer station equipment (gallons per day)	114.4															
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Year	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Total
Current Conditions Scenario																
In-County LFs																
Direct-Haul																14,985,148
Transfer-Haul																3,071,934
Subtotal																18,057,082
Export to Out-of-County TSs																
Direct-Haul	2,086,643	2,106,445	2,126,259	2,146,061	2,165,875	2,185,677	2,205,491	2,225,293	2,245,107	2,264,909	2,284,723	2,304,525	2,324,339	2,344,141	2,363,955	39,520,512
Transfer-Haul	1,406,863	1,420,222	1,433,547	1,446,906	1,460,265	1,473,624	1,486,984	1,500,343	1,513,702	1,527,061	1,540,386	1,553,745	1,567,104	1,580,464	1,593,823	26,645,471
Subtotal	3,493,506	3,526,667	3,559,806	3,592,967	3,626,140	3,659,301	3,692,475	3,725,636	3,758,809	3,791,970	3,825,109	3,858,270	3,891,443	3,924,605	3,957,778	66,165,983
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Total	3,493,506	3,526,667	3,559,806	3,592,967	3,626,140	3,659,301	3,692,475	3,725,636	3,758,809	3,791,970	3,825,109	3,858,270	3,891,443	3,924,605	3,957,778	84,223,065
Lake TS Scenario																
In-County LFs + Lake TS																
Direct-Haul	1,291,406															19,098,958
Transfer-Haul	463,122															7,089,674
Subtotal	1,754,528															26,188,632
Lake TS + Export to Out-of-County TSs																
Direct-Haul		1,868,707	1,888,522	1,908,323	1,928,138	1,947,939	1,967,754	1,987,555	2,007,370	2,027,171	2,046,986	2,066,787	2,086,602	2,106,403	2,126,218	27,964,475
Transfer-Haul		1,355,153	1,368,513	1,381,872	1,395,231	1,408,590	1,421,915	1,435,274	1,448,633	1,461,993	1,475,352	1,488,711	1,502,070	1,515,430	1,528,754	20,187,491
Subtotal		3,223,860	3,257,035	3,290,195	3,323,369	3,356,529	3,389,669	3,422,829	3,456,003	3,489,164	3,522,338	3,555,498	3,588,672	3,621,833	3,654,972	48,151,966
Transfer Station Operations	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	981,540
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Total	1,787,246	3,256,578	3,289,753	3,322,913	3,356,087	3,389,247	3,422,387	3,455,547	3,488,721	3,521,882	3,555,056	3,588,216	3,621,390	3,654,551	3,687,690	75,322,138
	16	17	18	19	20											
Year	2031	2032	2033	2034	2035	Total										
Current Conditions Scenario																
In-County LFs																
Direct-Haul						14,985,148										
Transfer-Haul						3,071,934										
Subtotal						18,057,082										
Export to Out-of-County TSs																
Direct-Haul	2,086,643	2,106,445	2,126,259	2,146,061	2,165,875	16,772,352										
Transfer-Haul	1,406,863	1,420,222	1,433,547	1,446,906	1,460,265	11,308,235										
Subtotal	3,493,506	3,526,667	3,559,806	3,592,967	3,626,140	28,080,587										
	=====	=====	=====	=====	=====	=====										
Total	3,493,506	3,526,667	3,559,806	3,592,967	3,626,140	46,137,669										
Lake TS Scenario																
In-County LFs + Lake TS																
Direct-Haul	1,291,406					19,098,958										
Transfer-Haul	463,122					7,089,674										
Subtotal	1,754,528					26,188,632										
Lake TS + Export to Out-of-County TSs																
Direct-Haul		1,868,707	1,888,522	1,908,323	1,928,138	7,593,690										
Transfer-Haul		1,355,153	1,368,513	1,381,872	1,395,231	5,500,769										
Subtotal		3,223,860	3,257,035	3,290,195	3,323,369	13,094,459										
Transfer Station Operations	32,718	32,718	32,718	32,718	32,718	654,360										
	=====	=====	=====	=====	=====	=====										
Total	1,787,246	3,256,578	3,289,753	3,322,913	3,356,087	39,937,451										

Table A-8: Summary

	<u>NO_x (tons)</u>	<u>SO_x (tons)</u>	<u>CO₂ (tons)</u>	<u>Energy (gallons)</u>
20-Year Life-Cycle				
Current Conditions	533.9	2.8	516,181.0	46,137,669
Lake Transfer Station Conditions	513.9	14.4	452,740.4	39,937,451
Change	(20.0)	11.6	(63,440.6)	(6,200,218)
30-Year Life-Cycle				
Current Conditions	825.3	4.8	942,272.7	84,223,065
Lake Transfer Station Conditions	789.5	22.4	851,580.4	75,322,138
Change	(35.8)	17.6	(90,692.3)	(8,900,927)

Attachment B

Sensitivity Analysis

Table B-4: Condition 1: Current Conditions (Countryside LF, Veolia ES Zion LF, 13% Export to Out-of-County Transfer Stations)

Disposal Rate (pcd) 4.77 pcd (2010), reducing to 3.48 pcd (2020)
 Average Direct-Haul Payload 6 tons
 Average Transfer-Haul Payload 24 tons

System Tonnage Distribution	% Share	Distance (one-way)
Countryside LF	44%	10.7
Zion LF	43%	18.8
Out-of-County TS	13%	25.6
Total	100%	
Lake TS		12.3

Transfer Loads to LF	
From Lake TS	68.1
From Out-of-County TS	86.3

Year	1 2016	2 2017	3 2018	4 2019	5 2020	6 2021	7 2022	8 2023	9 2024	10 2025	11 2026	12 2027	13 2028	14 2029	15 2030
Population	753,504	761,845	770,185	778,526	786,866	795,206	803,547	811,887	820,228	828,568	836,908	845,249	853,589	861,930	870,270
Annual Tons	542,879	531,852	520,985	510,281	499,739	505,035	510,333	515,629	520,927	526,224	531,520	536,818	542,114	547,412	552,708
Countryside LF	238,867	234,015	229,233	224,524	219,885	222,215	224,547	226,877	229,208	231,539	233,869	236,200	238,530	240,861	243,192
Zion LF	233,438	228,696	224,024	219,421	214,888	217,165	219,443	221,720	223,999	226,276	228,554	230,832	233,109	235,387	237,664
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	70,574	69,141	67,728	66,337	64,966	65,655	66,343	67,032	67,721	68,409	69,098	69,786	70,475	71,164	71,852
Annual Truckloads (Direct)	90,479	88,643	86,831	85,047	83,291	84,173	85,056	85,938	86,821	87,705	88,586	89,470	90,353	91,236	92,118
Countryside LF	39,811	39,003	38,206	37,421	36,648	37,036	37,425	37,813	38,201	38,590	38,978	39,367	39,755	40,144	40,532
Zion LF	38,906	38,116	37,337	36,570	35,815	36,194	36,574	36,953	37,333	37,713	38,092	38,472	38,852	39,231	39,611
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	11,762	11,524	11,288	11,056	10,828	10,943	11,057	11,172	11,287	11,402	11,516	11,631	11,746	11,861	11,975
Annual Truckloads (Transfer)	2,941	2,881	2,822	2,764	2,707	2,736	2,764	2,793	2,822	2,850	2,879	2,908	2,936	2,965	2,994
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	2,941	2,881	2,822	2,764	2,707	2,736	2,764	2,793	2,822	2,850	2,879	2,908	2,936	2,965	2,994
Annual VMT (Direct)	2,917,035	2,857,855	2,799,425	2,741,908	2,685,305	2,713,746	2,742,195	2,770,637	2,799,116	2,827,617	2,856,007	2,884,508	2,912,987	2,941,451	2,969,879
Countryside LF	851,955	834,664	817,608	800,809	784,267	792,570	800,895	809,198	817,501	825,826	834,129	842,454	850,757	859,082	867,385
Zion LF	1,462,866	1,433,162	1,403,871	1,375,032	1,346,644	1,360,894	1,375,182	1,389,433	1,403,721	1,418,009	1,432,259	1,446,547	1,460,835	1,475,086	1,489,374
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	602,214	590,029	577,946	566,067	554,394	560,282	566,118	572,006	577,894	583,782	589,619	595,507	601,395	607,283	613,120
Annual VMT (Transfer)	507,617	497,261	487,077	477,066	467,228	472,234	477,066	482,072	487,077	491,910	496,915	501,921	506,754	511,759	516,764
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	507,617	497,261	487,077	477,066	467,228	472,234	477,066	482,072	487,077	491,910	496,915	501,921	506,754	511,759	516,764
Total Annual VMT	3,424,652	3,355,116	3,286,502	3,218,974	3,152,533	3,185,980	3,219,261	3,252,709	3,286,193	3,319,527	3,352,922	3,386,429	3,419,741	3,453,210	3,486,643
Countryside LF	851,955	834,664	817,608	800,809	784,267	792,570	800,895	809,198	817,501	825,826	834,129	842,454	850,757	859,082	867,385
Zion LF	1,462,866	1,433,162	1,403,871	1,375,032	1,346,644	1,360,894	1,375,182	1,389,433	1,403,721	1,418,009	1,432,259	1,446,547	1,460,835	1,475,086	1,489,374
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	1,109,831	1,087,290	1,065,023	1,043,133	1,021,622	1,032,516	1,043,184	1,054,078	1,064,971	1,075,692	1,086,534	1,097,428	1,108,149	1,119,042	1,129,884

Table B-4: Condition 1: Current Conditions (Countryside LF, Veolia ES Zion LF, 13% Export to Out-of-County Transfer Stations)

Disposal Rate (pcd) 4.77 pcd (2010), reducing to 3.48 pcd (2020)
 Average Direct-Haul Payload 6 tons
 Average Transfer-Haul Payload 24 tons

<u>System Tonnage Distribution</u>	<u>% Share</u>	<u>Distance (one-way)</u>
Countryside LF	44%	10.7
Zion LF	43%	18.8
Out-of-County TS	13%	25.6
Total	100%	
Lake TS		12.3

Transfer Loads to LF	
From Lake TS	68.1
From Out-of-County TS	86.3

Year	16 2031	17 2032	18 2033	19 2034	20 2035	21 2036	22 2037	23 2038	24 2039	25 2040	26 2041	27 2042	28 2043	29 2044	30 2045
Population	878,610	886,951	895,291	903,632	911,972	920,312	928,653	936,993	945,334	953,674	962,014	970,355	978,695	987,036	995,376
Annual Tons	558,005	563,303	568,599	573,897	579,193	584,490	589,788	595,084	600,382	605,678	610,975	616,272	621,569	626,867	632,163
Countryside LF	245,522	247,853	250,184	252,515	254,845	257,176	259,507	261,837	264,168	266,498	268,829	271,160	273,490	275,821	278,152
Zion LF	239,942	242,220	244,498	246,776	249,053	251,331	253,609	255,886	258,164	260,442	262,719	264,997	267,275	269,553	271,830
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	72,541	73,229	73,918	74,607	75,295	75,984	76,672	77,361	78,050	78,738	79,427	80,115	80,804	81,493	82,181
Annual Truckloads (Direct)	93,000	93,884	94,767	95,650	96,532	97,416	98,298	99,182	100,063	100,946	101,830	102,712	103,595	104,478	105,361
Countryside LF	40,920	41,309	41,697	42,086	42,474	42,863	43,251	43,640	44,028	44,416	44,805	45,193	45,582	45,970	46,359
Zion LF	39,990	40,370	40,750	41,129	41,509	41,889	42,268	42,648	43,027	43,407	43,787	44,166	44,546	44,926	45,305
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	12,090	12,205	12,320	12,435	12,549	12,664	12,779	12,894	13,008	13,123	13,238	13,353	13,467	13,582	13,697
Annual Truckloads (Transfer)	3,023	3,051	3,080	3,109	3,137	3,166	3,195	3,223	3,252	3,281	3,309	3,338	3,367	3,396	3,424
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	3,023	3,051	3,080	3,109	3,137	3,166	3,195	3,223	3,252	3,281	3,309	3,338	3,367	3,396	3,424
Annual VMT (Direct)	2,998,320	3,026,821	3,055,300	3,083,762	3,112,191	3,140,691	3,169,133	3,197,634	3,226,024	3,254,503	3,283,004	3,311,446	3,339,895	3,368,374	3,396,837
Countryside LF	875,688	884,013	892,316	900,640	908,944	917,268	925,571	933,896	942,199	950,502	958,827	967,130	975,455	983,758	992,083
Zion LF	1,503,624	1,517,912	1,532,200	1,546,450	1,560,738	1,575,026	1,589,277	1,603,565	1,617,815	1,632,103	1,646,391	1,660,642	1,674,930	1,689,218	1,703,468
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	619,008	624,896	630,784	636,672	642,509	648,397	654,285	660,173	666,010	671,898	677,786	683,674	689,510	695,398	701,286
Annual VMT (Transfer)	521,770	526,603	531,608	536,613	541,446	546,452	551,457	556,290	561,295	566,301	571,133	576,139	581,144	586,150	590,982
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	521,770	526,603	531,608	536,613	541,446	546,452	551,457	556,290	561,295	566,301	571,133	576,139	581,144	586,150	590,982
Total Annual VMT	3,520,090	3,553,424	3,586,908	3,620,375	3,653,637	3,687,143	3,720,590	3,753,924	3,787,319	3,820,804	3,854,137	3,887,585	3,921,039	3,954,524	3,987,819
Countryside LF	875,688	884,013	892,316	900,640	908,944	917,268	925,571	933,896	942,199	950,502	958,827	967,130	975,455	983,758	992,083
Zion LF	1,503,624	1,517,912	1,532,200	1,546,450	1,560,738	1,575,026	1,589,277	1,603,565	1,617,815	1,632,103	1,646,391	1,660,642	1,674,930	1,689,218	1,703,468
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	1,140,778	1,151,499	1,162,392	1,173,285	1,183,955	1,194,849	1,205,742	1,216,463	1,227,305	1,238,199	1,248,919	1,259,813	1,270,654	1,281,548	1,292,268

Table B-4: Condition 2: Future Conditions (Export to Out-of-County TSs)

Disposal Rate (pcd) 4.77 pcd (2010), reducing to 3.48 pcd (2020)
 Average Direct-Haul Payload 6 tons
 Average Transfer-Haul Payload 24 tons

<u>System Tonnage Distribution</u>	<u>% Share</u>	<u>Distance (one-way)</u>
Countryside LF	0%	10.7
Zion LF	0%	18.8
Out-of-County TS	100%	25.6
Total	100%	
Lake TS		12.3

Transfer Loads to LF	
From Lake TS	68.1
From Out-of-County TS	86.3

Year	1 2016	2 2017	3 2018	4 2019	5 2020	6 2021	7 2022	8 2023	9 2024	10 2025	11 2026	12 2027	13 2028	14 2029	15 2030
Population	753,504	761,845	770,185	778,526	786,866	795,206	803,547	811,887	820,228	828,568	836,908	845,249	853,589	861,930	870,270
Annual Tons	542,879	531,852	520,985	510,281	499,739	505,035	510,333	515,629	520,927	526,224	531,520	536,818	542,114	547,412	552,708
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	542,879	531,852	520,985	510,281	499,739	505,035	510,333	515,629	520,927	526,224	531,520	536,818	542,114	547,412	552,708
Annual Truckloads (Direct)	90,480	88,642	86,831	85,047	83,290	84,173	85,056	85,938	86,821	87,704	88,587	89,470	90,352	91,235	92,118
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	90,480	88,642	86,831	85,047	83,290	84,173	85,056	85,938	86,821	87,704	88,587	89,470	90,352	91,235	92,118
Annual Truckloads (Transfer)	22,620	22,161	21,708	21,262	20,822	21,043	21,264	21,485	21,705	21,926	22,147	22,367	22,588	22,809	23,030
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	22,620	22,161	21,708	21,262	20,822	21,043	21,264	21,485	21,705	21,926	22,147	22,367	22,588	22,809	23,030
Annual VMT (Direct)	4,632,576	4,538,470	4,445,747	4,354,406	4,264,448	4,309,658	4,354,867	4,400,026	4,445,235	4,490,445	4,535,654	4,580,864	4,626,022	4,671,232	4,716,442
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	4,632,576	4,538,470	4,445,747	4,354,406	4,264,448	4,309,658	4,354,867	4,400,026	4,445,235	4,490,445	4,535,654	4,580,864	4,626,022	4,671,232	4,716,442
Annual VMT (Transfer)	3,904,212	3,824,989	3,746,801	3,669,821	3,593,877	3,632,022	3,670,166	3,708,311	3,746,283	3,784,428	3,822,572	3,860,544	3,898,689	3,936,833	3,974,978
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	3,904,212	3,824,989	3,746,801	3,669,821	3,593,877	3,632,022	3,670,166	3,708,311	3,746,283	3,784,428	3,822,572	3,860,544	3,898,689	3,936,833	3,974,978
Total Annual VMT	8,536,788	8,363,459	8,192,548	8,024,227	7,858,325	7,941,680	8,025,033	8,108,337	8,191,518	8,274,873	8,358,226	8,441,408	8,524,711	8,608,065	8,691,420
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	8,536,788	8,363,459	8,192,548	8,024,227	7,858,325	7,941,680	8,025,033	8,108,337	8,191,518	8,274,873	8,358,226	8,441,408	8,524,711	8,608,065	8,691,420

Table B-4: Condition 2: Future Conditions (Export to Out-of-County TSs)

Disposal Rate (pcd) 4.77 pcd (2010), reducing to 3.48 pcd (2020)
 Average Direct-Haul Payload 6 tons
 Average Transfer-Haul Payload 24 tons

<u>System Tonnage Distribution</u>	<u>% Share</u>	<u>Distance (one-way)</u>													
Countryside LF	0%	10.7													
Zion LF	0%	18.8													
Out-of-County TS	100%	25.6													
Total	100%														
Lake TS		12.3													
Transfer Loads to LF															
From Lake TS		68.1													
From Out-of-County TS		86.3													
Year	16 2031	17 2032	18 2033	19 2034	20 2035	21 2036	22 2037	23 2038	24 2039	25 2040	26 2041	27 2042	28 2043	29 2044	30 2045
Population	878,610	886,951	895,291	903,632	911,972	920,312	928,653	936,993	945,334	953,674	962,014	970,355	978,695	987,036	995,376
Annual Tons	558,005	563,303	568,599	573,897	579,193	584,490	589,788	595,084	600,382	605,678	610,975	616,272	621,569	626,867	632,163
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	558,005	563,303	568,599	573,897	579,193	584,490	589,788	595,084	600,382	605,678	610,975	616,272	621,569	626,867	632,163
Annual Truckloads (Direct)	93,001	93,884	94,767	95,650	96,532	97,415	98,298	99,181	100,064	100,946	101,829	102,712	103,595	104,478	105,361
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	93,001	93,884	94,767	95,650	96,532	97,415	98,298	99,181	100,064	100,946	101,829	102,712	103,595	104,478	105,361
Annual Truckloads (Transfer)	23,250	23,471	23,692	23,912	24,133	24,354	24,575	24,795	25,016	25,237	25,457	25,678	25,899	26,119	26,340
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	23,250	23,471	23,692	23,912	24,133	24,354	24,575	24,795	25,016	25,237	25,457	25,678	25,899	26,119	26,340
Annual VMT (Direct)	4,761,651	4,806,861	4,852,070	4,897,280	4,942,438	4,987,648	5,032,858	5,078,067	5,123,277	5,168,435	5,213,645	5,258,854	5,304,064	5,349,274	5,394,483
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	4,761,651	4,806,861	4,852,070	4,897,280	4,942,438	4,987,648	5,032,858	5,078,067	5,123,277	5,168,435	5,213,645	5,258,854	5,304,064	5,349,274	5,394,483
Annual VMT (Transfer)	4,012,950	4,051,095	4,089,239	4,127,211	4,165,356	4,203,500	4,241,645	4,279,617	4,317,762	4,355,906	4,393,878	4,432,023	4,470,167	4,508,139	4,546,284
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	4,012,950	4,051,095	4,089,239	4,127,211	4,165,356	4,203,500	4,241,645	4,279,617	4,317,762	4,355,906	4,393,878	4,432,023	4,470,167	4,508,139	4,546,284
Total Annual VMT	8,774,601	8,857,956	8,941,309	9,024,491	9,107,794	9,191,148	9,274,503	9,357,684	9,441,039	9,524,341	9,607,523	9,690,877	9,774,231	9,857,413	9,940,767
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out-of-County TS	8,774,601	8,857,956	8,941,309	9,024,491	9,107,794	9,191,148	9,274,503	9,357,684	9,441,039	9,524,341	9,607,523	9,690,877	9,774,231	9,857,413	9,940,767

Table B-4: Condition 3: Interim Conditions (In-County Transfer/Landfill and Export to Out-of-County Transfer Stations)

Disposal Rate (pcd) 4.77 pcd (2010), reducing to 3.48 pcd (2020)
 Average Direct-Haul Payload 6 tons
 Average Transfer-Haul Payload 24 tons

<u>System Tonnage Distribution</u>	<u>% Share</u>	<u>Distance (one-way)</u>
Countryside LF	44%	10.7
Zion LF	43%	18.8
Out-of-County TS	13%	25.6
Total	100%	
Lake TS		12.3

Transfer Loads to LF	
From Lake TS	68.1
From Out-of-County TS	86.3

Year	1 2016	2 2017	3 2018	4 2019	5 2020	6 2021	7 2022	8 2023	9 2024	10 2025	11 2026	12 2027	13 2028	14 2029	15 2030
Population	753,504	761,845	770,185	778,526	786,866	795,206	803,547	811,887	820,228	828,568	836,908	845,249	853,589	861,930	870,270
Annual Tons	542,879	531,852	520,985	510,281	499,739	505,035	510,333	515,629	520,927	526,224	531,520	536,818	542,114	547,412	552,708
Countryside LF	144,487	139,635	134,853	130,144	125,505	127,835	130,167	132,497	134,828	137,159	139,489	141,820	144,150	146,481	148,812
Zion LF	141,203	136,461	131,789	127,186	122,653	124,930	127,208	129,485	131,764	134,041	136,319	138,597	140,874	143,152	145,429
Lake TS	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500
Out-of-County TS	42,689	41,256	39,843	38,452	37,081	37,770	38,458	39,147	39,836	40,524	41,213	41,901	42,590	43,279	43,967
Annual Truckloads (Direct)	90,480	88,643	86,832	85,048	83,290	84,173	85,056	85,939	86,821	87,704	88,587	89,471	90,352	91,236	92,118
Countryside LF	24,081	23,273	22,476	21,691	20,918	21,306	21,695	22,083	22,471	22,860	23,248	23,637	24,025	24,414	24,802
Zion LF	23,534	22,744	21,965	21,198	20,442	20,822	21,201	21,581	21,961	22,340	22,720	23,100	23,479	23,859	24,238
Lake TS	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750
Out-of-County TS	7,115	6,876	6,641	6,409	6,180	6,295	6,410	6,525	6,639	6,754	6,869	6,984	7,098	7,213	7,328
Annual Truckloads (Transfer)	10,717	10,657	10,598	10,540	10,483	10,512	10,540	10,569	10,598	10,627	10,655	10,684	10,713	10,741	10,770
Lake TS	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938
Out-of-County TS	1,779	1,719	1,660	1,602	1,545	1,574	1,602	1,631	1,660	1,689	1,717	1,746	1,775	1,803	1,832
Annual VMT (Direct)	2,643,949	2,584,717	2,526,339	2,468,823	2,412,130	2,440,609	2,469,073	2,497,552	2,525,980	2,554,443	2,582,922	2,611,423	2,639,813	2,668,314	2,696,756
Countryside LF	515,333	498,042	480,986	464,187	447,645	455,948	464,273	472,576	480,879	489,204	497,507	505,832	514,135	522,460	530,763
Zion LF	884,878	855,174	825,884	797,045	768,619	782,907	797,158	811,446	825,734	839,984	854,272	868,560	882,810	897,098	911,349
Lake TS	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450
Out-of-County TS	364,288	352,051	340,019	328,141	316,416	322,304	328,192	334,080	339,917	345,805	351,693	357,581	363,418	369,306	375,194
Annual VMT (Transfer)	1,524,411	1,514,055	1,503,872	1,493,861	1,484,023	1,489,028	1,493,861	1,498,867	1,503,872	1,508,877	1,513,710	1,518,716	1,523,721	1,528,554	1,533,559
Lake TS	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356
Out-of-County TS	307,055	296,699	286,516	276,505	266,667	271,672	276,505	281,511	286,516	291,521	296,354	301,360	306,365	311,198	316,203
Total Annual VMT	4,168,360	4,098,772	4,030,211	3,962,684	3,896,153	3,929,637	3,962,934	3,996,419	4,029,852	4,063,320	4,096,632	4,130,139	4,163,534	4,196,868	4,230,315
Countryside LF	515,333	498,042	480,986	464,187	447,645	455,948	464,273	472,576	480,879	489,204	497,507	505,832	514,135	522,460	530,763
Zion LF	884,878	855,174	825,884	797,045	768,619	782,907	797,158	811,446	825,734	839,984	854,272	868,560	882,810	897,098	911,349
Lake TS	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806
Out-of-County TS	671,343	648,750	626,535	604,646	583,083	593,976	604,697	615,591	626,433	637,326	648,047	658,941	669,783	680,504	691,397

Table B-4: Condition 3: Interim Conditions (In-County Transfer/Landfill and Export to Out-of-County Transfer Stations)

Disposal Rate (pcd) 4.77 pcd (2010), reducing to 3.48 pcd (2020)
 Average Direct-Haul Payload 6 tons
 Average Transfer-Haul Payload 24 tons

<u>System Tonnage Distribution</u>	<u>% Share</u>	<u>Distance (one-way)</u>
Countryside LF	44%	10.7
Zion LF	43%	18.8
Out-of-County TS	13%	25.6
Total	100%	
Lake TS		12.3

Transfer Loads to LF	
From Lake TS	68.1
From Out-of-County TS	86.3

Year	16 2031	17 2032	18 2033	19 2034	20 2035	21 2036	22 2037	23 2038	24 2039	25 2040	26 2041	27 2042	28 2043	29 2044	30 2045
Population	878,610	886,951	895,291	903,632	911,972	920,312	928,653	936,993	945,334	953,674	962,014	970,355	978,695	987,036	995,376
Annual Tons	558,005	563,303	568,599	573,897	579,193	584,490	589,788	595,084	600,382	605,678	610,975	616,272	621,569	626,867	632,163
Countryside LF	151,142	153,473	155,804	158,135	160,465	162,796	165,127	167,457	169,788	172,118	174,449	176,780	179,110	181,441	183,772
Zion LF	147,707	149,985	152,263	154,541	156,818	159,096	161,374	163,651	165,929	168,207	170,484	172,762	175,040	177,318	179,595
Lake TS	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500
Out-of-County TS	44,656	45,344	46,033	46,722	47,410	48,099	48,787	49,476	50,165	50,853	51,542	52,230	52,919	53,608	54,296
Annual Truckloads (Direct)	93,001	93,884	94,766	95,650	96,532	97,416	98,298	99,181	100,064	100,947	101,829	102,712	103,595	104,478	105,361
Countryside LF	25,190	25,579	25,967	26,356	26,744	27,133	27,521	27,910	28,298	28,686	29,075	29,463	29,852	30,240	30,629
Zion LF	24,618	24,998	25,377	25,757	26,136	26,516	26,896	27,275	27,655	28,035	28,414	28,794	29,173	29,553	29,933
Lake TS	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750
Out-of-County TS	7,443	7,557	7,672	7,787	7,902	8,017	8,131	8,246	8,361	8,476	8,590	8,705	8,820	8,935	9,049
Annual Truckloads (Transfer)	10,799	10,827	10,856	10,885	10,913	10,942	10,971	11,000	11,028	11,057	11,086	11,114	11,143	11,172	11,200
Lake TS	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938
Out-of-County TS	1,861	1,889	1,918	1,947	1,975	2,004	2,033	2,062	2,090	2,119	2,148	2,176	2,205	2,234	2,262
Annual VMT (Direct)	2,725,235	2,753,684	2,782,125	2,810,625	2,839,068	2,867,568	2,895,996	2,924,459	2,952,938	2,981,417	3,009,829	3,038,308	3,066,772	3,095,251	3,123,701
Countryside LF	539,066	547,391	555,694	564,018	572,322	580,646	588,949	597,274	605,577	613,880	622,205	630,508	638,833	647,136	655,461
Zion LF	925,637	939,925	954,175	968,463	982,714	997,002	1,011,290	1,025,540	1,039,828	1,054,116	1,068,366	1,082,654	1,096,905	1,111,193	1,125,481
Lake TS	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450
Out-of-County TS	381,082	386,918	392,806	398,694	404,582	410,470	416,307	422,195	428,083	433,971	439,808	445,696	451,584	457,472	463,309
Annual VMT (Transfer)	1,538,565	1,543,397	1,548,403	1,553,408	1,558,241	1,563,246	1,568,252	1,573,257	1,578,090	1,583,095	1,588,101	1,592,934	1,597,939	1,602,944	1,607,777
Lake TS	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356
Out-of-County TS	321,209	326,041	331,047	336,052	340,885	345,890	350,896	355,901	360,734	365,739	370,745	375,578	380,583	385,588	390,421
Total Annual VMT	4,263,800	4,297,081	4,330,528	4,364,033	4,397,309	4,430,814	4,464,248	4,497,716	4,531,028	4,564,512	4,597,930	4,631,242	4,664,711	4,698,195	4,731,478
Countryside LF	539,066	547,391	555,694	564,018	572,322	580,646	588,949	597,274	605,577	613,880	622,205	630,508	638,833	647,136	655,461
Zion LF	925,637	939,925	954,175	968,463	982,714	997,002	1,011,290	1,025,540	1,039,828	1,054,116	1,068,366	1,082,654	1,096,905	1,111,193	1,125,481
Lake TS	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806
Out-of-County TS	702,291	712,959	723,853	734,746	745,467	756,360	767,203	778,096	788,817	799,710	810,553	821,274	832,167	843,060	853,730

Table B-4: Condition 4: Future Conditions (In-County Transfer and Export to Out-of-County TSs)

Disposal Rate (pcd) 4.77 pcd (2010), reducing to 3.48 pcd (2020)
 Average Direct-Haul Payload 6 tons
 Average Transfer-Haul Payload 24 tons

System Tonnage Distribution	% Share	Distance (one-way)
Countryside LF	0%	10.7
Zion LF	0%	18.8
Out-of-County TS	100%	25.6
Total	100%	
Lake TS	0%	12.3

Transfer Loads to LF	
From Lake TS	68.1
From Out-of-County TS	86.3

Year	1 2016	2 2017	3 2018	4 2019	5 2020	6 2021	7 2022	8 2023	9 2024	10 2025	11 2026	12 2027	13 2028	14 2029	15 2030
Population	753,504	761,845	770,185	778,526	786,866	795,206	803,547	811,887	820,228	828,568	836,908	845,249	853,589	861,930	870,270
Annual Tons	542,879	531,852	520,985	510,281	499,739	505,035	510,333	515,629	520,927	526,224	531,520	536,818	542,114	547,412	552,708
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake TS	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500
Out-of-County TS	328,379	317,352	306,485	295,781	285,239	290,535	295,833	301,129	306,427	311,724	317,020	322,318	327,614	332,912	338,208
Annual Truckloads (Direct)	90,480	88,642	86,831	85,047	83,290	84,173	85,056	85,938	86,821	87,704	88,587	89,470	90,352	91,235	92,118
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake TS	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750
Out-of-County TS	54,730	52,892	51,081	49,297	47,540	48,423	49,306	50,188	51,071	51,954	52,837	53,720	54,602	55,485	56,368
Annual Truckloads (Transfer)	22,620	22,161	21,708	21,262	20,823	21,044	21,264	21,485	21,706	21,927	22,147	22,368	22,589	22,809	23,030
Lake TS	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938
Out-of-County TS	13,682	13,223	12,770	12,324	11,885	12,106	12,326	12,547	12,768	12,989	13,209	13,430	13,651	13,871	14,092
Annual VMT (Direct)	3,681,626	3,587,520	3,494,797	3,403,456	3,313,498	3,358,708	3,403,917	3,449,076	3,494,285	3,539,495	3,584,704	3,629,914	3,675,072	3,720,282	3,765,492
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake TS	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450
Out-of-County TS	2,802,176	2,708,070	2,615,347	2,524,006	2,434,048	2,479,258	2,524,467	2,569,626	2,614,835	2,660,045	2,705,254	2,750,464	2,795,622	2,840,832	2,886,042
Annual VMT (Transfer)	3,578,869	3,499,646	3,421,458	3,344,478	3,268,707	3,306,852	3,344,824	3,382,968	3,421,113	3,459,257	3,497,229	3,535,374	3,573,519	3,611,491	3,649,635
Lake TS	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356
Out-of-County TS	2,361,513	2,282,290	2,204,102	2,127,122	2,051,351	2,089,496	2,127,468	2,165,612	2,203,757	2,241,901	2,279,873	2,318,018	2,356,163	2,394,135	2,432,279
Total Annual VMT	7,260,495	7,087,166	6,916,255	6,747,934	6,582,205	6,665,560	6,748,741	6,832,044	6,915,398	6,998,752	7,081,933	7,165,288	7,248,591	7,331,773	7,415,127
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake TS	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806
Out-of-County TS	5,163,689	4,990,360	4,819,449	4,651,128	4,485,399	4,568,754	4,651,935	4,735,238	4,818,592	4,901,946	4,985,127	5,068,482	5,151,785	5,234,967	5,318,321

Table B-4: Condition 4: Future Conditions (In-County Transfer and Export to Out-of-County TSs)

Disposal Rate (pcd) 4.77 pcd (2010), reducing to 3.48 pcd (2020)
 Average Direct-Haul Payload 6 tons
 Average Transfer-Haul Payload 24 tons

System Tonnage Distribution	% Share	Distance (one-way)														
Countryside LF	0%	10.7														
Zion LF	0%	18.8														
Out-of-County TS	100%	25.6														
Total	100%															
Lake TS		12.3														
Transfer Loads to LF																
From Lake TS		68.1														
From Out-of-County TS		86.3														
Year	16 2031	17 2032	18 2033	19 2034	20 2035	21 2036	22 2037	23 2038	24 2039	25 2040	26 2041	27 2042	28 2043	29 2044	30 2045	
Population	878,610	886,951	895,291	903,632	911,972	920,312	928,653	936,993	945,334	953,674	962,014	970,355	978,695	987,036	995,376	
Annual Tons	558,005	563,303	568,599	573,897	579,193	584,490	589,788	595,084	600,382	605,678	610,975	616,272	621,569	626,867	632,163	
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Lake TS	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	214,500	
Out-of-County TS	343,505	348,803	354,099	359,397	364,693	369,990	375,288	380,584	385,882	391,178	396,475	401,772	407,069	412,367	417,663	
Annual Truckloads (Direct)	93,001	93,884	94,767	95,650	96,532	97,415	98,298	99,181	100,064	100,946	101,829	102,712	103,595	104,478	105,361	
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Lake TS	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	35,750	
Out-of-County TS	57,251	58,134	59,017	59,900	60,782	61,665	62,548	63,431	64,314	65,196	66,079	66,962	67,845	68,728	69,611	
Annual Truckloads (Transfer)	23,251	23,471	23,692	23,913	24,134	24,354	24,575	24,796	25,016	25,237	25,458	25,679	25,899	26,120	26,341	
Lake TS	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	8,938	
Out-of-County TS	14,313	14,533	14,754	14,975	15,196	15,416	15,637	15,858	16,078	16,299	16,520	16,741	16,961	17,182	17,403	
Annual VMT (Direct)	3,810,701	3,855,911	3,901,120	3,946,330	3,991,488	4,036,698	4,081,908	4,127,117	4,172,327	4,217,485	4,262,695	4,307,904	4,353,114	4,398,324	4,443,533	
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Lake TS	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	879,450	
Out-of-County TS	2,931,251	2,976,461	3,021,670	3,066,880	3,112,038	3,157,248	3,202,458	3,247,667	3,292,877	3,338,035	3,383,245	3,428,454	3,473,664	3,518,874	3,564,083	
Annual VMT (Transfer)	3,687,780	3,725,752	3,763,896	3,802,041	3,840,186	3,878,158	3,916,302	3,954,447	3,992,419	4,030,563	4,068,708	4,106,853	4,144,825	4,182,969	4,221,114	
Lake TS	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	1,217,356	
Out-of-County TS	2,470,424	2,508,396	2,546,540	2,584,685	2,622,830	2,660,802	2,698,946	2,737,091	2,775,063	2,813,207	2,851,352	2,889,497	2,927,469	2,965,613	3,003,758	
Total Annual VMT	7,498,481	7,581,663	7,665,016	7,748,371	7,831,674	7,914,856	7,998,210	8,081,564	8,164,746	8,248,048	8,331,403	8,414,757	8,497,939	8,581,293	8,664,647	
Countryside LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Zion LF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Lake TS	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	2,096,806	
Out-of-County TS	5,401,675	5,484,857	5,568,210	5,651,565	5,734,868	5,818,050	5,901,404	5,984,758	6,067,940	6,151,242	6,234,597	6,317,951	6,401,133	6,484,487	6,567,841	

Table B-5: Vehicle Miles Traveled (VMT) Summary

Year	1 2016	2 2017	3 2018	4 2019	5 2020	6 2021	7 2022	8 2023	9 2024	10 2025	11 2026	12 2027	13 2028	14 2029	15 2030
Current Conditions Scenario															
In-County LFs															
Direct-Haul	2,917,035	2,857,855	2,799,425	2,741,908	2,685,305	2,713,746	2,742,195	2,770,637	2,799,116	2,827,617	2,856,007	2,884,508			
Transfer-Haul	507,617	497,261	487,077	477,066	467,228	472,234	477,066	482,072	487,077	491,910	496,915	501,921			
Subtotal	3,424,652	3,355,116	3,286,502	3,218,974	3,152,533	3,185,980	3,219,261	3,252,709	3,286,193	3,319,527	3,352,922	3,386,429			
Export to Out-of-County TSs															
Direct-Haul													4,626,022	4,671,232	4,716,442
Transfer-Haul													3,898,689	3,936,833	3,974,978
Subtotal													8,524,711	8,608,065	8,691,420
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Total	3,424,652	3,355,116	3,286,502	3,218,974	3,152,533	3,185,980	3,219,261	3,252,709	3,286,193	3,319,527	3,352,922	3,386,429	8,524,711	8,608,065	8,691,420
Lake TS Scenario															
In-County LFs + Lake TS															
Direct-Haul	2,643,949	2,584,717	2,526,339	2,468,823	2,412,130	2,440,609	2,469,073	2,497,552	2,525,980	2,554,443	2,582,922	2,611,423	2,639,813	2,668,314	2,696,756
Transfer-Haul	1,524,411	1,514,055	1,503,872	1,493,861	1,484,023	1,489,028	1,493,861	1,498,867	1,503,872	1,508,877	1,513,710	1,518,716	1,523,721	1,528,554	1,533,559
Subtotal	4,168,360	4,098,772	4,030,211	3,962,684	3,896,153	3,929,637	3,962,934	3,996,419	4,029,852	4,063,320	4,096,632	4,130,139	4,163,534	4,196,868	4,230,315
Lake TS + Export to Out-of-County TSs															
Direct-Haul															
Transfer-Haul															
Subtotal															
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Total	4,168,360	4,098,772	4,030,211	3,962,684	3,896,153	3,929,637	3,962,934	3,996,419	4,029,852	4,063,320	4,096,632	4,130,139	4,163,534	4,196,868	4,230,315
Lake TS Scenario															
In-County LFs + Lake TS															
Direct-Haul	2,643,949	2,584,717	2,526,339	2,468,823	2,412,130	2,440,609	2,469,073	2,497,552	2,525,980	2,554,443	2,582,922	2,611,423	2,639,813	2,668,314	2,696,756
Transfer-Haul	1,524,411	1,514,055	1,503,872	1,493,861	1,484,023	1,489,028	1,493,861	1,498,867	1,503,872	1,508,877	1,513,710	1,518,716	1,523,721	1,528,554	1,533,559
Subtotal	4,168,360	4,098,772	4,030,211	3,962,684	3,896,153	3,929,637	3,962,934	3,996,419	4,029,852	4,063,320	4,096,632	4,130,139	4,163,534	4,196,868	4,230,315
Lake TS + Export to Out-of-County TSs															
Direct-Haul															
Transfer-Haul															
Subtotal															
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Total	4,168,360	4,098,772	4,030,211	3,962,684	3,896,153	3,929,637	3,962,934	3,996,419	4,029,852	4,063,320	4,096,632	4,130,139	4,163,534	4,196,868	4,230,315

Table B-5: Vehicle Miles Traveled (VMT) Summary

Year	16 2031	17 2032	18 2033	19 2034	20 2035	21 2036	22 2037	23 2038	24 2039	25 2040	26 2041	27 2042	28 2043	29 2044	30 2045	Total
Current Conditions Scenario																
In-County LFs																
Direct-Haul																33,595,354
Transfer-Haul																5,845,444
Subtotal																39,440,798
Export to Out-of-County TSS																
Direct-Haul	4,761,651	4,806,861	4,852,070	4,897,280	4,942,438	4,987,648	5,032,858	5,078,067	5,123,277	5,168,435	5,213,645	5,258,854	5,304,064	5,349,274	5,394,483	90,184,601
Transfer-Haul	4,012,950	4,051,095	4,089,239	4,127,211	4,165,356	4,203,500	4,241,645	4,279,617	4,317,762	4,355,906	4,393,878	4,432,023	4,470,167	4,508,139	4,546,284	76,005,272
Subtotal	8,774,601	8,857,956	8,941,309	9,024,491	9,107,794	9,191,148	9,274,503	9,357,684	9,441,039	9,524,341	9,607,523	9,690,877	9,774,231	9,857,413	9,940,767	166,189,873
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Total	8,774,601	8,857,956	8,941,309	9,024,491	9,107,794	9,191,148	9,274,503	9,357,684	9,441,039	9,524,341	9,607,523	9,690,877	9,774,231	9,857,413	9,940,767	205,630,671
Lake TS Scenario																
In-County LFs + Lake TS																
Direct-Haul	2,725,235															41,048,078
Transfer-Haul	1,538,565															24,171,552
Subtotal	4,263,800															65,219,630
Lake TS + Export to Out-of-County TSS																
Direct-Haul		3,855,911	3,901,120	3,946,330	3,991,488	4,036,698	4,081,908	4,127,117	4,172,327	4,217,485	4,262,695	4,307,904	4,353,114	4,398,324	4,443,533	58,095,954
Transfer-Haul		3,725,752	3,763,896	3,802,041	3,840,186	3,878,158	3,916,302	3,954,447	3,992,419	4,030,563	4,068,708	4,106,853	4,144,825	4,182,969	4,221,114	55,628,233
Subtotal		7,581,663	7,665,016	7,748,371	7,831,674	7,914,856	7,998,210	8,081,564	8,164,746	8,248,048	8,331,403	8,414,757	8,497,939	8,581,293	8,664,647	113,724,187
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Total	4,263,800	7,581,663	7,665,016	7,748,371	7,831,674	7,914,856	7,998,210	8,081,564	8,164,746	8,248,048	8,331,403	8,414,757	8,497,939	8,581,293	8,664,647	178,943,817

Year	16 2031	17 2032	18 2033	19 2034	20 2035	Total
Current Conditions Scenario						
In-County LFs						
Direct-Haul						33,595,354
Transfer-Haul						5,845,444
Subtotal						39,440,798
Export to Out-of-County TSS						
Direct-Haul	4,761,651	4,806,861	4,852,070	4,897,280	4,942,438	38,273,996
Transfer-Haul	4,012,950	4,051,095	4,089,239	4,127,211	4,165,356	32,256,351
Subtotal	8,774,601	8,857,956	8,941,309	9,024,491	9,107,794	70,530,347
	=====	=====	=====	=====	=====	=====
Total	8,774,601	8,857,956	8,941,309	9,024,491	9,107,794	109,971,145
Lake TS Scenario						
In-County LFs + Lake TS						
Direct-Haul	2,725,235					41,048,078
Transfer-Haul	1,538,565					24,171,552
Subtotal	4,263,800					65,219,630
Lake TS + Export to Out-of-County TSS						
Direct-Haul		3,855,911	3,901,120	3,946,330	3,991,488	15,694,849
Transfer-Haul		3,725,752	3,763,896	3,802,041	3,840,186	15,131,875
Subtotal		7,581,663	7,665,016	7,748,371	7,831,674	30,826,724
	=====	=====	=====	=====	=====	=====
Total	4,263,800	7,581,663	7,665,016	7,748,371	7,831,674	96,046,354

Table B-6: Emissions Summary (pounds)

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Annual kWh	177,600														
Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Emission Rates															
Direct-Haul (pounds/mile)															
NO _x	0.01498	0.01298	0.01124	0.00975	0.0085	0.00748	0.00664	0.00597	0.00542	0.00495	0.00456	0.00424	0.00401	0.00384	0.00371
SO _x	0.0000292	0.0000279	0.0000282	0.0000283	0.0000275	0.0000276	0.0000277	0.0000275	0.0000273	0.0000271	0.0000276	0.0000273	0.0000270	0.0000266	0.0000278
CO ₂	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594
Transfer-Haul (pounds/mile)															
NO _x	0.01488	0.01298	0.01133	0.00992	0.00872	0.00774	0.00694	0.00628	0.00574	0.00529	0.00492	0.00462	0.00438	0.00419	0.00404
SO _x	0.0000340	0.0000338	0.0000335	0.0000332	0.0000330	0.0000329	0.0000327	0.0000326	0.0000325	0.0000324	0.0000324	0.0000323	0.0000323	0.0000322	0.0000322
CO ₂	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475
Transfer Station Equipment (pounds/ton MSW handled)															
NO _x	0.02085	0.01872	0.01659	0.01446	0.01233	0.01127	0.01021	0.00916	0.00810	0.00704	0.00670	0.00635	0.00601	0.00566	0.00532
SO _x	0.0009042	0.0008845	0.0008648	0.0008451	0.0008254	0.0008158	0.0008063	0.0007967	0.0007872	0.0007776	0.0007747	0.0007718	0.0007689	0.0007660	0.0007631
CO ₂	4.917	4.917	4.917	4.917	4.917	4.918	4.918	4.918	4.918	4.918	4.918	4.918	4.918	4.918	4.918
Transfer Station Electricity (pounds/kWh)															
NO _x	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125
SO _x	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904
CO ₂	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52
Current Conditions Scenario															
In-County LFs															
Direct-Haul															
NO _x	21.8	18.5	15.7	13.4	11.4	10.1	9.1	8.3	7.6	7.0	6.5	6.1			
SO _x	-	-	-	-	-	-	-	-	-	-	-	-			
CO ₂	8,158.9	7,993.4	7,830.0	7,669.1	7,510.8	7,390.5	7,269.9	7,149.5	7,029.1	6,908.8	6,788.3	6,668.0			
Transfer-Haul															
NO _x	3.8	3.2	2.8	2.4	2.0	1.8	1.7	1.5	1.4	1.3	1.2	1.2			
SO _x	-	-	-	-	-	-	-	-	-	-	-	-			
CO ₂	1,135.8	1,112.6	1,089.8	1,067.4	1,045.4	1,023.4	1,001.4	979.4	957.4	935.4	913.4	891.4			
Export to Out-of-County TSs															
Direct-Haul															
NO _x													9.3	9.0	8.7
SO _x													0.1	0.1	0.1
CO ₂													12,939.0	13,065.4	13,191.9
Transfer-Haul															
NO _x													10.1	9.8	9.5
SO _x													0.1	0.1	0.1
CO ₂													10,350.7	10,451.9	10,553.0
Total															
NO _x	25.6	21.7	18.5	15.8	13.4	11.9	10.8	9.8	9.0	8.3	7.7	7.3	19.4	18.8	18.2
SO _x	-	-	-	-	-	-	-	-	-	-	-	-	0.2	0.2	0.2
CO ₂	9,294.7	9,106.0	8,919.8	8,736.5	8,556.2	8,466.9	8,373.3	8,281.1	8,188.9	8,096.7	8,004.5	7,912.3	23,289.7	23,517.3	23,744.9
Lake TS Scenario															
In-County LFs + Lake TS															
Direct-Haul															
NO _x	19.8	16.8	14.2	12.0	10.3	9.1	8.2	7.5	6.8	6.3	5.9	5.5	5.3	5.1	5.0
SO _x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO ₂	7,395.1	7,229.5	7,066.2	6,905.3	6,746.7	6,588.4	6,429.9	6,271.5	6,113.1	5,954.7	5,796.3	5,637.9	5,479.5	5,321.1	5,162.7
Transfer-Haul															
NO _x	11.3	9.8	8.5	7.4	6.5	5.8	5.2	4.7	4.3	4.0	3.7	3.5	3.3	3.2	3.1
SO _x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO ₂	3,410.9	3,387.7	3,364.9	3,342.5	3,320.5	3,331.7	3,342.5	3,353.7	3,364.9	3,376.1	3,386.9	3,398.1	3,409.3	3,420.1	3,431.3
Transfer Station Operations															
NO _x	2.4	2.1	1.9	1.7	1.4	1.3	1.2	1.1	1.0	0.9	0.8	0.8	0.8	0.7	0.7
SO _x	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
CO ₂	662.3	662.3	662.3	662.3	662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4
Lake TS + Export to Out-of-County TSs															
Direct-Haul															
NO _x															
SO _x															
CO ₂															
Transfer-Haul															
NO _x															
SO _x															
CO ₂															
Transfer Station Operations															
NO _x															
SO _x															
CO ₂															
Total															
NO _x	33.5	28.7	24.6	21.1	18.2	16.2	14.6	13.3	12.1	11.2	10.4	9.8	9.4	9.0	8.8
SO _x	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
CO ₂	11,468.3	11,279.5	11,093.4	10,910.1	10,729.6	10,549.1	10,368.6	10,188.1	10,007.6	9,827.1	9,646.6	9,466.1	9,285.6	9,105.1	8,924.6

Table B-6: Emissions Summary (tons)

Annual kWh	177,600															
Year	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Total
Emission Rates																
Direct-Haul (pounds/mile)																
NO _x	0.00361	0.00353	0.00347	0.00343	0.0034	0.00338	0.00335	0.00335	0.00334	0.00333	0.00333	0.00333	0.00333	0.00333	0.00333	
SO _x	0.0000275	0.0000271	0.0000268	0.0000272	0.0000268	0.0000264	0.0000275	0.0000278	0.0000281	0.0000277	0.0000273	0.0000276	0.0000272	0.0000281	0.0000277	
CO ₂	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	5.594	
Transfer-Haul (pounds/mile)																
NO _x	0.00393	0.00385	0.00378	0.00374	0.0037	0.00368	0.00365	0.00364	0.00363	0.00363	0.00363	0.00363	0.00362	0.00362	0.00362	
SO _x	0.0000322	0.0000322	0.0000322	0.0000322	0.0000321	0.0000321	0.0000321	0.0000321	0.0000321	0.0000321	0.0000321	0.0000321	0.0000321	0.0000321	0.0000321	
CO ₂	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	4.475	
Transfer Station Equipment (pounds/ton MSW handled)																
NO _x	0.00523	0.00514	0.00504	0.00495	0.00486	0.00483	0.00481	0.00478	0.00476	0.00473	0.00472	0.00472	0.00471	0.00471	0.00470	
SO _x	0.0007623	0.0007615	0.0007608	0.0007600	0.0007592	0.0007589	0.0007586	0.0007584	0.0007581	0.0007578	0.0007578	0.0007578	0.0007577	0.0007577	0.0007577	
CO ₂	4.918	4.918	4.918	4.918	4.918	4.918	4.918	4.918	4.918	4.918	4.918	4.918	4.918	4.918	4.918	
Transfer Station Electricity (pounds/kWh)																
NO _x	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	0.0013125	
SO _x	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	0.005904	
CO ₂	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	
Current Conditions Scenario																
In-County LFs																
Direct-Haul																
NO _x																135.5
SO _x																-
CO ₂																93,966.1
Transfer-Haul																
NO _x																24.3
SO _x																-
CO ₂																13,078.8
Export to Out-of-County TSs																
Direct-Haul																
NO _x	8.6	8.5	8.4	8.4	8.4	8.4	8.4	8.5	8.6	8.6	8.7	8.8	8.8	8.9	9.0	156.0
SO _x	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.8
CO ₂	13,318.3	13,444.8	13,571.2	13,697.7	13,824.0	13,950.5	14,076.9	14,203.4	14,329.8	14,456.1	14,582.6	14,709.0	14,835.5	14,961.9	15,088.4	252,246.4
Transfer-Haul																
NO _x	9.4	9.3	9.2	9.2	9.1	9.2	9.2	9.2	9.3	9.4	9.5	9.5	9.6	9.7	9.8	170.0
SO _x	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.8
CO ₂	10,654.2	10,755.4	10,856.5	10,957.7	11,058.7	11,159.9	11,261.0	11,362.2	11,463.3	11,564.4	11,665.5	11,766.7	11,867.8	11,969.0	12,070.2	201,788.1
Total																
NO _x	18.0	17.8	17.6	17.6	17.5	17.6	17.6	17.7	17.9	18.0	18.2	18.3	18.4	18.6	18.8	485.8
SO _x	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	3.6
CO ₂	23,972.5	24,200.2	24,427.7	24,655.4	24,882.7	25,110.4	25,337.9	25,565.6	25,793.1	26,020.5	26,248.1	26,475.7	26,703.3	26,930.9	27,158.6	561,079.4
Lake TS Scenario																
In-County LFs + Lake TS																
Direct-Haul																
NO _x	4.9															142.7
SO _x	-															-
CO ₂	7,622.5															114,811.7
Transfer-Haul																
NO _x	3.0															87.3
SO _x	-															-
CO ₂	3,442.5															54,083.6
Transfer Station Operations																
NO _x	0.7															19.5
SO _x	0.6															9.6
CO ₂	662.4															10,598.0
Lake TS + Export to Out-of-County TSs																
Direct-Haul																
NO _x		6.8	6.8	6.8	6.8	6.8	6.8	6.9	7.0	7.0	7.1	7.2	7.2	7.3	7.4	97.9
SO _x		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.4
CO ₂		10,785.0	10,911.4	11,037.9	11,164.2	11,290.6	11,417.1	11,543.5	11,670.0	11,796.3	11,922.8	12,049.2	12,175.7	12,302.1	12,428.6	162,494.4
Transfer-Haul																
NO _x		7.2	7.1	7.1	7.1	7.1	7.1	7.2	7.2	7.3	7.4	7.5	7.5	7.6	7.6	102.0
SO _x		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.4
CO ₂		8,336.4	8,421.7	8,507.1	8,592.4	8,677.4	8,762.7	8,848.1	8,933.0	9,018.4	9,103.7	9,189.1	9,274.0	9,359.4	9,444.7	124,468.1
Transfer Station Operations																
NO _x		0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	8.6
SO _x		0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	8.4
CO ₂		662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4	9,273.6
Total																
NO _x	8.6	14.7	14.6	14.5	14.5	14.5	14.5	14.7	14.8	14.9	15.1	15.3	15.3	15.5	15.6	458.0
SO _x	0.6	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	20.8
CO ₂	11,727.4	19,783.8	19,995.5	20,207.4	20,419.0	20,630.4	20,842.2	21,054.0	21,265.4	21,477.1	21,688.9	21,900.7	22,112.1	22,323.9	22,535.7	475,729.4

Table B-6: Emissions Summary (tons)

Annual kWh	177,600														
Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Current Conditions Scenario															
In-County LFs															
Direct-Haul															
NO _x	22	19	16	13	11	10	9	8	8	7	7	6			
SO _x	-	-	-	-	-	-	-	-	-	-	-	-			
CO ₂	8,159	7,993	7,830	7,669	7,511	7,590	7,670	7,750	7,829	7,909	7,988	8,068			
Transfer-Haul															
NO _x	4	3	3	2	2	2	2	2	1	1	1	1			
SO _x	-	-	-	-	-	-	-	-	-	-	-	-			
CO ₂	1,136	1,113	1,090	1,067	1,045	1,057	1,067	1,079	1,090	1,101	1,112	1,123			
Export to Out-of-County TSs															
Direct-Haul															
NO _x													9.3	9.0	8.7
SO _x													0.1	0.1	0.1
CO ₂													12,939.0	13,065.4	13,191.9
Transfer-Haul															
NO _x													10.1	9.8	9.5
SO _x													0.1	0.1	0.1
CO ₂													10,350.7	10,451.9	10,553.0
Total															
NO _x	25.6	21.7	18.5	15.8	13.4	11.9	10.8	9.8	9.0	8.3	7.7	7.3	19.4	18.8	18.2
SO _x	-	-	-	-	-	-	-	-	-	-	-	-	0.2	0.2	0.2
CO ₂	9,294.7	9,106.0	8,919.8	8,736.5	8,556.2	8,646.9	8,737.3	8,828.1	8,918.9	9,009.4	9,100.1	9,191.0	23,289.7	23,517.3	23,744.9
Lake TS Scenario															
In-County LFs + Lake TS															
Direct-Haul															
NO _x	19.8	16.8	14.2	12.0	10.3	9.1	8.2	7.5	6.8	6.3	5.9	5.5	5.3	5.1	5.0
SO _x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO ₂	7,395.1	7,229.5	7,066.2	6,905.3	6,746.7	6,826.4	6,906.0	6,985.7	7,065.2	7,144.8	7,224.4	7,304.2	7,383.6	7,463.3	7,542.8
Transfer-Haul															
NO _x	11.3	9.8	8.5	7.4	6.5	5.8	5.2	4.7	4.3	4.0	3.7	3.5	3.3	3.2	3.1
SO _x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO ₂	3,410.9	3,387.7	3,364.9	3,342.5	3,320.5	3,331.7	3,342.5	3,353.7	3,364.9	3,376.1	3,386.9	3,398.1	3,409.3	3,420.1	3,431.3
Transfer Station Operations															
NO _x	2.4	2.1	1.9	1.7	1.4	1.3	1.2	1.1	1.0	0.9	0.8	0.8	0.8	0.7	0.7
SO _x	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
CO ₂	662.3	662.3	662.3	662.3	662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4	662.4
Lake TS + Export to Out-of-County TSs															
Direct-Haul															
NO _x															
SO _x															
CO ₂															
Transfer-Haul															
NO _x															
SO _x															
CO ₂															
Transfer Station Operations															
NO _x															
SO _x															
CO ₂															
Total															
NO _x	33.5	28.7	24.6	21.1	18.2	16.2	14.6	13.3	12.1	11.2	10.4	9.8	9.4	9.0	8.8
SO _x	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
CO ₂	11,468.3	11,279.5	11,093.4	10,910.1	10,729.6	10,820.5	10,910.9	11,001.8	11,092.5	11,183.3	11,273.7	11,364.7	11,455.3	11,545.8	11,636.5

Table B-6: Emissions Summary (tons)

Annual kWh	177,600					
Year	16 2031	17 2032	18 2033	19 2034	20 2035	Total
Current Conditions Scenario						
In-County LFs						
Direct-Haul						
NO _x						135.5
SO _x						-
CO ₂						93,966.1
Transfer-Haul						
NO _x						24.3
SO _x						-
CO ₂						13,078.8
Export to Out-of-County TSs						
Direct-Haul						
NO _x	8.6	8.5	8.4	8.4	8.4	69.3
SO _x	0.1	0.1	0.1	0.1	0.1	0.8
CO ₂	13,318.3	13,444.8	13,571.2	13,697.7	13,824.0	107,052.3
Transfer-Haul						
NO _x	9.4	9.3	9.2	9.2	9.1	75.6
SO _x	0.1	0.1	0.1	0.1	0.1	0.8
CO ₂	10,654.2	10,755.4	10,856.5	10,957.7	11,058.7	85,638.1
Total						
NO _x	18.0	17.8	17.6	17.6	17.5	304.7
SO _x	0.2	0.2	0.2	0.2	0.2	1.6
CO ₂	23,972.5	24,200.2	24,427.7	24,655.4	24,882.7	299,735.3
Lake TS Scenario						
In-County LFs + Lake TS						
Direct-Haul						
NO _x	4.9					142.7
SO _x	-					-
CO ₂	7,622.5					114,811.7
Transfer-Haul						
NO _x	3.0					87.3
SO _x	-					-
CO ₂	3,442.5					54,083.6
Transfer Station Operations						
NO _x	0.7					19.5
SO _x	0.6					9.6
CO ₂	662.4					10,598.0
Lake TS + Export to Out-of-County TSs						
Direct-Haul						
NO _x		6.8	6.8	6.8	6.8	27.2
SO _x		0.1	0.1	0.1	0.1	0.4
CO ₂		10,785.0	10,911.4	11,037.9	11,164.2	43,898.5
Transfer-Haul						
NO _x		7.2	7.1	7.1	7.1	28.5
SO _x		0.1	0.1	0.1	0.1	0.4
CO ₂		8,336.4	8,421.7	8,507.1	8,592.4	33,857.6
Transfer Station Operations						
NO _x		0.7	0.7	0.6	0.6	2.6
SO _x		0.6	0.6	0.6	0.6	2.4
CO ₂		662.4	662.4	662.4	662.4	2,649.6
Total						
NO _x	8.6	14.7	14.6	14.5	14.5	307.8
SO _x	0.6	0.8	0.8	0.8	0.8	12.8
CO ₂	11,727.4	19,783.8	19,995.5	20,207.4	20,419.0	259,899.0

Table B-7: Annual Energy Consumption

Fuel Efficiency:
 Direct-haul (miles per gallon) 4
 Transfer-haul (miles per gallon) 5
 Transfer station equipment (gallons per day) 114.4

Year	1 2016	2 2017	3 2018	4 2019	5 2020	6 2021	7 2022	8 2023	9 2024	10 2025	11 2026	12 2027	13 2028	14 2029	15 2030
Current Conditions Scenario															
In-County LFs															
Direct-Haul	729,259	714,464	699,856	685,477	671,326	678,437	685,549	692,659	699,779	706,904	714,002	721,127			
Transfer-Haul	101,523	99,452	97,415	95,413	93,446	94,447	95,413	96,414	97,415	98,382	99,383	100,384			
Subtotal	830,782	813,916	797,271	780,890	764,772	772,884	780,962	789,073	797,194	805,286	813,385	821,511			
Export to Out-of-County TSs															
Direct-Haul													1,156,506	1,167,808	1,179,111
Transfer-Haul													779,738	787,367	794,996
Subtotal													1,936,244	1,955,175	1,974,107
Total	830,782	813,916	797,271	780,890	764,772	772,884	780,962	789,073	797,194	805,286	813,385	821,511	1,936,244	1,955,175	1,974,107
Lake TS Scenario															
In-County LFs + Lake TS															
Direct-Haul	660,987	646,179	631,585	617,206	603,033	610,152	617,268	624,388	631,495	638,611	645,731	652,856	659,953	667,079	674,189
Transfer-Haul	304,882	302,811	300,774	298,772	296,805	297,806	298,772	299,773	300,774	301,775	302,742	303,743	304,744	305,711	306,712
Subtotal	965,869	948,990	932,359	915,978	899,838	907,958	916,040	924,161	932,269	940,386	948,473	956,599	964,697	972,790	980,901
Lake TS + Export to Out-of-County TSs															
Direct-Haul															
Transfer-Haul															
Subtotal															
Transfer Station Operations	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718
Total	998,587	981,708	965,077	948,696	932,556	940,676	948,758	956,879	964,987	973,104	981,191	989,317	997,415	1,005,508	1,013,619
Current Conditions Scenario															
In-County LFs															
Direct-Haul	729,259	714,464	699,856	685,477	671,326	678,437	685,549	692,659	699,779	706,904	714,002	721,127			
Transfer-Haul	101,523	99,452	97,415	95,413	93,446	94,447	95,413	96,414	97,415	98,382	99,383	100,384			
Subtotal	830,782	813,916	797,271	780,890	764,772	772,884	780,962	789,073	797,194	805,286	813,385	821,511			
Export to Out-of-County TSs															
Direct-Haul													1,156,506	1,167,808	1,179,111
Transfer-Haul													779,738	787,367	794,996
Subtotal													1,936,244	1,955,175	1,974,107
Total	830,782	813,916	797,271	780,890	764,772	772,884	780,962	789,073	797,194	805,286	813,385	821,511	1,936,244	1,955,175	1,974,107
Lake TS Scenario															
In-County LFs + Lake TS															
Direct-Haul	660,987	646,179	631,585	617,206	603,033	610,152	617,268	624,388	631,495	638,611	645,731	652,856	659,953	667,079	674,189
Transfer-Haul	304,882	302,811	300,774	298,772	296,805	297,806	298,772	299,773	300,774	301,775	302,742	303,743	304,744	305,711	306,712
Subtotal	965,869	948,990	932,359	915,978	899,838	907,958	916,040	924,161	932,269	940,386	948,473	956,599	964,697	972,790	980,901
Lake TS + Export to Out-of-County TSs															
Direct-Haul															
Transfer-Haul															
Subtotal															
Transfer Station Operations	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718
Total	998,587	981,708	965,077	948,696	932,556	940,676	948,758	956,879	964,987	973,104	981,191	989,317	997,415	1,005,508	1,013,619

Table B-7: Annual Energy Consumption

Fuel Efficiency:																
Direct-haul (miles per gallon)	4															
Transfer-haul (miles per gallon)	5															
Transfer station equipment (gallons per day)	114.4															
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Year	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Total
Current Conditions Scenario																
In-County LFs																
Direct-Haul																8,398,839
Transfer-Haul																1,169,087
Subtotal																9,567,926
Export to Out-of-County TSs																
Direct-Haul	1,190,413	1,201,715	1,213,018	1,224,320	1,235,610	1,246,912	1,258,215	1,269,517	1,280,819	1,292,109	1,303,411	1,314,714	1,326,016	1,337,319	1,348,621	22,546,154
Transfer-Haul	802,590	810,219	817,848	825,442	833,071	840,700	848,329	855,923	863,552	871,181	878,776	886,405	894,033	901,628	909,257	15,201,055
Subtotal	1,993,003	2,011,934	2,030,866	2,049,762	2,068,681	2,087,612	2,106,544	2,125,440	2,144,371	2,163,290	2,182,187	2,201,119	2,220,049	2,238,947	2,257,878	37,747,209
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Total	1,993,003	2,011,934	2,030,866	2,049,762	2,068,681	2,087,612	2,106,544	2,125,440	2,144,371	2,163,290	2,182,187	2,201,119	2,220,049	2,238,947	2,257,878	47,315,135
Lake TS Scenario																
In-County LFs + Lake TS																
Direct-Haul	681,309															10,262,021
Transfer-Haul	307,713															4,834,309
Subtotal	989,022															15,096,330
Lake TS + Export to Out-of-County TSs																
Direct-Haul		963,978	975,280	986,583	997,872	1,009,175	1,020,477	1,031,779	1,043,082	1,054,371	1,065,674	1,076,976	1,088,279	1,099,581	1,110,883	14,523,990
Transfer-Haul		745,150	752,779	760,408	768,037	775,632	783,260	790,889	798,484	806,113	813,742	821,371	828,965	836,594	844,223	11,125,647
Subtotal		1,709,128	1,728,059	1,746,991	1,765,909	1,784,807	1,803,737	1,822,668	1,841,566	1,860,484	1,879,416	1,898,347	1,917,244	1,936,175	1,955,106	25,649,637
Transfer Station Operations	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	32,718	981,540
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Total	1,021,740	1,741,846	1,760,777	1,779,709	1,798,627	1,817,525	1,836,455	1,855,386	1,874,284	1,893,202	1,912,134	1,931,065	1,949,962	1,968,893	1,987,824	41,727,507
	16	17	18	19	20											
Year	2031	2032	2033	2034	2035	Total										
Current Conditions Scenario																
In-County LFs																
Direct-Haul						8,398,839										
Transfer-Haul						1,169,087										
Subtotal						9,567,926										
Export to Out-of-County TSs																
Direct-Haul	1,190,413	1,201,715	1,213,018	1,224,320	1,235,610	9,568,501										
Transfer-Haul	802,590	810,219	817,848	825,442	833,071	6,451,271										
Subtotal	1,993,003	2,011,934	2,030,866	2,049,762	2,068,681	16,019,772										
	=====	=====	=====	=====	=====	=====										
Total	1,993,003	2,011,934	2,030,866	2,049,762	2,068,681	25,587,698										
Lake TS Scenario																
In-County LFs + Lake TS																
Direct-Haul	681,309					10,262,021										
Transfer-Haul	307,713					4,834,309										
Subtotal	989,022					15,096,330										
Lake TS + Export to Out-of-County TSs																
Direct-Haul		963,978	975,280	986,583	997,872	3,923,713										
Transfer-Haul		745,150	752,779	760,408	768,037	3,026,374										
Subtotal		1,709,128	1,728,059	1,746,991	1,765,909	6,950,087										
Transfer Station Operations	32,718	32,718	32,718	32,718	32,718	654,360										
	=====	=====	=====	=====	=====	=====										
Total	1,021,740	1,741,846	1,760,777	1,779,709	1,798,627	22,700,777										

Table B-8: Summary

	<u>NO_x (tons)</u>	<u>SO_x (tons)</u>	<u>CO₂ (tons)</u>	<u>Energy (gallons)</u>
20-Year Life-Cycle				
Current Conditions	304.7	1.6	299,735.3	25,587,698
Lake Transfer Station Conditions	307.8	12.8	259,899.0	22,700,777
Change	3.1	11.2	(39,836.3)	(2,886,921)
30-Year Life-Cycle				
Current Conditions	485.8	3.6	561,079.4	47,315,135
Lake Transfer Station Conditions	458.0	20.8	475,729.4	41,727,507
Change	(27.8)	17.2	(85,350.0)	(5,587,628)

Attachment C

Summary of Model Inputs

On-Road Vehicle Emissions

On-road vehicle emissions of NO_x and SO_x from direct-haul and transfer-haul vehicles were calculated using the most recent release of USEPA's Mobile Vehicle Emission Simulator (MOVES) (MOVES2010b) with the following input parameters:

- Scale: Domain/Scale = National; Calculation Type = Inventory
- Time Spans: Time Aggregation Level = Year; Years = 2016-2045; Months = All; Days = All; Hours = All
- Geographic Bounds: Region = County; States = Illinois; Counties = Lake County
- Vehicles/Equipment: Fuels = Diesel Fuel; Source Use Types = Combination Short-haul Truck, Refuse Truck
- Road Type: Selected Road Types = All
- Pollutants and Processes: Oxides of Nitrogen (NO_x), Sulfur Dioxide (SO₂), Total Energy Consumption (required for SO₂ calculation)
- General Output: Mass Units = pounds; Distance Units = miles; Activity = Distance Traveled, Population
- Output Emissions Detail: For All Vehicle/Equipment Categories = Fuel Type; On Road = Road Type, Source Use Type

Outputs for NO_x and SO_x were totaled for each year of the model run over all road types and divided by total distance traveled to calculate annual emission rates on a pounds per mile basis. These rates were then applied to annual estimates of vehicle miles traveled (VMT) for direct-haul and transfer-haul vehicles to reflect changes in emission standards over time.

The MOVES model was used to calculate emission rates because it is the currently-prescribed and accepted model within the US (excluding California) for developing transportation-related emission inventories. In assessing the applicability of this model to the current project, Shaw also reviewed emission factors utilized in the model developed by the California Air Resources Board to calculate emissions under California's more stringent emission criteria. This model, EMFAC2011, predicts emission rates that are higher than the rates predicted by MOVES and used in this analysis, as summarized in Table C-1 below. The rates calculated by both MOVES and EMFAC2011 are significantly lower than the rates incorporated into the MSW Decision Support Tool (MSW-DST) specified in the Lake County Plan for use in conducting the life cycle assessment.



**TABLE C-1. SUMMARY OF EMISSION FACTORS (2016 AND 2035)
(POUNDS PER VEHICLE MILE TRAVELED)**

	MOVES	EMFAC2011	MSW-DST
2016 Emission Factors			
Direct-Haul Vehicle			
NO _x	0.014978	0.028029	0.075
SO _x	0.0000292	0.0000403	0
Transfer-Haul Vehicle			
NO _x	0.01488	0.017269	0.042
SO _x	0.0000331	0.0000369	0.00724
2035 Emission Factors			
Direct-Haul Vehicle			
NO _x	0.0034	0.00693	0.075
SO _x	0.0000268	0.0000395	0
Transfer-Haul Vehicle			
NO _x	0.0037	0.00494	0.042
SO _x	0.0000321	0.0000365	0.00724
Sources: 1. EMFAC2011 emission factors: EMFAC Emission Rates Database, accessed at http://www.arb.ca.gov/jpub/webapp/EMFAC2011WebApp/rateSelectionPage_1.jsp . Rates summarized for Statewide conditions, calendar years 2016 and 2035 (the latest year for which modeling is available), and annual average season. Applicable 2011 vehicle categories are T7 SWCV (direct-haul vehicle) and T7 Tractor (transfer-haul vehicle). 2. MSW-DST emission factors: North Carolina State University and Research Triangle Institute, Default Data and Data Input Requirements for the Municipal Solid Waste Management Decision Support Tool, December 2000. Direct-haul vehicle emission factors from Table 3.6, page 3-29, for mixed waste refuse collection. Transfer-haul vehicle emission factors from Table 5.2, page 5-5, for heavy-duty diesel vehicles assuming a fuel efficiency of 5 miles per gallon.			

On-road vehicle emissions of CO₂ from direct-haul and transfer-haul vehicles were calculated based on CO₂ emission factors reported by The Climate Registry in its General Reporting Protocol, Version 1.1, dated May 2008. Table 13.1 of the General Reporting Protocol cites an emission factor of 10.15 kg/gallon for CO₂ for diesel fuels. This factor was converted to a CO₂ emission factor in pounds per vehicle mile using an assumed fuel economy of 4 miles per gallon for direct-haul vehicles and 5 miles per gallon for transfer-haul vehicles.



Transfer Station Mobile Equipment Emissions

Emissions from mobile equipment to be used at the transfer station were calculated using USEPA's NONROAD Emissions Model. Emission rates were determined from the model using the following input parameters:

- Period inputs: Episode = 2016, 2020, 2025, 2030, 2035, 2040, and 2045 (all other years interpolated); Period = Annual; Type = Period total
- Region inputs: County = Lake County, IL
- Sources: Diesel, Construction and Mining Equipment, Excavators and Rubber Tire Loaders

Transfer Station Electricity Usage

Emissions resulting from the production of electricity consumed by the transfer station were calculated using eGRID factors for the RFC West region reported for year 2009 by USEPA (http://www.epa.gov/cleanenergy/documents/eGRID2012V1_0_year09_Summary_Tables.pdf). Year 2009 data is the most recent data available.

