



Transfer Station Capacity and Demand

Transfer Plan Review Subcommittee
August 15, 2014



King County

Department of
Natural Resources and Parks
Solid Waste Division

Serving
Community

Protecting
Environment

Operating
Excellence

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

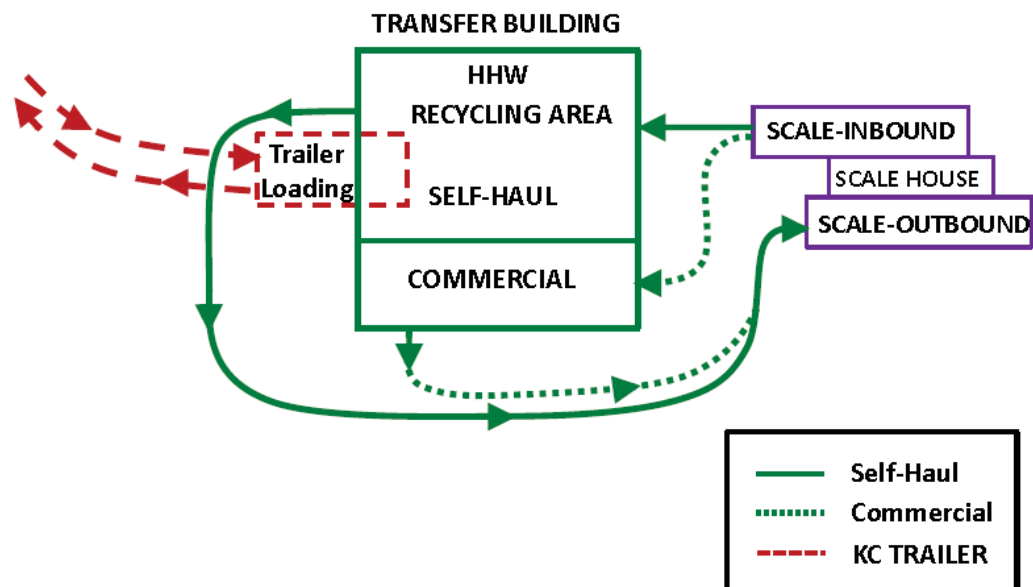
Factors that affect transactional capacity

- 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

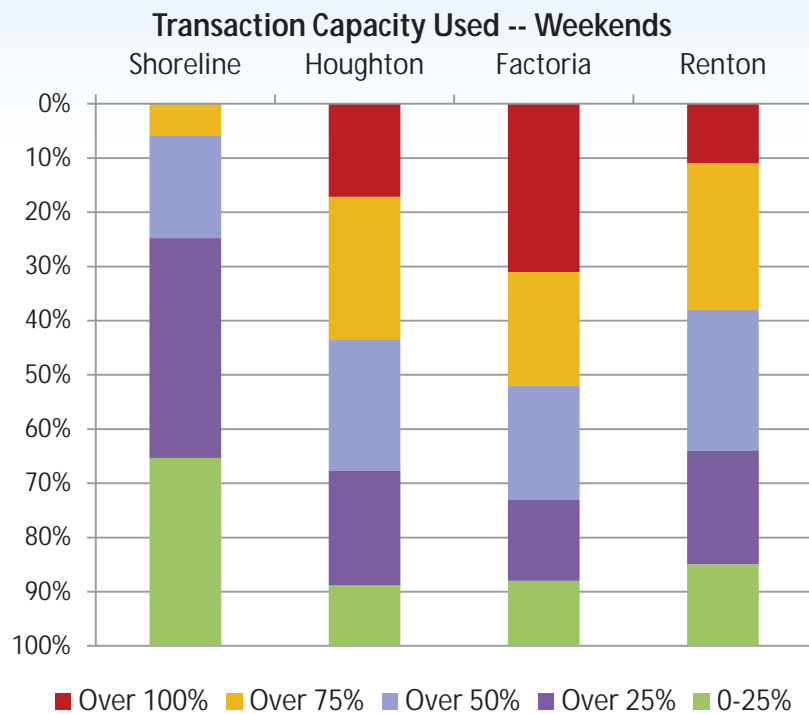
- 2 commercial unloading spaces, commercial time in station is 9 minutes = about 13 commercial vehicles
- 12 self-haul unloading spaces, self-haul time in station is 12 minutes = about 60 self-haul customers

Determining How Well a Station Meets Transactional Capacity

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

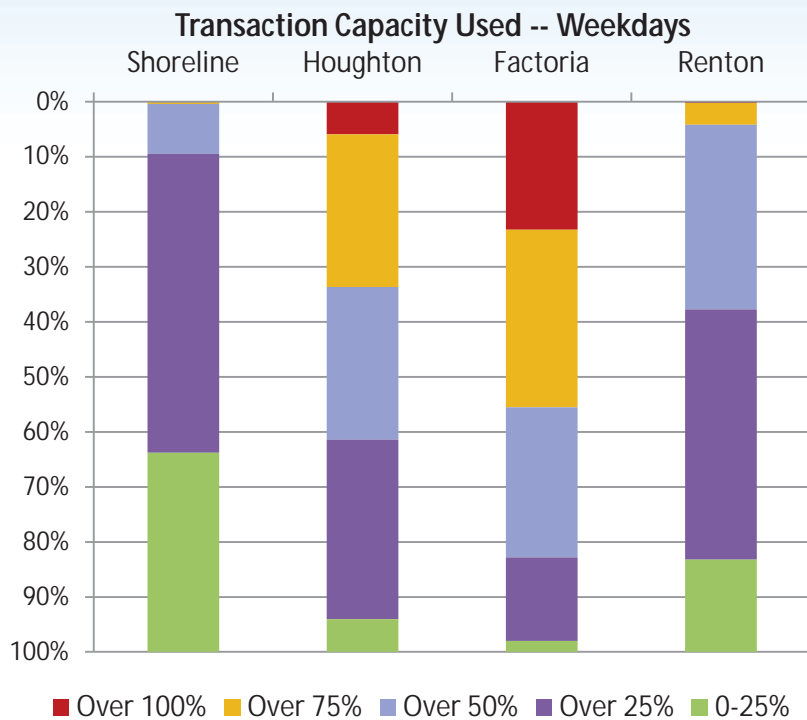
- By weekday/weekend, by hour
- Actual customer use patterns
- Does not use averages

Current Weekend Transactional Capacity Based on Hours for Garbage



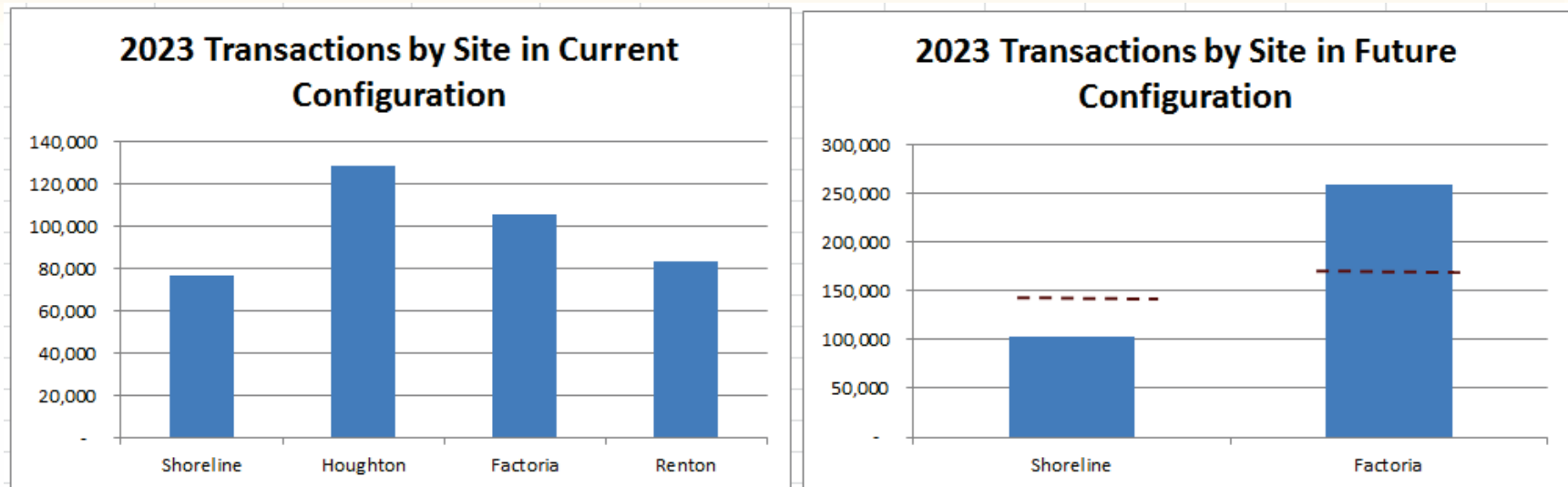
- This chart shows data for the last year about the number of transactions processed each hour
- It does not provide information about how many customers had to wait or wait times
- We will be gathering data to help answer questions about what it means to customers when a station reaches a certain level 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



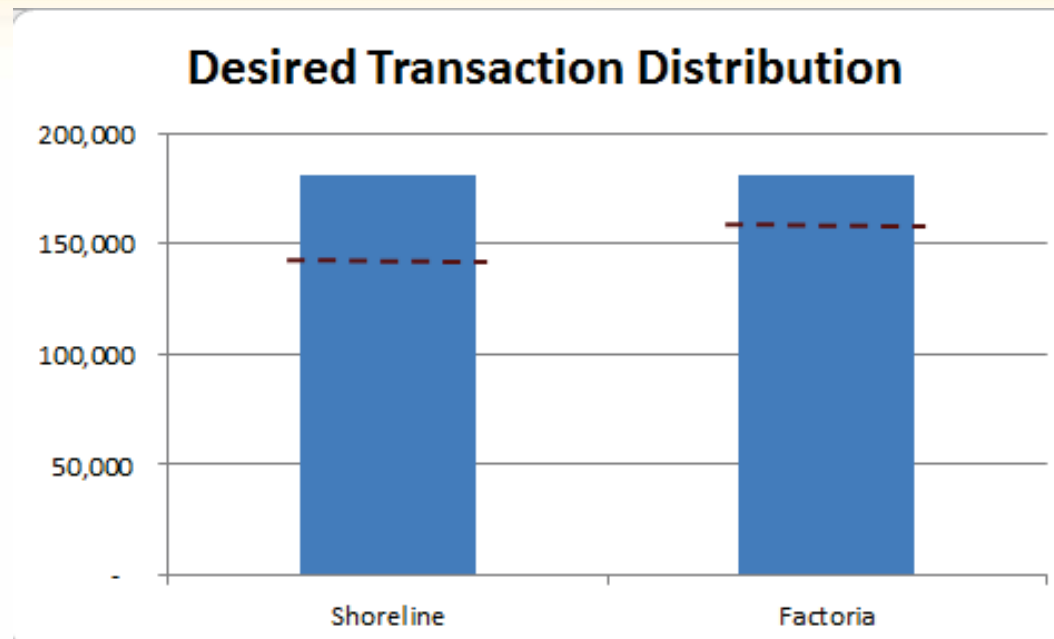
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2023 Transactions

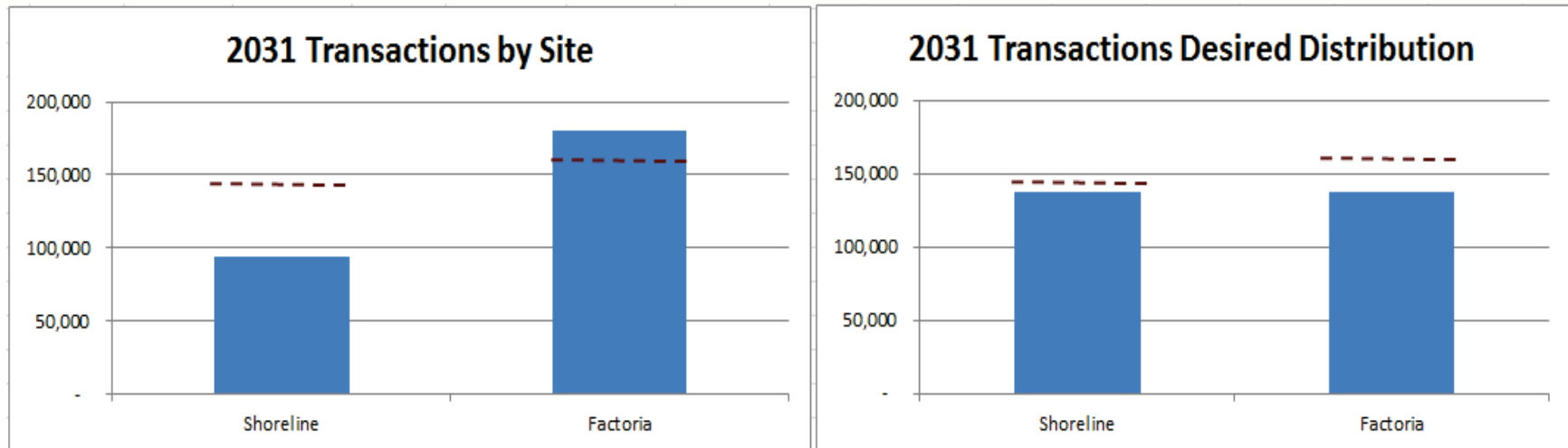


Assumes new Factoria; Houghton and Renton closed

2023 Transactions Redistributed



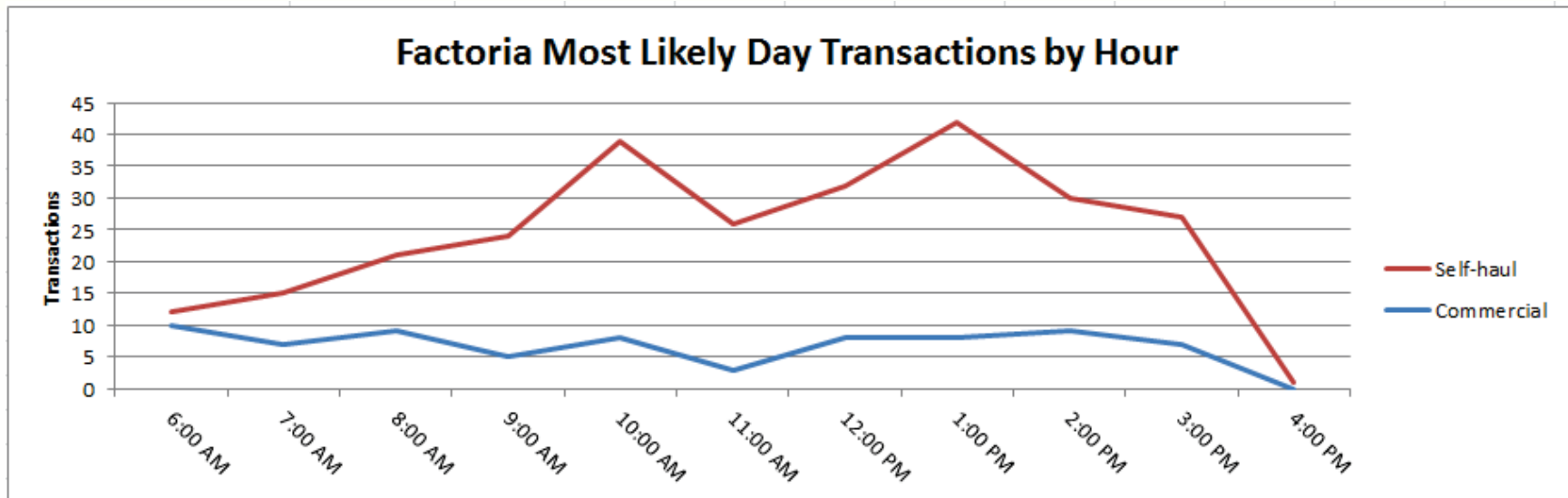
2031 Transactions



*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



King Street Center
201 South Jackson Street, Suite 701
Seattle, WA 98104-3855
206-477-4466
711 TTY Relay
www.kingcounty.gov/solidwaste