

Stakeholder Requirements Document: Cyclistic Bike Sharing Demand

BI Professional: Kolton Gross

Client/Sponsor: Jamal Harris, Director, Customer Data

Business problem: Cyclistic's Customer Growth team is creating a business plan for the next year and wants to know how bikes are being used by their customers? How can we use these insights to understand demand for different station locations? The top priority is to understand demand at various stations.

Stakeholders:

- Sara Romer, VP, Marketing
- Ernest Cox, VP, Product Development
- Jamal Harris, Director, Customer Data
- Nina Locklear, Director, Procurement

Stakeholder usage details: The team will use these insights to gain insight of the data being generated at different locations. They will then use this information to understand what customers want, how to create a successful product, and how new stations might be beneficial for various geographical areas.

Primary requirements:

- Include a table or map visualization that shows starting and ending location, aggregated by location
- Include a visualization showing which destination locations are popular based on the total trip minutes, focusing on peak months
- Include a visualization focusing on trends from the summer of 2020
- Should show the percent growth in the number of trips yearly
- Include a congestion tracker for stations
- Include a precipitation tracker to show correlation between dips in traffic and show impact of weather
- Gather insights about the number of trips from all starting and ending locations

Project Requirements Document: Cyclistic Bike Sharing Demand

BI Analyst: Kolton Gross

Client/Sponsor: Jamal Harris, Director, Customer Data

Purpose:

Cyclistic is partnering with the city of New York to provide shareable bikes, and want to understand how their bikes are being used. The goal is to identify customer demand at different station locations and understand how seasonality affects traffic. As the dataset includes millions of rides, the team wants a dashboard that will summarize some of the key insights.

Key dependencies:

Stakeholders:

- Sara Romer, VP, Marketing
- Ernest Cox, VP, Product Development
- Jamal Harris, Director, Customer Data
- Nina Locklear, Director, Procurement

Team Members:

- Adhira Patel, API Strategist
- Megan Pirato, Data Warehousing Specialist
- Rick Andersson, Manager, Data Governance
- Tessa Blackwell, Data Analyst
- Brianne Sand, Director, IT
- Shareefah Hakimi, Project Manager

Primary Contacts: Adhira Patel, Megan Pirato, Rick Andersson, and Tessa Blackwell

Some of the datasets might need approval from the teams that own said datasets, including bike trip duration and bike identification numbers to ensure that the data is being interpreted correctly.

Stakeholder requirements:

- R - Include a table or map visualization that shows starting and ending location(see if we can't give option for zip code, station,or neighborhood), aggregated by location
- R - Include a visualization showing which destination locations are popular based on total trip minutes, focusing on peak months
- R - Include a precipitation tracker to show impact of weather
- R - Gather insights about peak usage time involving the time of day, season, and how weather impacts
- R - Include a visualization regarding the percent growth in the number of trips yearly

- D - Large group of users to get a fair representation of users across locations with high and low activity levels
- D - Include a visualization of trends from summer 2020

- N - Include a congestion tracker

Success criteria:

Project will be completed in 6 weeks.

Dashboard will be fully functional for the team to view insights into how seasonality affects usage. Stakeholders will have access to view all necessary information.

Specific: Insights must identify the characteristics of a successful product. Demonstrate how customers are using bikes and what impacts demand.

Measurable: Evaluate each trip using starting and ending location, duration, time of day, season, weather, and subscriber status.

Action-Oriented: Prove whether weather, time of day, season, or location have an impact on user demand.

Relevant: All metrics should support the question of how to build a better Cyclistic experience.

Time-Bound: Analyze data spanning at least a year to see how seasonality affects usage

User journeys:

More information needed, currently there are bike stations located through Manhattan and neighboring boroughs. Customers are able to rent bikes for easy travel between stations at

these locations. This information will help identify where locations should be shifted to meet the demand, and understand how seasons impact usage.

Assumptions:

The dataset does not include geographic details including zip code, neighborhood, or borough. The team is expected to provide a separate database with this data.

Weather data does not include the time of precipitation, and as such it is possible that on some days, precipitation did not have an impact on traffic. For this dashboard though, assume that any amount of precipitation will have an impact on traffic.

Traffic will not be tracked if there are no bikes available at a station, so need to find another way to track demand.

Compliance and privacy:

Data must not contain any personal information and users must be anonymized.

Accessibility:

More information needed, but reports must have large font and text-to-speech options available

Roll-out plan:

Project should be completed in 6 weeks.

Week 1: Dataset assigned. Initial design for fields and BikeIDs validated

Weeks 2-3: SQL and ETL development

Weeks 3-4: Finalize SQL. Dashboard Design. 1st draft review with peers.

Weeks 5-6: Dashboard development and testing

Strategy Document: Cyclistic Bike Sharing Demand

Sign-off matrix:

Name	Team / Role	Date

Proposer: Jamal Harris, Director, Customer Data

Status: **[Draft]** > Under review > Implemented | Not implemented (Highlight current status)

Primary dataset: NYC Citi Bike Trips -

<https://console.cloud.google.com/marketplace/details/city-of-new-york/nyc-citi-bike?pli=1>

Secondary dataset: Census Bureau US Boundaries -

<https://console.cloud.google.com/marketplace/product/united-states-census-bureau/us-geographic-boundaries>

User Profiles

- Sara Romer, VP, Marketing
- Ernest Cox, VP, Product Development
- Jamal Harris, Director, Customer Data
- Nina Locklear, Director, Procurement
- Adhira Patel, API Strategist
- Megan Pirato, Data Warehousing Specialist
- Rick Andersson, Manager, Data Governance
- Tessa Blackwell, Data Analyst
- Brianne Sand, Director, IT
- Shareefah Hakimi, Project Manager

Dashboard Functionality

Dashboard Feature	Your Request
Reference dashboard	N/A

(Should this dashboard be modeled on an existing dashboard? If so, provide a link and describe the similarity.)	
Access (How should access to the dashboard be limited? Who needs to have access?)	Read Access: Sara Romero, Ernest Cox, Jamal Harris, Nina Locklear, Adhira Patel
Scope (What data should be included or excluded in this dashboard?)	Include: <ul style="list-style-type: none"> • Bike ID • Customer ID • Subscriber Status • Trip start time and location • Trip end time and location • Precipitation tracker to show correlation between dips in traffic and show impact of weather • Trip Count • Date
Date filters and granularity (Should the dashboard include date filters? If so, what time frame should be displayed by default? Should the dashboard include a “granularity” drop-down? If so, what granularity should be selected by default?)	Should include daily, monthly, and yearly filters Granularity should allow any chart with detail metrics to click on a metric to view specific information

Metrics and Charts

Create a table for each chart that you’d like to include in the dashboard. If you’d like to break the dashboard under different headers, feel free to list those here as well.

Chart 1

Chart Feature	Your Request
Chart title	Seasonal Trends
Chart type (What type of chart needs to be created?)	Map
Dimension(s)	Neighborhood start

(What dimensions does this chart need to include?)	Neighborhood end Number of rides Average trip duration Weather
Metric(s) (What metrics are relevant to this chart?)	Trip minutes Weather Number of rides

Chart 2

Chart Feature	Your Request
Chart title	Trip Totals
Chart type (What type of chart needs to be created?)	Line
Dimension(s) (What dimensions does this chart need to include?)	Date
Metric(s) (What metrics are relevant to this chart?)	Trip Count

Chart 3

Chart Feature	Your Request
Chart title	Trip Counts by Starting Neighborhood
Chart type (What type of chart needs to be created?)	Heat Map
Dimension(s) (What dimensions does this chart need to include?)	Neighborhood Month
Metric(s) (What metrics are relevant to this chart?)	Trip Count

Chart 4

Chart Feature	Your Request
Chart title	Total Trip Minutes by Destination
Chart type (What type of chart needs to be created?)	Bar
Dimension(s) (What dimensions does this chart need to include?)	Zip code end Borough end Neighborhood end Subscriber Status
Metric(s) (What metrics are relevant to this chart?)	Trip Minutes

Chart 5

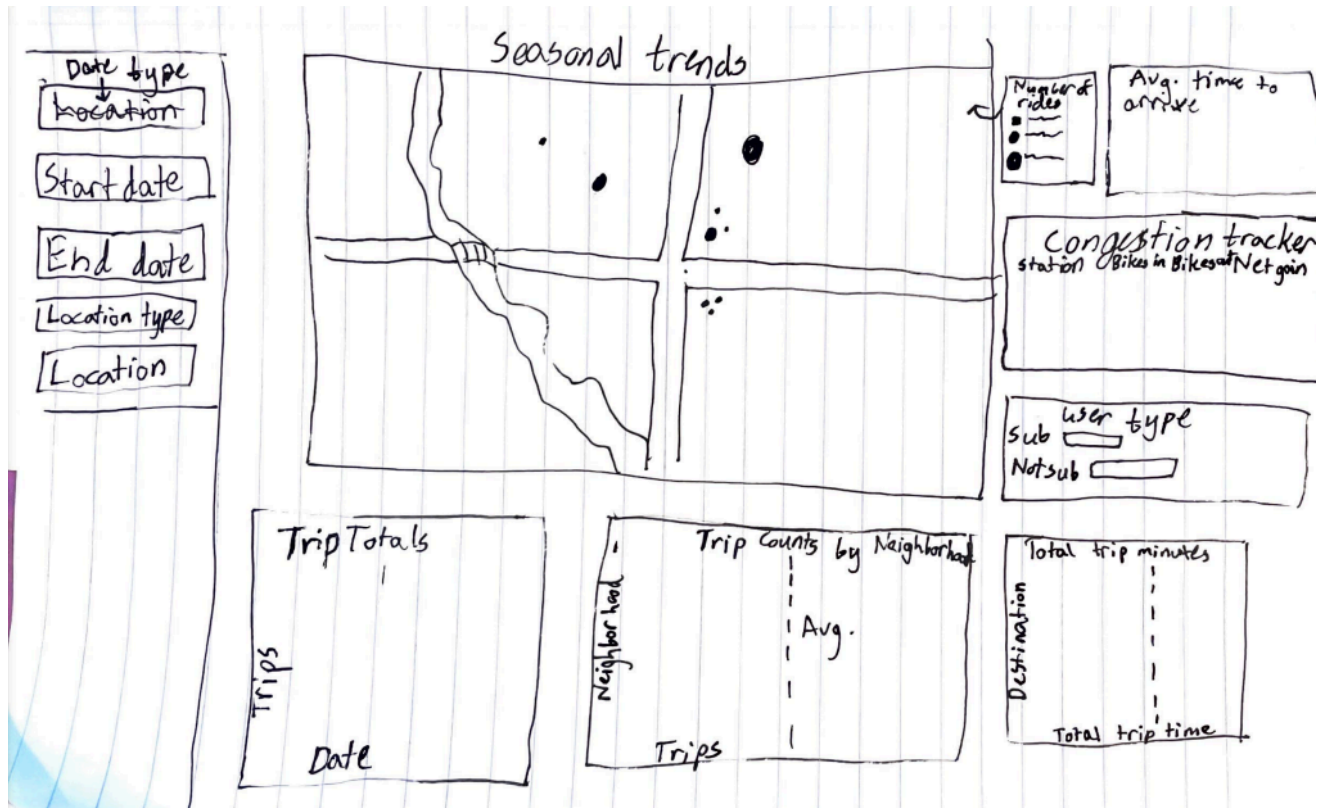
Chart Feature	Your Request
Chart title	Average Time To Arrive
Chart type (What type of chart needs to be created?)	Table
Dimension(s) (What dimensions does this chart need to include?)	Zip code end Borough end Neighborhood end Date Total trips
Metric(s) (What metrics are relevant to this chart?)	Trip Minutes

Chart 6

Chart Feature	Your Request
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Chart title	Congestion Tracker
Chart type (What type of chart needs to be created?)	Table
Dimension(s) (What dimensions does this chart need to include?)	Zip code start Borough start Neighborhood start Bikes In Bikes Out Net Gain
Metric(s) (What metrics are relevant to this chart?)	Zip code start

Dashboard mockup



Cyclistic Station Trends



Kolton Gross

Agenda





- Project Overview and Goals (5 mins)
- Data and Analysis (10 mins)
- Recommendations (3 minutes)
- Actionable Steps (3 minutes)
- Questions (5 minutes)

Project Goals

- Understand how bikes are being used by our customers
- Get a better understanding of station demand

The Data

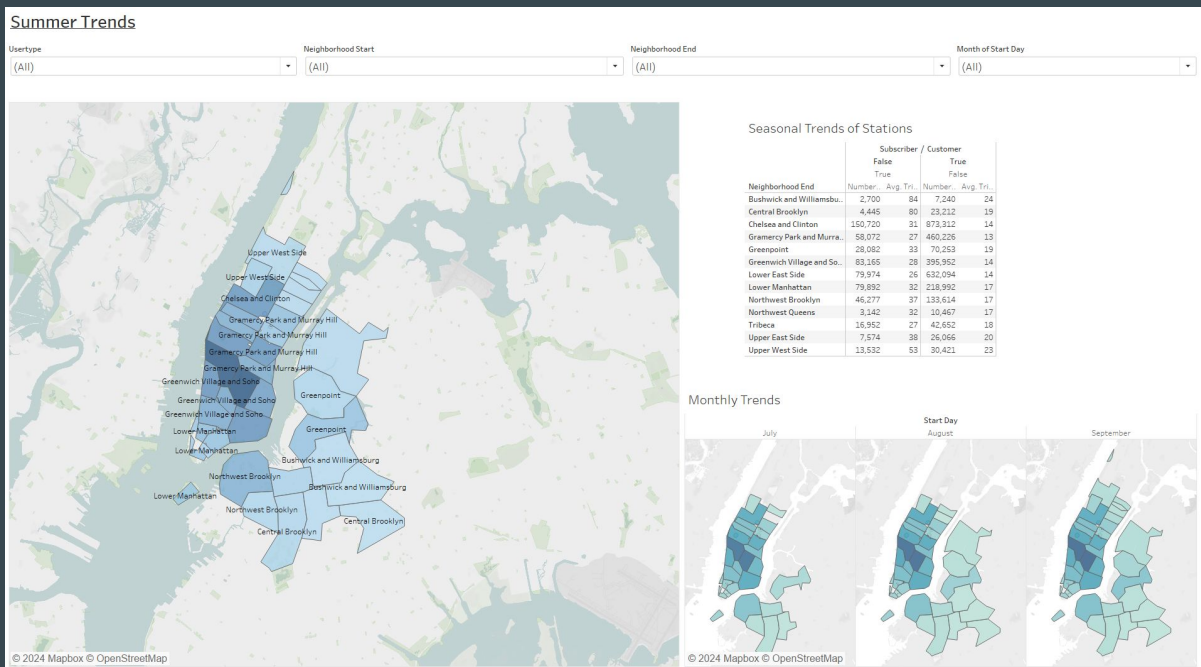
- Cyclistic Station Data
- Working within Tableau

Fields			
Type	Field Name	Physical Table	Rem...
Abc	Usertype	bq-results-20...	userty...
	Zip Code Start	bq-results-20...	zip_co...
Abc	Borough Start	bq-results-20...	borou...
Abc	Neighborhood Start	bq-results-20...	neigh...
	Zip Code End	bq-results-20...	zip_co...
Abc	Borough End	bq-results-20...	borou...
Abc	Neighborhood End	bq-results-20...	neigh...
	Start Day	bq-results-20...	start_...
	Stop Day	bq-results-20...	stop_...
#	Day Mean Temperature	bq-results-20...	day_...
#	Day Mean Wind Speed	bq-results-20...	day_...
#	Day Total Precipitation	bq-results-20...	day_t...
#	Trip Minutes	bq-results-20...	trip_m...
#	Trip Count	bq-results-20...	trip_c...

Summer Trends

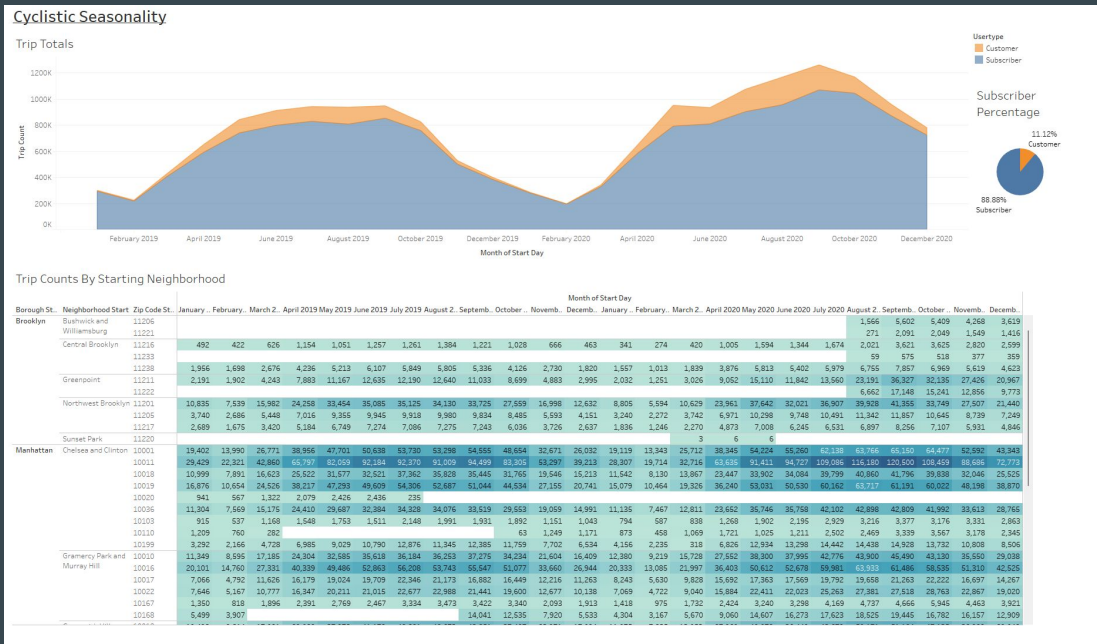
- Which neighborhoods are the most popular?

- Which have less traffic?



- Largely subscriber driven

- High trip density



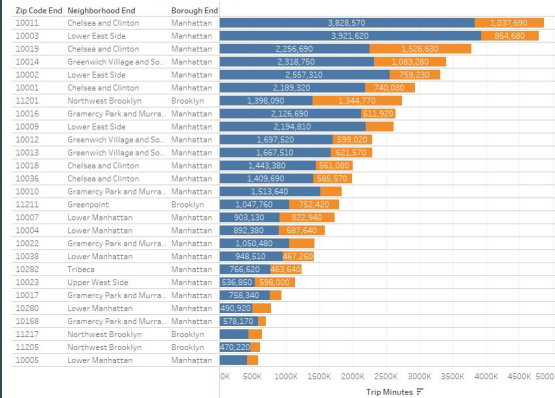
Top Locations

- Chelsea and Clinton

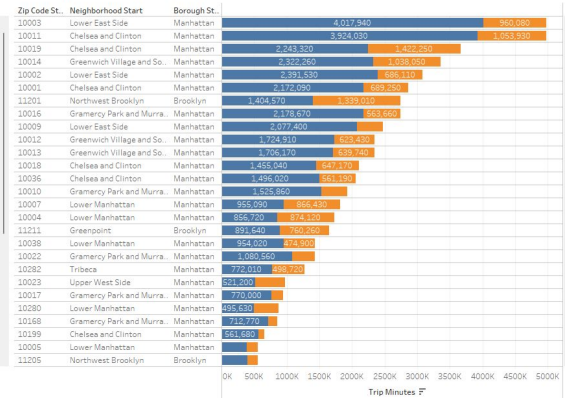
- Lower East Side

Top Locations

Total Trip Minutes By Starting Destination

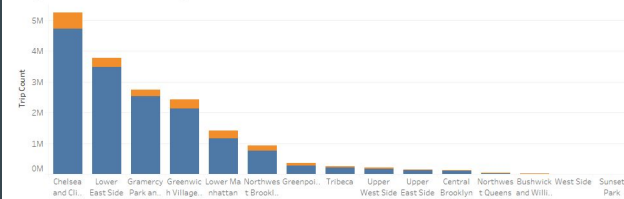


Total Trip Minutes By Ending Destination



User type
Customer
Subscriber

Neighborhoods with the Highest Travel Count



Recommendations

- Station location suggestions
- Expect seasonal dips



Questions

Any further questions?

