

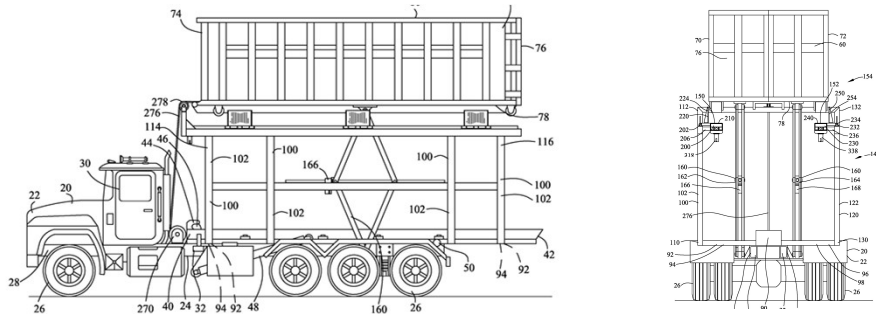
DUMPLEX® & FREIGHTPLEX® ROLL-OFF SYSTEMS

MORE WITH THE SAME, THE SAME WITH LESS™

VISION

Dumplex® Roll-off Systems

Dumplex® and Freightplex® are patented next-generation roll-off truck systems that will safely complete dumpster, compactor, tank, and container exchanges in under 7 minutes, vs. over 20 minutes with today's technology. Dumplex® eliminates costly and time-consuming 'round-trip' exchanges and has been successfully vetted by mechanical, structural and automotive engineers.



More With The Same, The Same With Less™

- Reduce load/unload time by at least 70%.
- Reduce fleet size and driver count by 25% while maintaining current haul capacity or increase haul capacity without adding new drivers or trucks.
- Save over 20% annually on operating and capital expenses with a higher utilization rate.
- Eliminate unnecessary round-trip exchanges.

ROLL-OFF TRUCKS HAVE NOT EVOLVED SINCE INCEPTION

Efficiency & Cost

- Lack of space necessitates inefficient and costly 'round-trip' exchanges where two visits are necessary to retrieve a full dumpster and deliver an empty one.
- Waste service customers have not had a choice as no technology existed to eliminate round-trip exchanges.
- The resulting carbon footprint for roll-off services is intensified with more mileage and more vehicles on the road due to inefficient round-trip exchanges.

Safety

- The longer drivers are outside of the truck the higher the chance of injury.
- Roll-off truck drivers are especially vulnerable to injury due to the frequency and duration of outside-the-cab procedures.




THE DUMPLEX SOLUTION

Solving Roll-off Challenges

- Save OpEx/CapEx and optimize fleet utilization
- Increase revenue with competitive bidding advantage
- Increase driver safety with less time outside of cab
- Decrease carbon footprint with fleet optimization
- Decrease required daily range to enable roll-off fleet electrification

Patent Protected Technology

		 US010322874B1	
(12) United States Patent Curley	(10) Patent No.: US 10,322,874 B1	(45) Date of Patent: Jun. 18, 2019	
(54) DUMPSTER HANDLING DEVICE AND METHOD	(56) References Cited	U.S. PATENT DOCUMENTS	
(71) Applicant: Mark D. Curley , Tampa, FL (US)	1,573,172 A * 2/1926 Laffey	B60P 1/02	187/268
(72) Inventor: Mark D. Curley , Tampa, FL (US)	2,953,410 A 9/1960 Chaney		
(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 33 days.	3,049,378 A 8/1962 Nelson		
	3,202,305 A 8/1965 Dempster et al.		
	3,362,552 A 1/1968 Thiele		
	3,499,562 A 3/1970 Phillips		
	3,612,315 A 10/1971 Blackburn		
(21) Appl. No.: 15/483,609	3,998,491 A * 12/1976 Diem	B60P 1/34	298/11
(22) Filed: Apr. 10, 2017	4,005,784 A 2/1977 Wilson		
	(Continued)		

OPERATIONAL DEMONSTRATION OF EXCHANGE PROCESS

Comparison of Exchanges

Dumplex Exchange <7 Minutes

All Other Exchange 20 Minutes



Full Demonstration Video | <https://markoni.com/>

BUSINESS MODEL

Asset/Capital Light – R&D + Marketing

- Granted US patents 10,322,874, 10,850,657, and 11,117,741 with 2037 expiration dates.
- Certified engineering drawings by JNE Engineering.
- Engineering opinion on compliance and safety issued by automotive engineer at Ameche Designs.
- Direct marketing to end users with established contacts from customer discovery will aid channel partners.

Contract Manufacturers as Channel Partners

- Roll-off truck body manufacturing in North America is fairly consolidated with the top 4-5 firms supplying most of the top 100 waste management companies.
- Partnering with a small number of top firms grants access to most of the TAM.

MARKET OPPORTUNITY

North American Roll-off Truck Fleet

- The Motor Carrier Management Information System indicates there are ~412K garbage, refuse, and trash trucks in North America | <https://ai.fmcsa.dot.gov/RegistrationStatistics/CustomReports#RegData>
- Available data from the largest haulers indicate their fleet is about 21% roll-off trucks.
- We estimate the North American roll-off fleet to be **95,000** trucks.

Total Addressable Market

- Fleet Churn – According to Waste Today Magazine a roll-off truck has a useful life of ~16 years. This represents an average churn or replacement of 6,000 trucks per year.
- The MSRP for a turn-key Duplex truck is \$300,000.
- The North American TAM alone is \$1.8 billion.

DIFFERENTIATION/COMPETITION – COMPARISON PRO FORMA

24 Trip Per Day Capacity			4 Truck Capacity		
	Incumbent	Markoni		Incumbent	Markoni
Trucks	4	3	Daily Trip Capacity	24	32
Drivers	4	3	Annual Trip Capacity	6,000	8,000
Daily Miles Driven ¹	700	600	Daily Miles Driven ¹	700	800
Annual OpEx Total ²	\$ 470,964	\$ 366,723	Annual OpEx Total ²	\$ 470,964	\$ 488,964
CapEx Total	\$ 919,600	\$ 900,000	OpEx/Trip	\$ 78.49	\$ 61.12
			CapEx/Trip (16 Year Amort)	\$ 9.58	\$ 9.38
16 Year OpEx + CapEx	<u>\$ 8,455,024</u>	<u>\$ 6,767,568</u>	16 Year OpEx + CapEx/Trip	<u>\$ 88.07</u>	<u>\$ 70.50</u>
Dumplex/Freightplex Savings		20.0%	Dumplex/Freightplex Savings		20.0%

1. Assumes average speed of 30 m.p.h and one dump trip per truck, per day.

2. Driver comp. \$86,241/yr, diesel \$0.50/mi, repairs & maintenance \$0.12/mi, insurance \$0.05/mi, other \$0.05/mi. 250 work days/yr.

3. 2024 Freightliner 114 SD Roll-off

TRACTION/CUSTOMER DISCOVERY

Waste Management Companies – End Users

- Major North American waste management companies have expressed interest.
- They have indicated willingness to demo production prototype.
- No/low-cost leased demo to haulers in exchange for operational data and acknowledgement of program for marketing purposes.

Truck Body/Hoist Manufacturers

- Truck body and hoist manufacturers have indicated willingness to produce Duplex system.
- Have indicated that they need customers to prove market exists for this product.

BIOGRAPHY

Mark Curley Inventor

Mark has been developing the Duplex concept since 1987. In addition to being an inventor holding several patents, he has a diverse life résumé that not only includes a wide array of 'traditional' jobs but also several in the creative arts.

Mark's experiences and dedication have enabled him to shepherd his creation from concept to reality and has cleared the path for commercialization.

Ideally, he would like to partner with someone who not only provides sufficient investment capital, but also sound business advice that helps Duplex become the huge success it deserves to be.

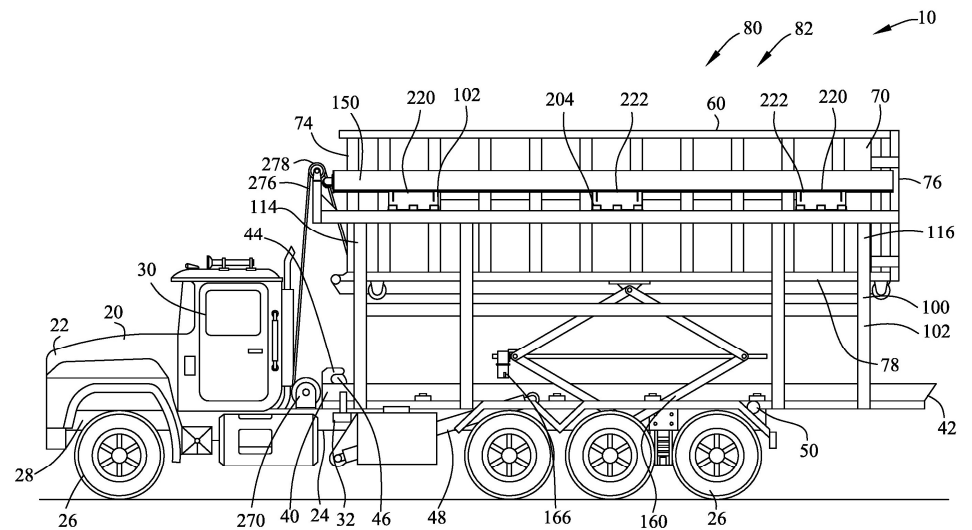
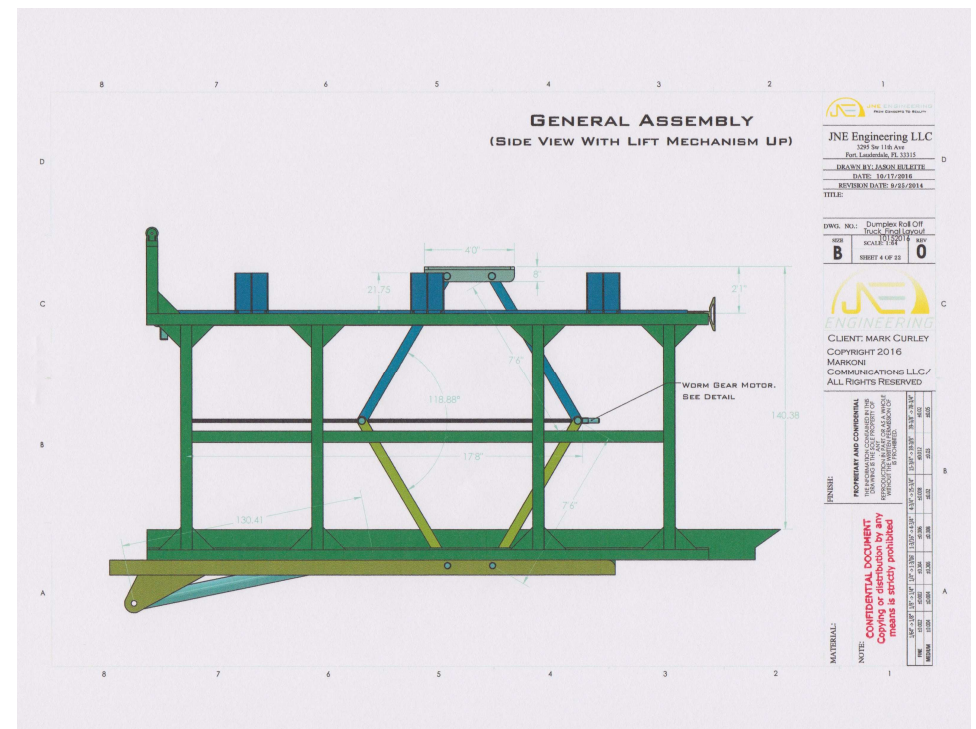


FIG. 4

ASK/FUNDING

Derisked Seed Round

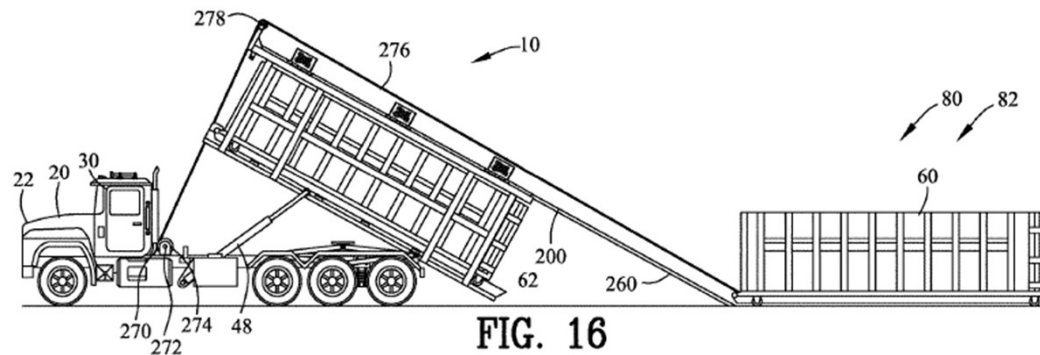
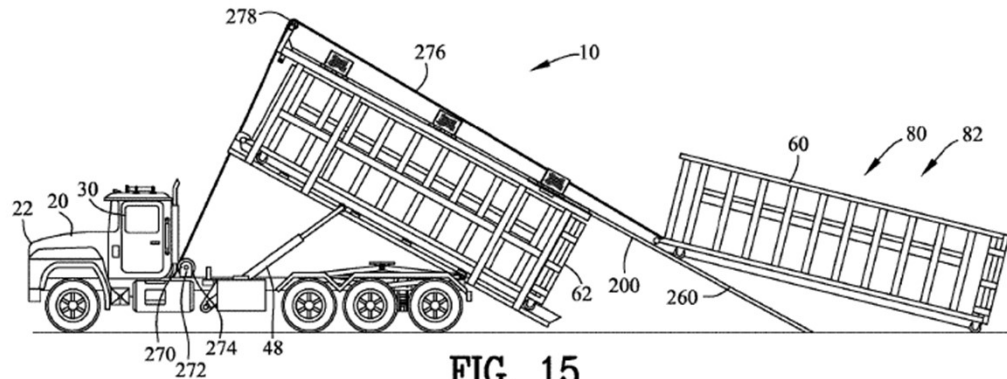
- \$1,000,000
- 2 Commercial Prototypes
- \$300,000+ already invested by inventor
- Technology Readiness Level 4
- Off-the-shelf components do not require any further technology development
- Strong IP protection

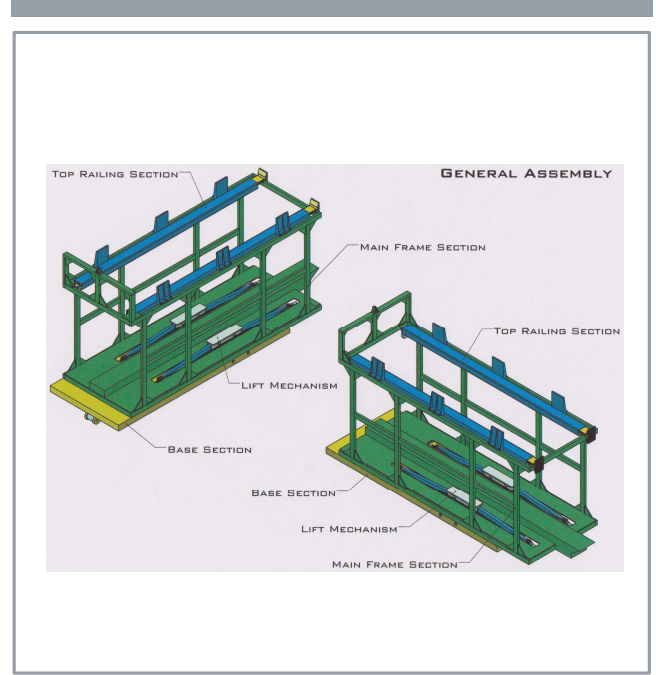
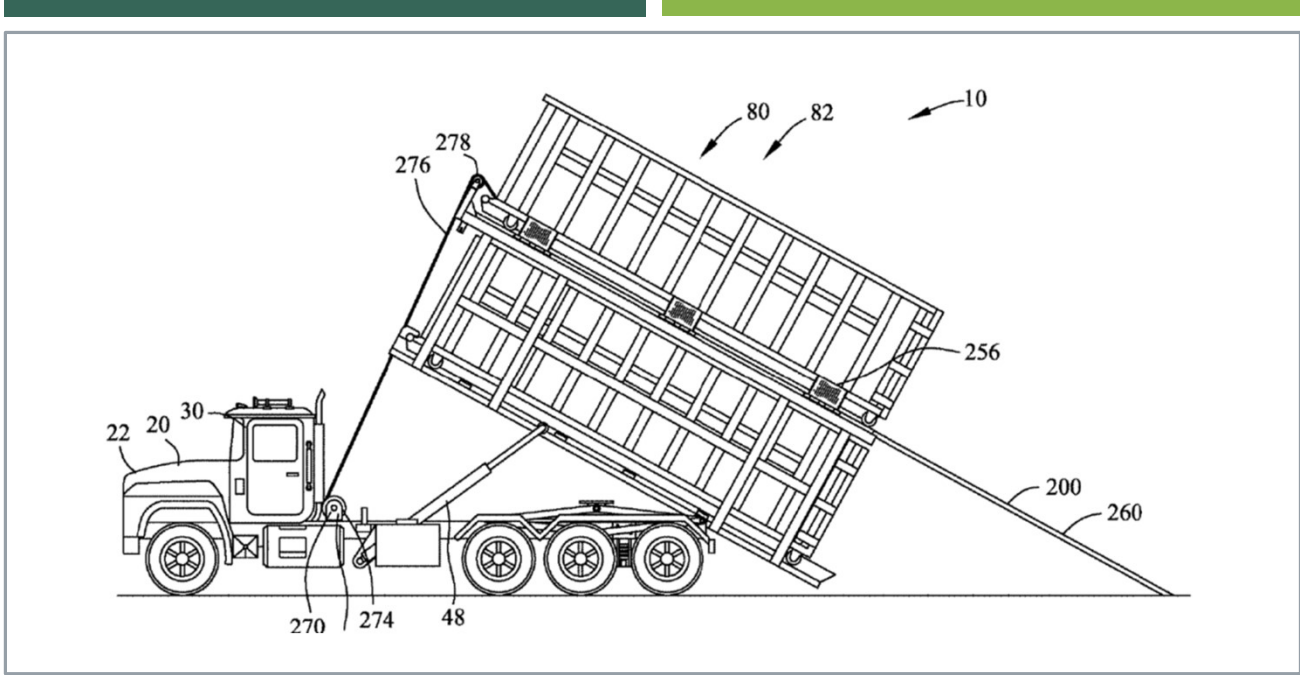


CONTACT INFORMATION

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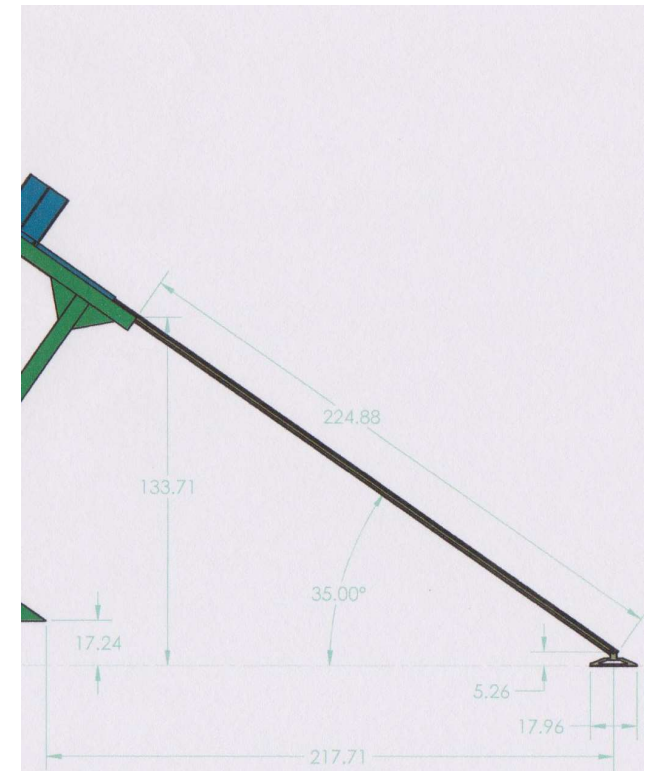
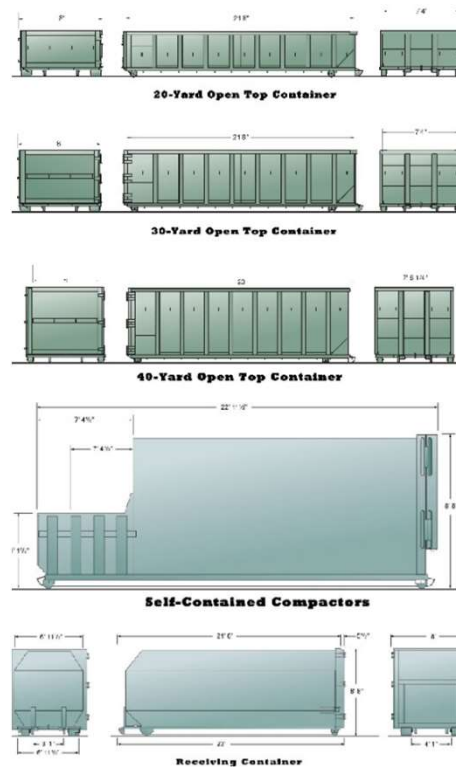


APPENDIX

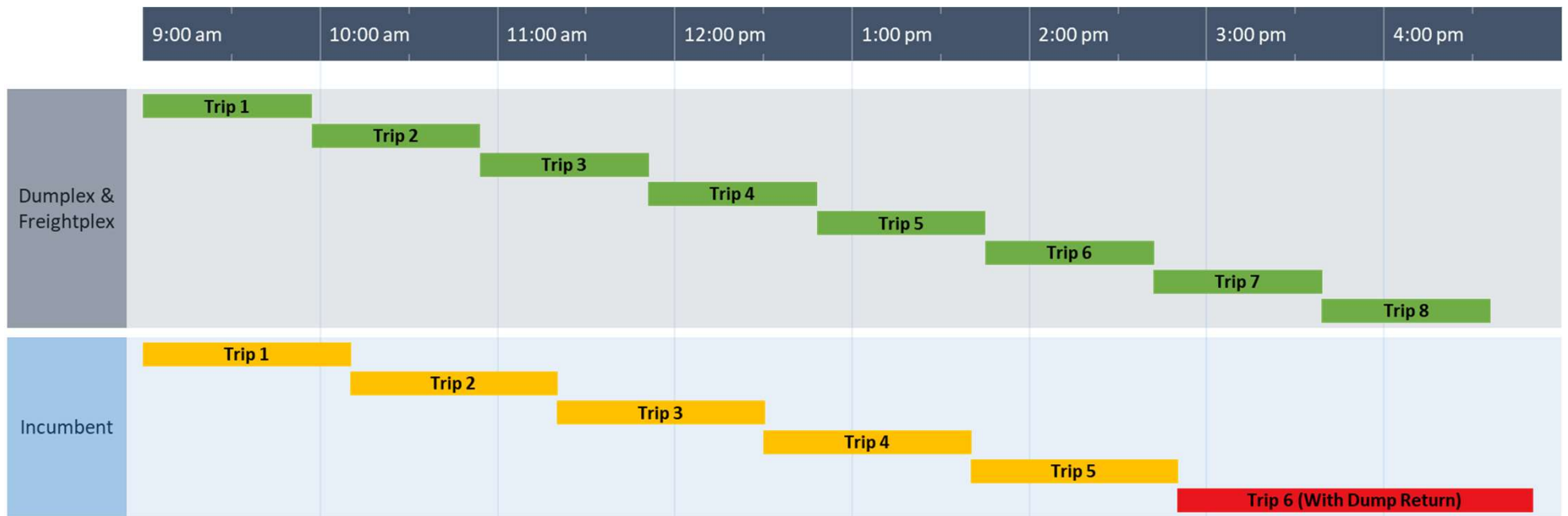
CONTAINER CAPABILITY & OPERATIONAL ENVELOPE

Dumplex and Freightplex were conceived and designed for adaptability without sacrificing functionality. The system can be used with all common roll-off waste containers including 20, 30, and even 40 yard open top containers as well as compactors. The system also works with specialty containers like dewatering and vacuum tanks for hazardous waste.

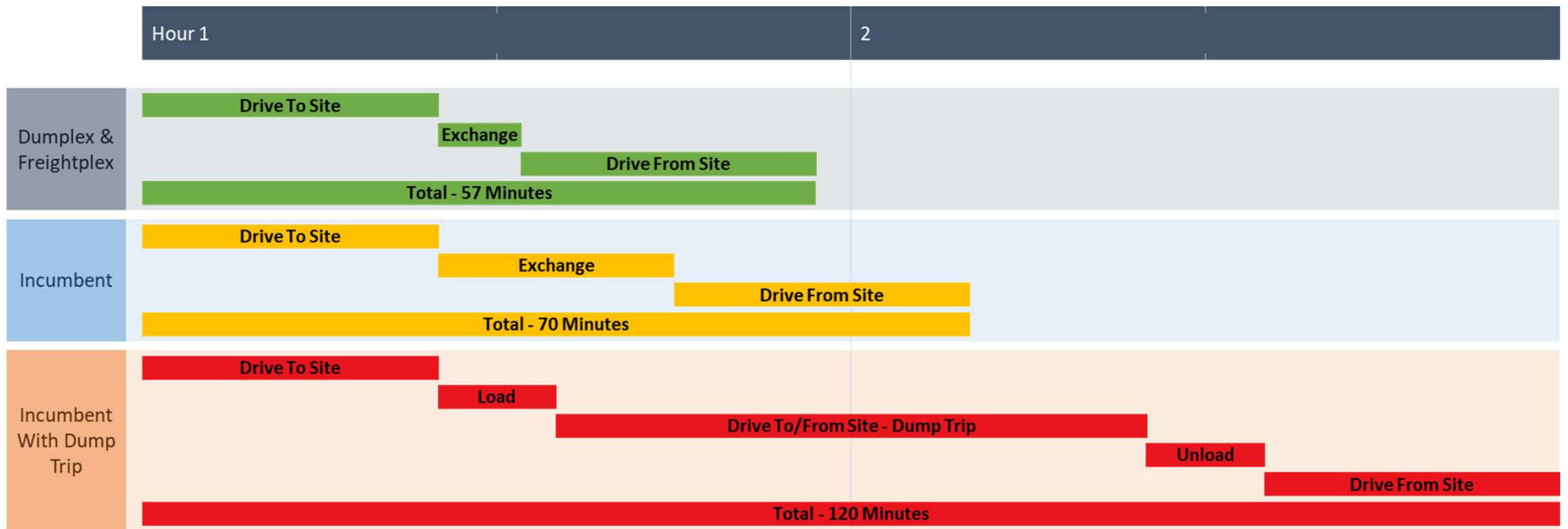
Minimal additional runway (approximately 19 feet) is needed for container exchanges.



DAILY SCHEDULE



TRIP TYPE DETAILS



FREQUENTLY ASKED QUESTIONS

- **WHAT IS THE WEIGHT AUGMENTATION?** – We estimate a maximum of 1,000-1,500 pounds of additional weight compared to a traditional roll-off body, depending on final design.
- **WHAT ABOUT STABILITY DURING LOAD/UNLOAD?** - David Ameche of Ameche Designs, an automotive engineering firm in Royal Oak, Michigan reviewed the truck body design. He concluded that the base trucks should be fine with unloading rear-offset weight and there shouldn't be an issue with weight and balance, and unloading the empty with the full dumpster being loaded in the lower bay should not present an issue.
- **HOW DOES TARPING WORK?** – Any commercially available tarping system can be easily adapted to work within the 'cage' and able to accommodate open containers of varying height.
- **CAN THIS BE ADAPTED FOR OTHER USES?** – Absolutely, the inventor envisioned and patented any Duplex or Freightplex variant as a platform where we would work with end-users to further develop any system that utilizes the same core technology.
- **WHO WILL MANUFACTURE THIS?** – The short answer is: Duplex Trucks LLC. We will market it, book the orders, and provide customer service. However, we will farm out the actual manufacturing on a contract basis to the chassis, hoist, and tarping system makers. Waste collection firms often have strong preferences for each of these three components, and we will provide buyers with whatever blend they wish at an agreed-upon price.