

**CRITERION 2:
DESIGN, LOCATION STANDARDS, AND OPERATING PLAN**

The Illinois Environmental Protection Act, at 415 ILCS 5/39.2 (a)(ii), requires that an applicant for a transfer station siting demonstrate that the facility is so designed, located, and proposed to be operated so that the public health, safety, and welfare will be protected. This report demonstrates that the proposed Lakeshore Recycling Systems, LLC West DuPage Recycling and Transfer Station is designed, located, and proposed to be operated so that public health, safety, and welfare will be protected.

Prepared for:

**LAKESHORE RECYCLING SYSTEMS, LLC
WEST DUPAGE RECYCLING AND TRANSFER STATION
1655 POWIS ROAD
WEST CHICAGO, ILLINOIS
DUPAGE COUNTY**

Prepared by:

**CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
NAPERVILLE, ILLINOIS**

CEC Project 163-899

SEPTEMBER 2020

- Receipt, solidification and transfer of hydro excavation wastes;
- Receipt and transfer of single-stream recyclables (referred to as “SSR” or more generally as “recyclables”);
- Drop-off area for West Chicago residents’ electrical/electronic devices; and
- Drop-off area for recyclables generated by residents and small businesses.

Loads of MSW from collection vehicles will be consolidated into larger loads for transport to an area landfill for disposal. Loads of hydro excavation wastes will be solidified and then transported to an area landfill for disposal. Electronic waste from West Chicago citizens will be consolidated and transported to a recovery facility. Loads of recyclables from collection vehicles (and recyclables from residents) will be consolidated into larger loads for transport to a material recovery facility (MRF), such as LRS’s MRF in Forest View, for re-use as a commodity. The proposed operations at the West DuPage RTS will allow for more efficient processing and/or transportation of these materials to a MRF or disposal facility (landfill). In addition, the expanded operations at the facility will allow for more improved recycling of the C&D.

West DuPage RTS is a unique facility due its desirable location, relatively large size, and diversity of operations, and will be a premier waste management and recycling facility in the State of Illinois.

Subject to Illinois Environmental Protection Agency (IEPA) permitting, West DuPage RTS is anticipated to accept up to 2,525 tons per day of which up to 900 tons per day may be MSW, up to 300 tons per day may be hydro excavation wastes, up to 1,000 tons per day may be C&D and up to 325 tons per day may be SSR.

The C&D operations, MSW/ SSR operations and hydro excavation waste operations are separate business lines so the probability of the Site receiving peak amounts of waste from these three different business lines on the same day is highly unlikely. Regardless, the Site has been designed to manage the peak amounts of each material type on the same day.

species from utilizing it, such as Canada geese. Trained facility staff will visually inspect the pond for birds that may be attempting to hide.

- Remove cottonwood tree - A large cottonwood tree is present to the east of the east pond. The tree is being used as a roosting location for a few great egrets (*Ardea alba*). While some of the trees on the eastern property edge will serve as a visual blocker, this large tree will be removed.
- Install grid-wire system - A grid-wire system will be installed on the east and west ponds to keep most waterfowl and wading birds from utilizing the pond. To keep larger birds from using the water, a checkerboard pattern is recommended. This involves running cables from one side to another in one direction (north to south) and then running a second set of wires perpendicular.

2.4.18 SITE THROUGHPUT CAPACITY

Subject to Illinois Environmental Protection Agency (IEPA) permitting, West DuPage RTS is anticipated to accept up to 2,525 tons per day of which up to 900 tons per day may be MSW, up to 300 tons per day may be hydro excavation wastes, up to 1,000 tons per day may be C&D and up to 325 tons per day may be SSR. The maximum volumes are based on the following.

- MSW – LRS currently hauls approximately 250 tpd of MSW from the Service Area with trucks based out of the West DuPage RTS. The 900 tpd limit would accommodate the existing volume LRS hauls, a similar volume from other privately owned companies, reasonable growth and a contingency for a peak day.
- C&D – The Site is currently permitted to accept up to 1,250 tpd. LRS currently accepts an average of approximately 400 tpd with historic peaks of approximately 850 tpd. These volumes are not anticipated to change if the acceptance of MSW is approved. The 1,000 tpd limit (which is reduced from the current limit of 1,250 tpd) would accommodate the existing volume LRS hauls and a contingency for a peak day.
- Hydro Excavation Waste – LRS currently accepts between 100 to 400 tpd at its Heartland Recycling facility in Forest View. Approximately half of this volume is anticipated to be diverted to the West DuPage RTS if approved because customers have indicated that this approximate percentage of hydro excavation waste is generated closer to West Chicago than Forest View (and they would want to take advantage of the reduced transportation costs). The proposed limit of 300 tpd would accommodate the diversion of approximately 100 to 150 tpd, reasonable growth and a contingency for a peak day.
- SSR - LRS currently hauls approximately 90 tpd of SSR from the Service Area with trucks based out of the West DuPage RTS. The 325 tpd limit would accommodate the existing volume LRS hauls, a similar volume from other privately owned companies, reasonable growth and a contingency for a peak day.

2.4.19.4 C&D Transfer and Processing Rate

The C&D transfer and processing procedures vary by the type of material accepted. Source separated materials (e.g., shingles, broken concrete) are not processed through the screener and sorting line. These types of loads are much heavier than mixed C&D loads so typically comprise a significant percentage of the general C&D accepted on a weight basis.

Mixed loads of C&D are processed through the screener and sorting line to remove as much recyclable material as practical. Materials separated by the screener are transported via conveyor to the cover building. Materials separated by the sorting line are dropped into storage bunkers. Non-recyclable materials from the sorting line proceed through the sorting line and are deposited in a separate storage bunker for subsequent transfer through the MSW and SSR transfer building loading pit.

Based on historical operations, the site can manage (separate, screen, sort, transport and/or distribute into storage bays for subsequent recycling) approximately 40 tons per hour. The load out of recyclable material is not required every day so is not a limiting factor in the throughput evaluation. The estimated maximum amount of non-recyclable material required to be loaded out via the MSW and SSR transfer building loading pit is 250 tons per day (25% of 1,000 tons per day of C&D). The load out of the non-recyclable material is included in the evaluation of the load out of the MSW. The portion of non-recyclables from the sorting line would be consistently brought to the MSW and SSR Transfer Building throughout the day. The other portion of non-recyclables (e.g., bulky items) are separated from loads prior to processing and can be moved to the MSW and SSR Transfer Building during the operating day or at the end of the operating day. During a maximum MSW and SSR acceptance day, the non-recyclable C&D would be staged in the opening between the buildings and loaded out from the MSW and SSR Transfer Building at the end of the day.

The storage capacity of the C&D transfer/screening building is at least 250 tons (100 feet long by 35 feet wide by 12 feet high by 0.8 slope factor) so provides ample storage capacity to accommodate processing and stage non-recyclables.

2.4.19.5 Tipping Floor Size and Stockpiling Capacity

The tipping floor for the MSW and SSR transfer building is approximately 17,100 square feet (90 feet by 190 feet). Waste and SSR will be unloaded in separate locations, which may vary based on actual daily acceptance volumes of each. Waste and SSR cannot occupy the entire tipping floor as adequate maneuvering space is needed for the loader and the disposal vehicles. During a

complete their second routes and unload at the West DuPage RTS at the end of the operating day.

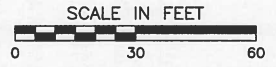
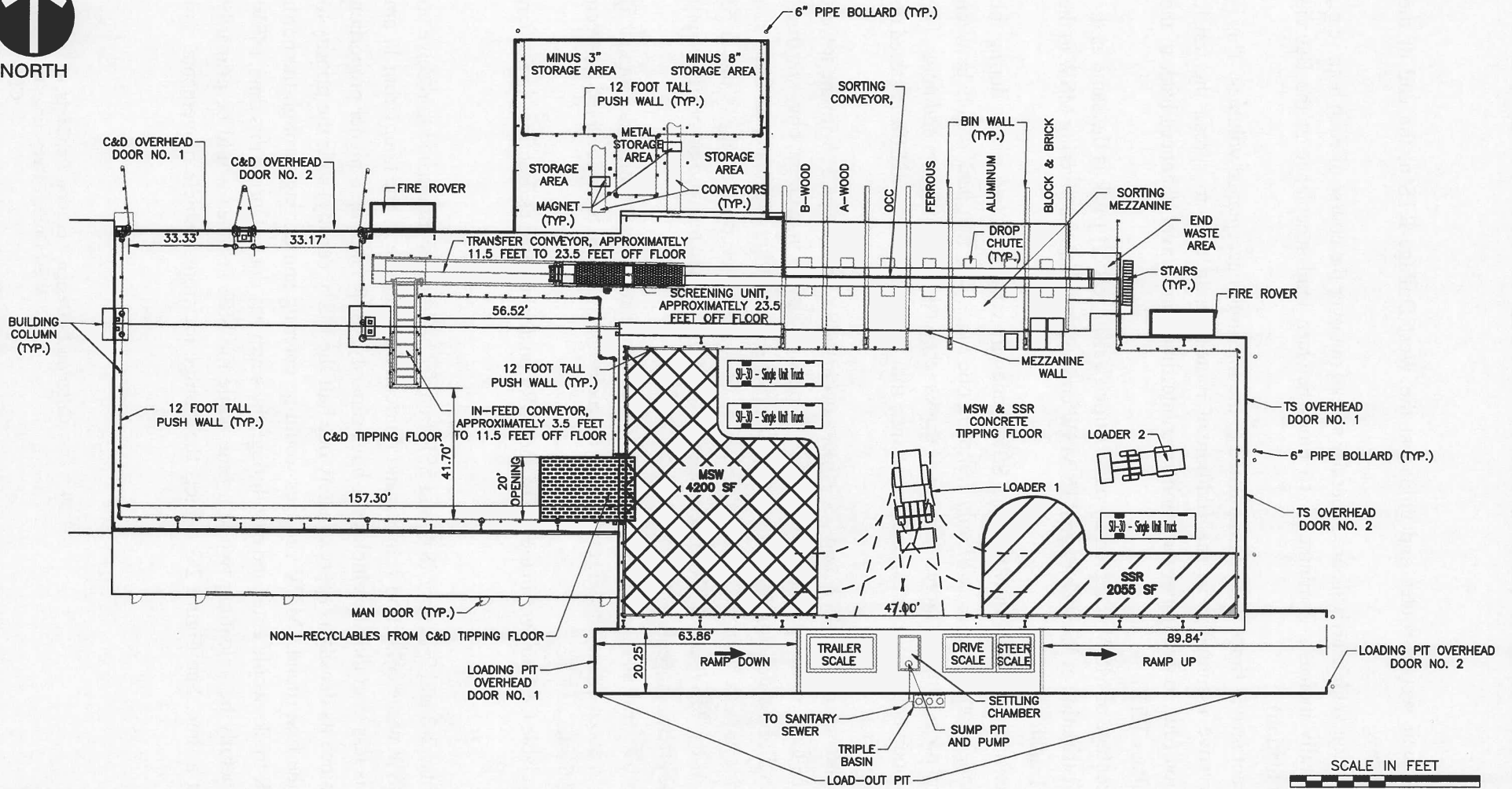
- The collection vehicle arrivals are generally spread out over the course of each hour (e.g., data generally indicates 2 minute to 10 times between load acceptance at the Batavia Transfer Station).
- The current arrival times were extrapolated to the maximum acceptance volumes. This is a conservative assumption as the addition of routes would tend to spread the traffic distribution (due to additional variations in route times and travel distances back to the West DuPage RTS).
- The percentage of MSW accepted by packer truck versus roll off truck is the same as the current distribution of West DuPage RTS MSW collection vehicles delivering MSW to the Batavia Transfer Station.
- Each packer truck (for both MSW and SSR) generally completes two routes during the day, although some vehicles will only complete one route. The first peak occurs between 10 am and noon, with the largest amount of trucks received between 11 am and noon. The 11 am to noon hour thus corresponds to the time that the most MSW and SSR is stored on the tipping floor.
- A lull in the number of MSW and SSR trucks occurs after the first peak, with the lowest acceptance hour of the operating day between 1 pm and 2 pm. On average, only one truck at a time will be unloading in the building during this time period (versus up to three at a time during a peak hour). This time period of low waste acceptance allows the large majority of the MSW and SSR to be loaded out and the storage areas to be nearly empty before the afternoon peak.
- The afternoon peak starts after 3 pm (when the second round for each vehicle is completed) and goes to about 6 pm. The largest number of trucks is anticipated to be accepted between 5 pm and 6 pm.
- Non-recyclable C&D arrives in the MSW and SSR transfer building as described in Section 2.4.19.7.

As shown in Tables 2-2 and 2-3, the MSW and SSR transfer building is anticipated to receive up to twenty-one MSW waste collection vehicles and fourteen SSR vehicle in one hour (from 11 am to noon), which is less than the 36 vehicles per hour capacity. SSR takes up a higher proportion of the tip floor (since its density is approximately one half the MSW density) so is the priority to load out during the first round. MSW vehicles would be entering and exiting through the north bay door and SSR trucks would enter and exit through the south bay door. During this time, MSW trucks would generally be unloading two at a time while the SSR vehicles would be primarily unloading one at a time. See Figure 2.3 depicts the storage locations, vehicle movements, and



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A:\2016\163-8991-CAD\DWG\CAD-Civil\163-899-CV05-Local Siting Application\163-899-CV05-Waste Storage Plan.dwg[2-3] LS:[9/15/2020 - mschlusser] - LP: 9/15/2020 7:26 AM



REFERENCE

1. DRAWING BASE IS 8/9/2019 "BARRIER WALL & BOLLARD PLAN" BY SANDMAN, INC.
2. I-BEAMS IN LOADING PIT AREA WERE REMOVED FROM THIS DRAWING FOR CLARITY PURPOSES. REFER TO SHEET A1B FOR AN ARCHITECTURAL SECTION VIEW OF THE LOADING PIT AREA.
3. LOADER 1 SIZE AND DIMENSIONS ARE BASED ON A CAT 980K. OVERALL LENGTH OF LOADER 1 IS 31.10 FT. WITH AN OVERALL WIDTH OF 10.60 FT.
4. LOADER 2 SIZE AND DIMENSIONS ARE BASED ON A CAT 950M. OVERALL LENGTH OF LOADER 2 IS 26.90 FT. WITH AN OVERALL WIDTH OF 9.25 FT.

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WEST DUPAGE RECYCLING
 AND TRANSFER STATION
 1655 POWIS ROAD WEST CHICAGO, ILLINOIS

MSW AND SSR STORAGE PLAN
 PEAK HOUR AT MAXIMUM ACCEPTANCE RATES

DRAWN BY:	MMK	CHECKED BY:	DRAFT	APPROVED BY:	DRAFT	FIGURE NO.:
DATE:	09/09/2020	DWG SCALE:	1"=30'	PROJECT NO.:	163-899.0005	2-3

**Table 2-3
West DuPage Recycling and Transfer Station
Projected Material Processing and Traffic Volume
900 Tons Per Day Municipal Solid Waste**

Time (Hour Beginning)	LRS Collection Vehicle Distribution		Municipal Solid Waste Delivered									Outgoing MSW			Municipal Solid Waste Transferred						Required Tip Floor Storage	
	Hour Incoming		Hour Incoming				Total Hourly Incoming			Cumulative Incoming		from C&D	from SSR	MSW	Hourly Transferred			Cum Out	Hourly Truck Volumes	Tons	yd ³	
	Packer (trucks)	Roll-off (trucks)	Packer (trucks)	Packer (tons)	Roll-off (trucks)	Roll-off (tons)	Trucks	Tons	yd ³	Tons	yd ³	Tons	Tons	Tons	Trucks	Tons	yd ³	tons	(trucks)	Tons	yd ³	
12:00 AM			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:00 AM			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:00 AM			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 AM			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 AM			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 AM	0.0%	0.0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 AM	0.0%	0.6%	0	0	1	3	1	3	13	3	13	12	0	3	0	0	0	0	1	15	73	
7:00 AM	0.0%	0.6%	0	0	1	3	1	3	13	5	26	24	0	5	0	0	0	0	1	29	146	
8:00 AM	0.0%	1.7%	0	0	2	8	2	8	40	13	66	36	0	13	1	24	120	24	3	25	126	
9:00 AM	6.3%	1.7%	7	60	2	8	9	68	340	81	406	48	0	81	4	96	480	120	13	9	46	
10:00 AM	8.3%	1.7%	10	79	2	8	12	87	434	168	840	60	0	168	3	72	360	192	15	36	180	
11:00 AM	17.1%	1.1%	20	163	1	5	22	168	840	336	1680	72	0	336	4	96	480	288	26	120	600	
12:00 PM	7.7%	1.7%	9	73	2	8	11	81	404	417	2084	84	0	417	5	120	600	408	16	93	464	
1:00 PM	6.3%	0.0%	7	60	0	0	7	60	300	477	2384	96	0	477	5	120	600	528	12	45	224	
2:00 PM	8.3%	0.6%	10	79	1	3	11	81	407	558	2791	108	0	558	5	120	600	648	16	18	91	
3:00 PM	10.8%	0.6%	13	103	1	3	14	105	527	664	3319	120	0	664	4	96	480	744	18	40	199	
4:00 PM	8.9%	0.0%	11	85	0	0	11	85	424	749	3743	132	0	749	4	96	480	840	15	41	203	
5:00 PM	16.5%	0.0%	20	157	0	0	20	157	784	905	4527	144	0	905	4	96	480	936	24	113	567	
6:00 PM			0	0	0	0	0	0	0	905	4527	241	0	905	6	144	720	1080	6	67	334	
7:00 PM			0	0	0	0	0	0	0	905	4527	248	0	905	3.1	74.4	372	1154	3	-1	-4	
8:00 PM			0	0	0	0	0	0	0	905	4527	248	0	905	0	0	0	1154	0	-1	-4	
9:00 PM			0	0	0	0	0	0	0	905	4527	248	0	905	0	0	0	1154	0	-1	-4	
10:00 PM			0	0	0	0	0	0	0	905	4527	248	0	905	0	0	0	1154	0	-1	-4	
11:00 PM			0	0	0	0	0	0	0	905	4527	248	0	905	0	0	0	1154	0	-1	-4	
DAILY TOTALS	90%	10%	107	858	12	48	119	905	4527	905	4527	248	0	905	48.1	1154	5772	1154	167	MAX 120	MAX 600	

Assumptions:
 119 Total Collection Vehicles per Day
 1,000 Tons = Approximate Daily Throughput of Municipal Solid Waste (MSW)
 8 tons = Average MSW Packer Truck Load
 4 tons = Average MSW Roll-Off Truck Load
 24 tons = Average MSW Transfer Trailer Load
 1 ton MSW = 5 Cubic Yards on tipping floor (or 400 pounds/cubic yard)