



Transfer Station Capacity and Demand

Transfer Plan Review Subcommittee
August 15, 2014



Capacity and Demand

- Capacity describes the amount of refuse or the number of customers a station can process in a given time period
- Demand is the amount of refuse or the number of customers using the station in a given time period
- When demand is greater than capacity, lines form and customers wait

Tonnage Capacity

Tonnage capacity varies based on station design, number and size of compactors, and operation

- Compactor stations have more capacity than top load stations due to floor space
- A standard compactor can process 100 tons per hour
- Operationally, trailers can be switched out at a rate of about four per hour per compactor

Tonnage Capacity at Shoreline

Tonnage capacity at Shoreline is about 100 tons per hour

- One compactor, average payload of 25 tons per trailer, 4 trailers per hour = 100 tons per hour

Transactional Capacity

Transactional capacity is more significant than tonnage capacity in forecasting overall station capacity

- More likely to exceed transactional capacity
- More variable than tonnage

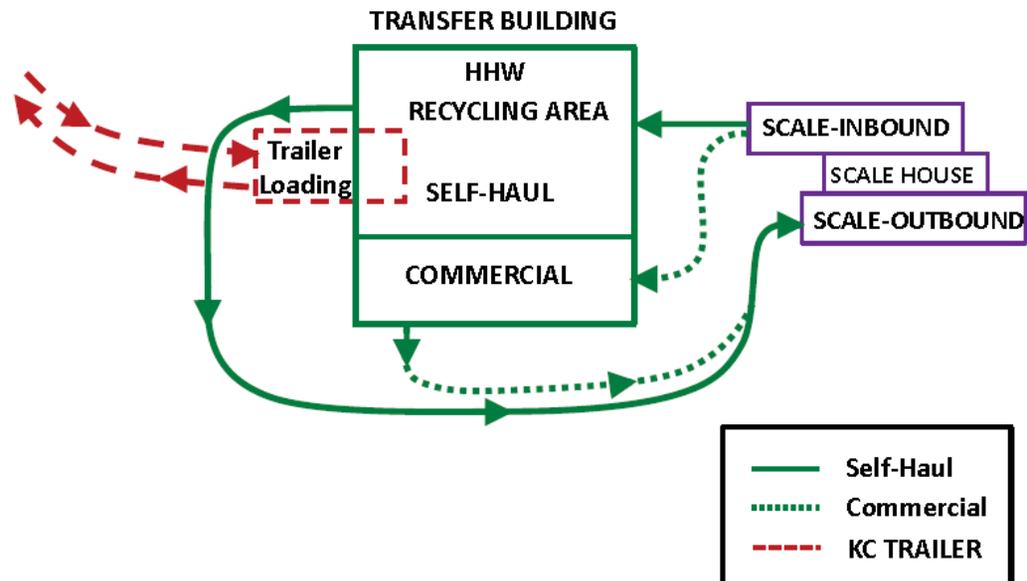
Factors that affect transactional capacity

- Time to move through the transfer station

- Inbound scale
- Entering tipping building
- Backing in
- Unloading
- Recycling
- Outbound scale

- Number of unloading spaces

- Type of vehicle



Transactional Capacity at Shoreline

Transactional capacity on a weekday at Shoreline is about 73 vehicles per hour –13 commercial and 60 self-haul

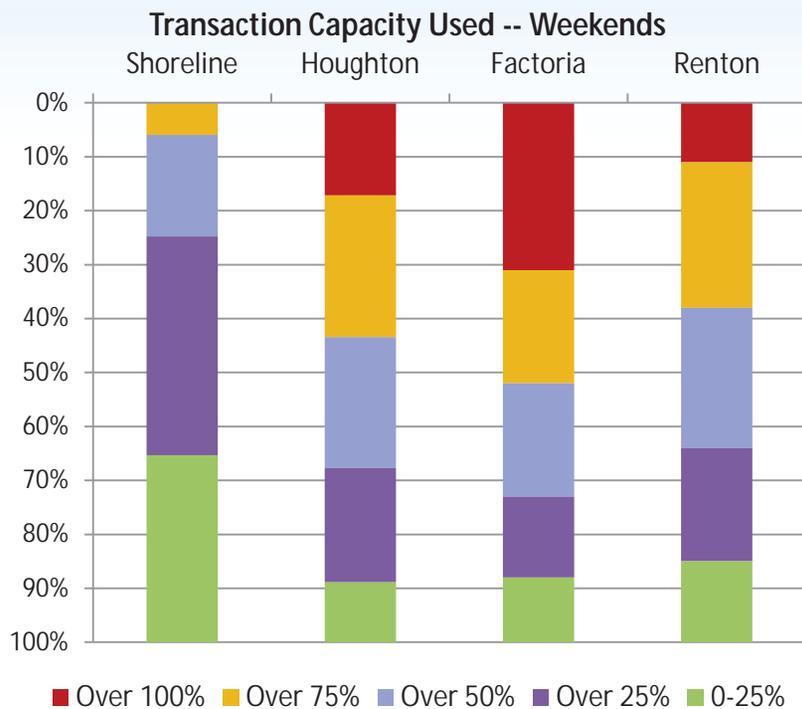
- 2 commercial unloading spaces, commercial time in station is 9 minutes = about 13 commercial vehicles
- 12 self-haul unloading spaces, self-haul time in station is 12 minutes = about 60 self-haul customers

Determining How Well a Station Meets Transactional Capacity

Historical data is used to determine the percentage of time that a station meets transactional capacity

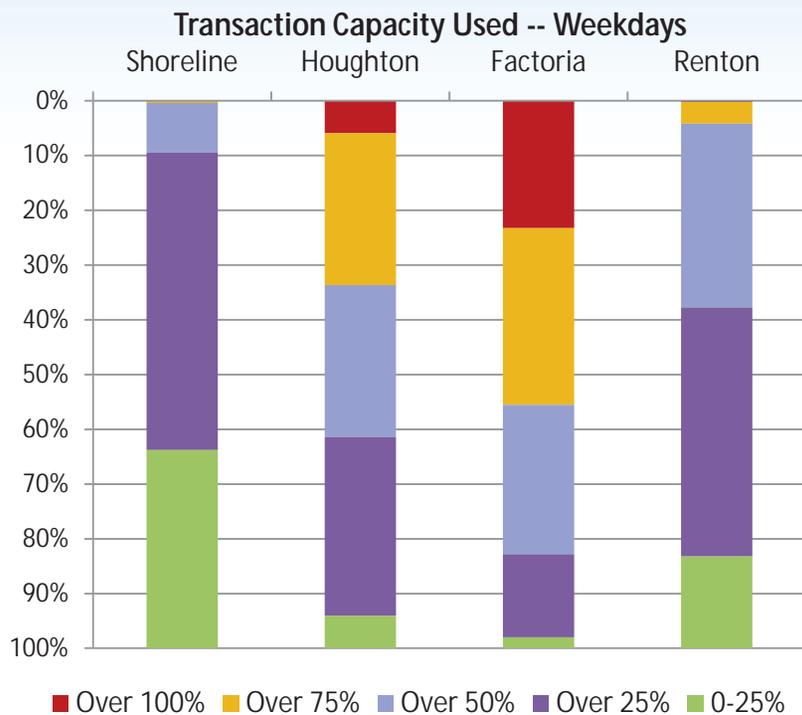
- By weekday/weekend, by hour
- Actual customer use patterns
- Does not use averages

Current Weekend Transactional Capacity Based on Hours for Garbage



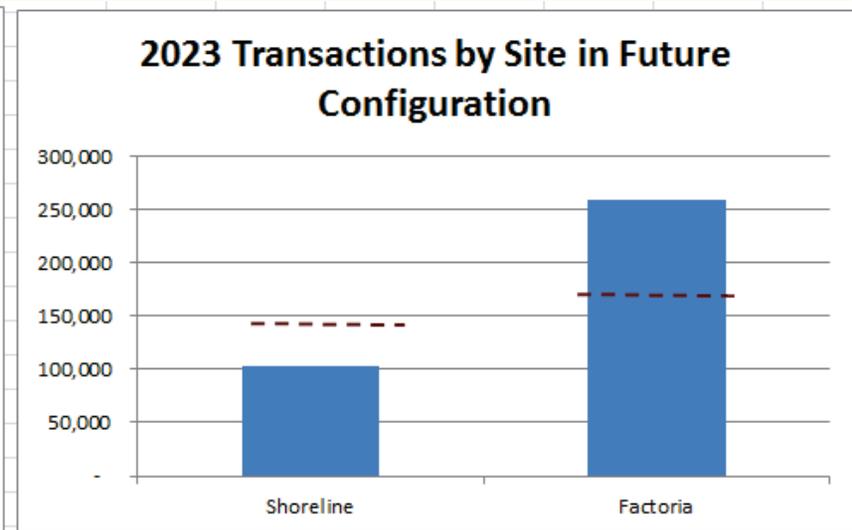
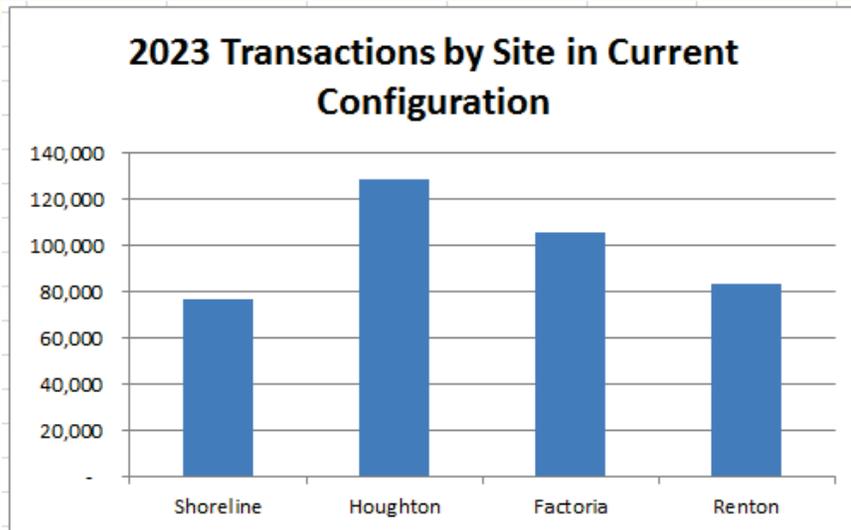
- This chart shows data for the last year about the number of transactions processed each hour
- It does not provide information about how many customers had to wait or wait times
- We will be gathering data to help answer questions about what it means to customers when a station reaches a certain level of capacity
 - For example: over 75% capacity means that XX% of customers will experience a wait of not more than XX minutes

Current Weekday Transactional Capacity Based on Hours for Garbage



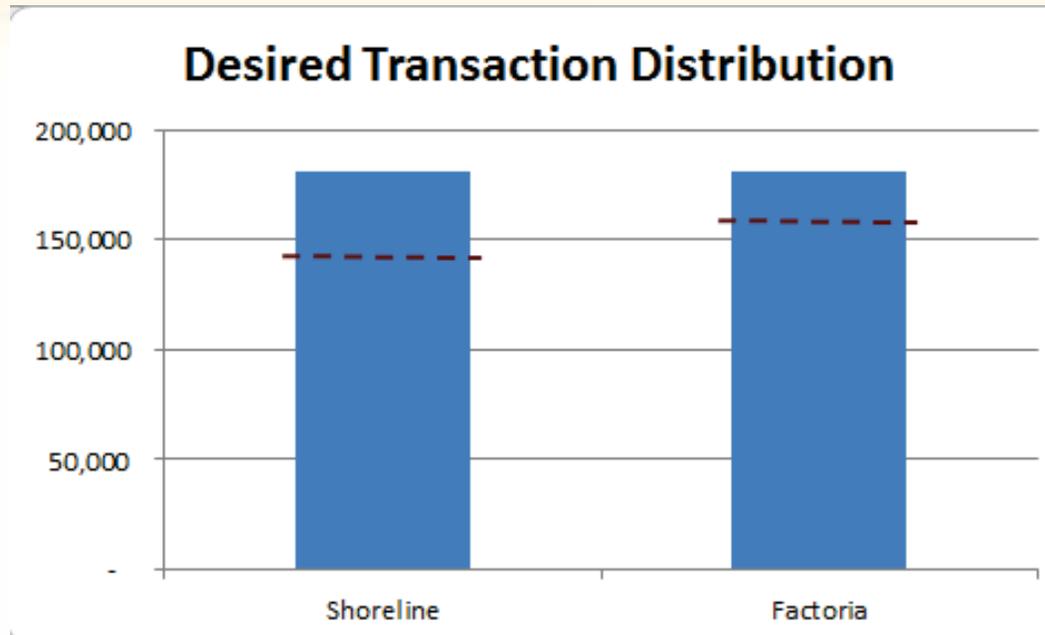
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2023 Transactions

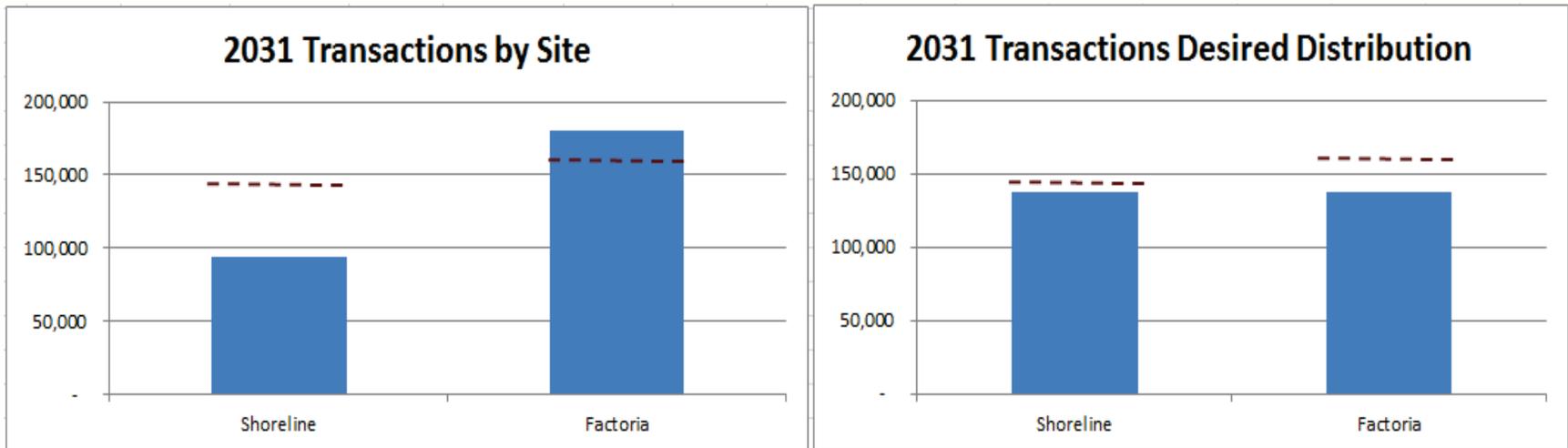


Assumes new Facteria; Houghton and Renton closed

2023 Transactions Redistributed



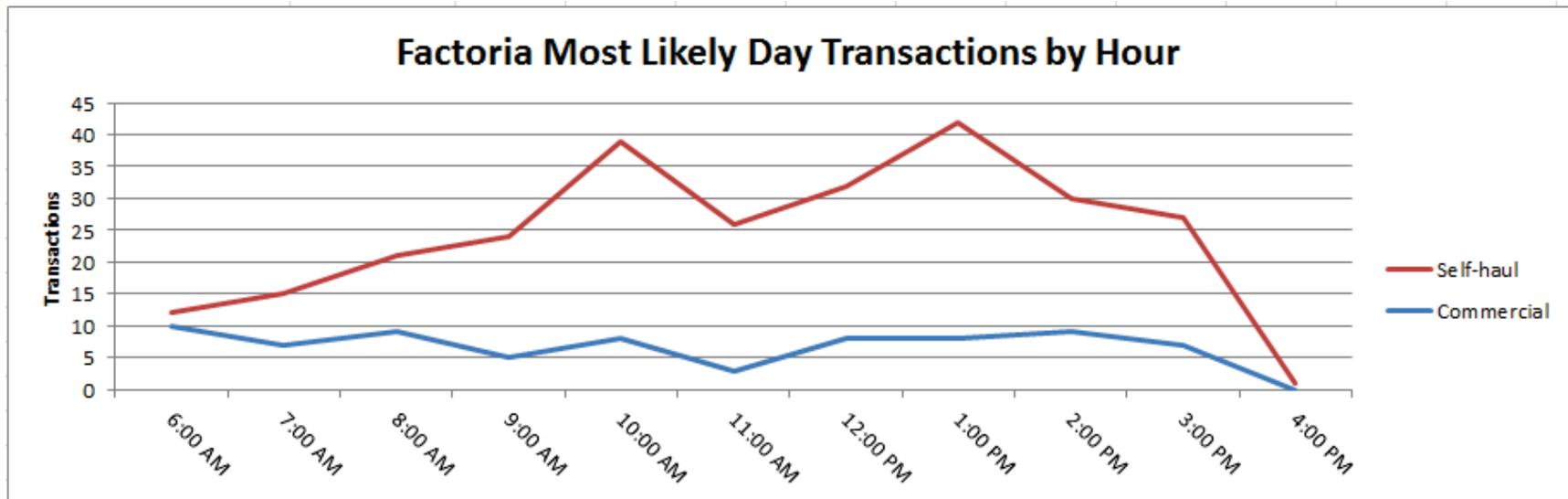
2031 Transactions



Assumes Bellevue commercial has left the system and that 70% recycling goal has been achieved

Factoria Current Vehicle Inflow

Tuesday, October 15, 2013



Forecasting Demand Strategy Effects

- Apply observational data to historical data
- Measure how demand changes
- Compare alternatives

Demand Management Strategies

- Extended operating hours
- Restricted self-haul hours
- Higher self-haul fees/higher minimum fee
- Fee incentives for certain hours and/or locations
- Redirect commercial haulers to less-used stations
- Web and/or an app to provide wait-time information
- Unloading assistance for self-haulers
- Additional scales at Factoria and Shoreline
- Keep Renton open
- Ban some materials from some transfer stations, e.g., yard waste
- Mandatory garbage and recyclables collection
- Bulky waste collection (convenient, low cost)
- More use of Cedar Hills with or without change to regional direct fee



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