



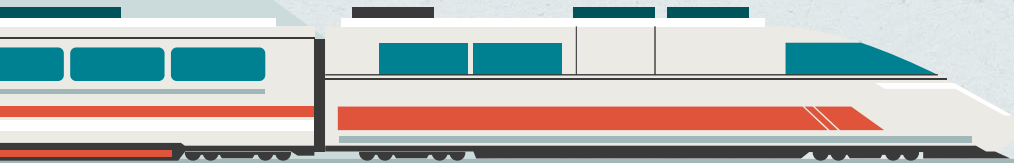
UNIVERSITY OF
MARYLAND

ROBERT H. SMITH
SCHOOL OF BUSINESS

TerpTrak Solutions: Amtrak Consulting Project

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Agenda

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03

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04

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01

Background & Information



Background



Users: Amtrak users, Amtrak employees and Stakeholders

Data Sources: The primary data for this project was sourced from the Amtrak State Fact Sheets, which provide detailed information on ridership statistics, economic impact, and state-level service details. Additionally, all the data utilized during the project has been consolidated into an Excel file for ease of access and analysis. This Excel file serves as a comprehensive repository, containing all relevant metrics and datasets used throughout the project, ensuring transparency and facilitating efficient decision-making by stakeholders.

<https://www.amtrak.com/about-amtrak/amtrak-facts/state-fact-sheets.html>



Information

Our Mission Statement: Analyze Amtrak records to identify meaningful correlations between key factors and trends over time.

Our Mission Objectives:

1. To analyze the top and bottom ten stations with the highest and lowest ridership growth, and assess how these growth trends correlate with their total procurement and budget allocations.
2. To identify states where ridership exceeded rewards participation in 2023 and analyze the differences in ridership and rewards growth between 2022 and 2023.
3. To identify the bottom fifteen routes with the lowest on-time performance (OTP), while considering other relevant factors in order to develop strategies for improving overall route efficiency and performance.
4. To evaluate the stations that have experienced a drop in ridership count compared to the usual trends, and analyze the correlation with other factors to identify potential causes and areas for improvement.

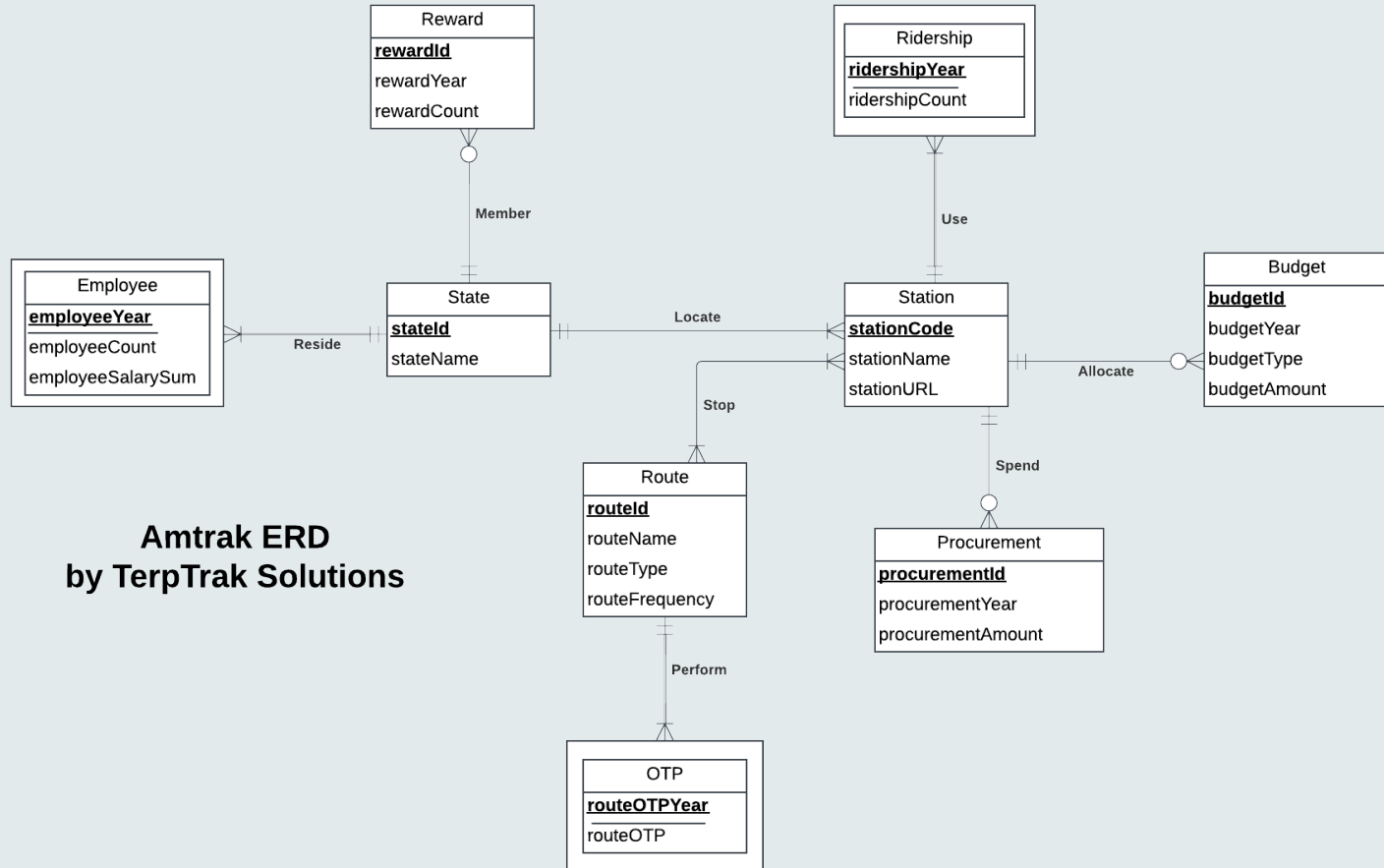


02

Conceptual Database Design



ER Diagram



03

Logical & Physical Database Design



Relational Schema

State (**stateId**, stateName)

Station (**stationCode**, stationName, stationURL, *stateId*)

Procurement (**procurementId**, procurementYear, procurementAmount, *stationCode*)

Ridership (**stationCode**, **ridershipYear**, ridershipCount)

Budget (**budgetId**, budgetYear, budgetType, budgetAmount, *stationCode*)

Route (**routeId**, routeName, routeType, routeFrequency)

Stop (**routeId**, **stationCode**)

OTP (**routeId**, **routeOTPYear**, routeOTP)

Employee (**stateId**, **employeeYear**, employeeCount, employeeSalarySum)

Reward (**rewardId**, rewardYear, rewardCount, *stateId*)

Physical Database Design

```
CREATE TABLE Procurement (  
    procurementId CHAR(3) NOT NULL,  
    procurementYear DECIMAL(4),  
    procurementAmount DECIMAL(9),  
    stationCode CHAR(3),  
    CONSTRAINT pk_Procurement_procurementId PRIMARY KEY  
    (procurementId),  
    CONSTRAINT fk_Procurement_stationCode FOREIGN KEY (stationCode)  
    REFERENCES [Station] (stationCode)  
    ON DELETE SET NULL ON UPDATE CASCADE );
```

04

Business Transactions



Question #1: Which stations have the lowest and highest ridership growth, and how does this compare to the stations total procurement and total budget allocations?

```
WITH StationRidershipGrowth AS (
  SELECT
    st.stateId,
    st.stateName,
    s.stationCode,
    s.stationName,
    (SUM(CASE WHEN ri.ridershipYear = 2023 THEN ri.ridershipCount
    ELSE 0 END) -
    SUM(CASE WHEN ri.ridershipYear = 2021 THEN ri.ridershipCount
    ELSE 0 END)) AS stationGrowth
  FROM Station s
  JOIN Ridership ri ON s.stationCode = ri.stationCode
  JOIN State st ON st.stateId = s.stateId
  WHERE ri.ridershipYear IN (2021, 2023)
  GROUP BY st.stateId, st.stateName, s.stationCode, s.stationName
  HAVING (SUM(CASE WHEN ri.ridershipYear = 2023 THEN
ri.ridershipCount ELSE 0 END) -
    SUM(CASE WHEN ri.ridershipYear = 2021 THEN ri.ridershipCount
    ELSE 0 END)) > 0
),
StationProcurement AS (
  SELECT
    s.stationCode,
    SUM(p.procurementAmount) AS totalProcurement
  FROM Station s
  JOIN Procurement p ON s.stationCode = p.stationCode
  GROUP BY s.stationCode
),
```

```
StationBudget AS (
  SELECT
    s.stationCode,
    SUM(b.budgetAmount) AS totalBudget
  FROM Station s
  JOIN Budget b ON s.stationCode = b.stationCode
  GROUP BY s.stationCode
)
SELECT TOP 10 WITH TIES
  r.stateName AS 'State Name',
  r.stationName AS 'Station Name',
  r.stationGrowth AS 'Ridership Growth',
  COALESCE(p.totalProcurement, 0) AS 'Total Procurement',
  COALESCE(b.totalBudget*1000, 0) AS 'Total Budget'
FROM StationRidershipGrowth r
LEFT JOIN StationProcurement p ON r.stationCode = p.stationCode
LEFT JOIN StationBudget b ON r.stationCode = b.stationCode
WHERE p.totalProcurement IS NOT NULL AND b.totalBudget IS NOT
NULL
ORDER BY r.stationGrowth;
```

	State Name	Station Name	Ridership Growth	Total Procurement	Total Budget
1	South Carolina	Camden	1262	933858	3496000.00
2	Arizona	Winslow	1536	150766	7804000.00
3	Colorado	La Junta	1877	1920809	3479000.00
4	Georgia	Gainesville	2321	57046457	1941000.00
5	Nevada	Elko	2365	397634	460000.00
6	Louisiana	Slidell	2402	120349	1675000.00
7	New York	Amsterdam	3092	253988	274000.00
8	South Carolina	Greenville	4296	189848	4103000.00
9	Pennsylvania	Erie	6235	85863993	300000.00
10	North Dakota	Fargo	7035	67576795	2882000.00



Question #1: Which stations have the lowest and highest ridership growth, and how does this compare to the stations total procurement and total budget allocations?

```
WITH StationRidershipGrowth AS (  
  SELECT  
    st.stateId,  
    st.stateName,  
    s.stationCode,  
    s.stationName,  
    (SUM(CASE WHEN ri.ridershipYear = 2023 THEN ri.ridershipCount  
ELSE 0 END) -  
    SUM(CASE WHEN ri.ridershipYear = 2021 THEN ri.ridershipCount  
ELSE 0 END)) AS stationGrowth  
  FROM Station s  
  JOIN Ridership ri ON s.stationCode = ri.stationCode  
  JOIN State st ON st.stateId = s.stateId  
  WHERE ri.ridershipYear IN (2021, 2023)  
  GROUP BY st.stateId, st.stateName, s.stationCode, s.stationName  
  HAVING (SUM(CASE WHEN ri.ridershipYear = 2023 THEN  
ri.ridershipCount ELSE 0 END) -  
    SUM(CASE WHEN ri.ridershipYear = 2021 THEN ri.ridershipCount  
ELSE 0 END)) > 0  
)  
StationProcurement AS (  
  SELECT  
    s.stationCode,  
    SUM(p.procurementAmount) AS totalProcurement  
  FROM Station s  
  JOIN Procurement p ON s.stationCode = p.stationCode  
  GROUP BY s.stationCode  
)
```

```
StationBudget AS (  
  SELECT  
    s.stationCode,  
    SUM(b.budgetAmount) AS totalBudget  
  FROM Station s  
  JOIN Budget b ON s.stationCode = b.stationCode  
  GROUP BY s.stationCode  
)  
SELECT TOP 10 WITH TIES  
  r.stateName AS 'State Name',  
  r.stationName AS 'Station Name',  
  r.stationGrowth AS 'Ridership Growth',  
  COALESCE(p.totalProcurement, 0) AS 'Total Procurement',  
  COALESCE(b.totalBudget*1000, 0) AS 'Total Budget'  
FROM StationRidershipGrowth r  
LEFT JOIN StationProcurement p ON r.stationCode = p.stationCode  
LEFT JOIN StationBudget b ON r.stationCode = b.stationCode  
WHERE p.totalProcurement IS NOT NULL AND b.totalBudget IS NOT  
NULL  
ORDER BY r.stationGrowth desc;
```

	State Name	Station Name	Ridership Growth	Total Procurement	Total Budget
1	Illinois	Chicago-Union Station	1385923	317412916	9256000.00
2	California	Los Angeles-Union Station	533826	78792575	237000.00
3	Rhode Island	Providence	405704	1008871	302000.00
4	Delaware	Wilmington	397454	58247777	758000.00
5	California	Emeryville	307431	157643	528000.00
6	Pennsylvania	Lancaster	200967	2233340	606000.00
7	California	Oakland-Jack London S...	101474	985132	824000.00
8	California	Richmond	94123	2886026	3000000.00
9	Missouri	Kansas City-Union Station	61583	15797971	8374000.00
10	New York	Syracuse-Regional Tran...	60013	1518208	0.00

Question #1: Which stations have the lowest and highest ridership growth, and how does this compare to the stations total procurement and total budget allocations?

Which stations have the lowest and highest ridership growth, and how does this compare to the stations total procurement and total budget allocations?



Station Name
 Amsterdam
 Camden
 Elko
 Erie
 Gainesville
 Greenville
 La Junta
 Slidell
 Winslow

Which stations have the lowest and highest ridership growth, and how does this compare to the stations total procurement and total budget allocations?



Station Name
 Chicago-Union St.
 Emeryville
 Kansas City-Union S.
 Lancaster
 Los Angeles-Union S.
 Oakland-Jack Londo.
 Providence
 Richmond
 Syracuse-Regional T.
 Wilmington



Our Findings/Recommendations

Our Findings:

- Higher budgets show a weak correlation with ridership growth, as seen in Chicago Union, while stations like Camden highlight inefficiencies despite high spending.

Our Recommendations

- 1. Targeted Improvements:** Analyze and address inefficiencies at underperforming stations to optimize budget use.
- 2. Strategic Budget Allocation:** Focus funds on stations with growth potential while resolving issues at high-budget, low-growth locations.
- 3. Monitor Spending:** Track budget performance to ensure effective use and ridership impact.

Question #2: What are the states where ridership exceeded rewards participation in 2023, and how do the differences between ridership and rewards compare across 2022 and 2023?

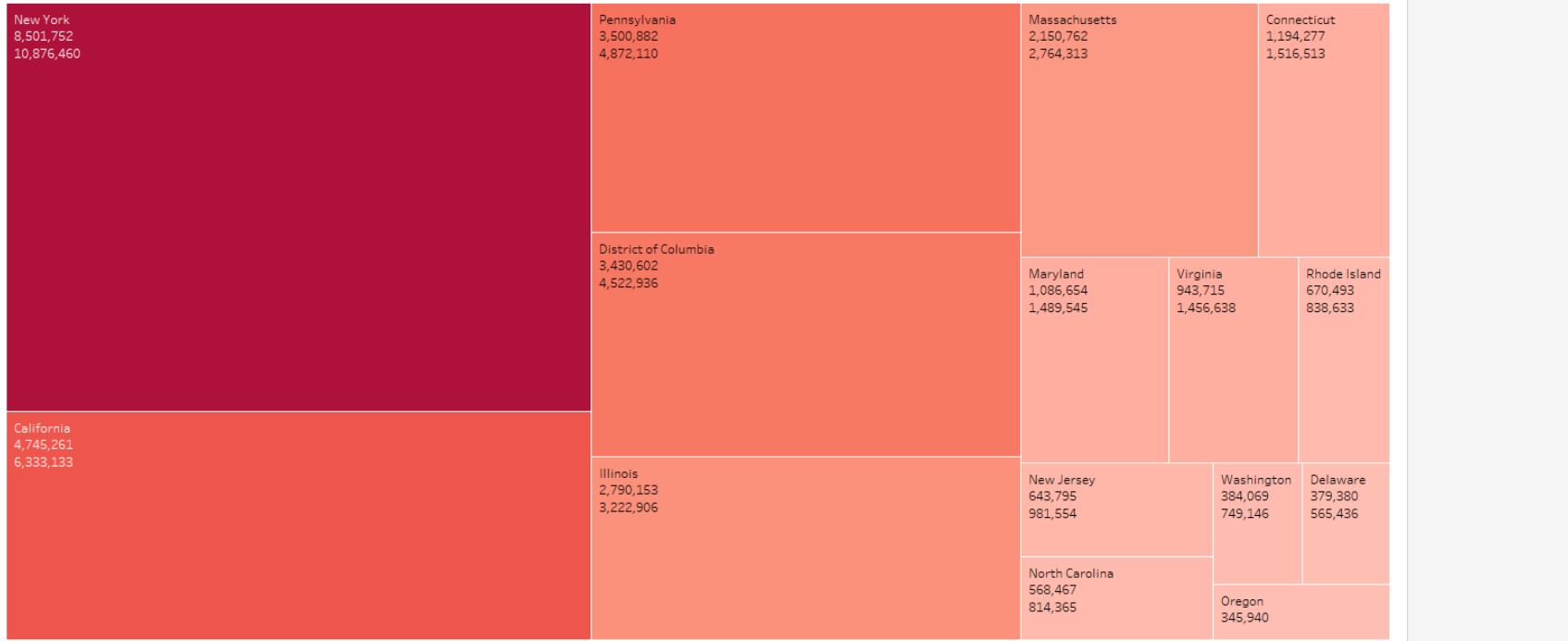
```

;WITH AggregatedRidership AS (
    SELECT
        st.stateId,
        SUM(CASE WHEN ri.ridershipYear = 2022 THEN ri.ridershipCount ELSE 0 END) AS
ridership2022,
        SUM(CASE WHEN ri.ridershipYear = 2023 THEN ri.ridershipCount ELSE 0 END) AS
ridership2023
    FROM Ridership ri
    JOIN Station st ON ri.stationCode = st.stationCode
    GROUP BY st.stateId
),
AggregatedRewards AS (
    SELECT
        r.stateId,
        SUM(CASE WHEN r.rewardYear = 2022 THEN r.rewardCount ELSE 0 END) AS
rewards2022,
        SUM(CASE WHEN r.rewardYear = 2023 THEN r.rewardCount ELSE 0 END) AS
rewards2023
    FROM Reward r
    GROUP BY r.stateId
)
SELECT TOP 15 WITH TIES
    s.stateName AS 'State Name',
    CAST(ridership.ridership2022 AS INT) AS 'Ridership 2022',
    CAST(rewards.rewards2022 AS INT) AS 'Rewards 2022',
    CAST(ridership.ridership2022 - rewards.rewards2022 AS INT) AS 'Difference 2022',
    CAST(ridership.ridership2023 AS INT) AS 'Ridership 2023',
    CAST(rewards.rewards2023 AS INT) AS 'Rewards 2023',
    CAST(ridership.ridership2023 - rewards.rewards2023 AS INT) AS 'Difference 2023'
FROM State s
JOIN AggregatedRidership ridership ON s.stateId = ridership.stateId
JOIN AggregatedRewards rewards ON s.stateId = rewards.stateId
WHERE ridership.ridership2023 > rewards.rewards2023
ORDER BY 'Difference 2023' DESC;
    
```

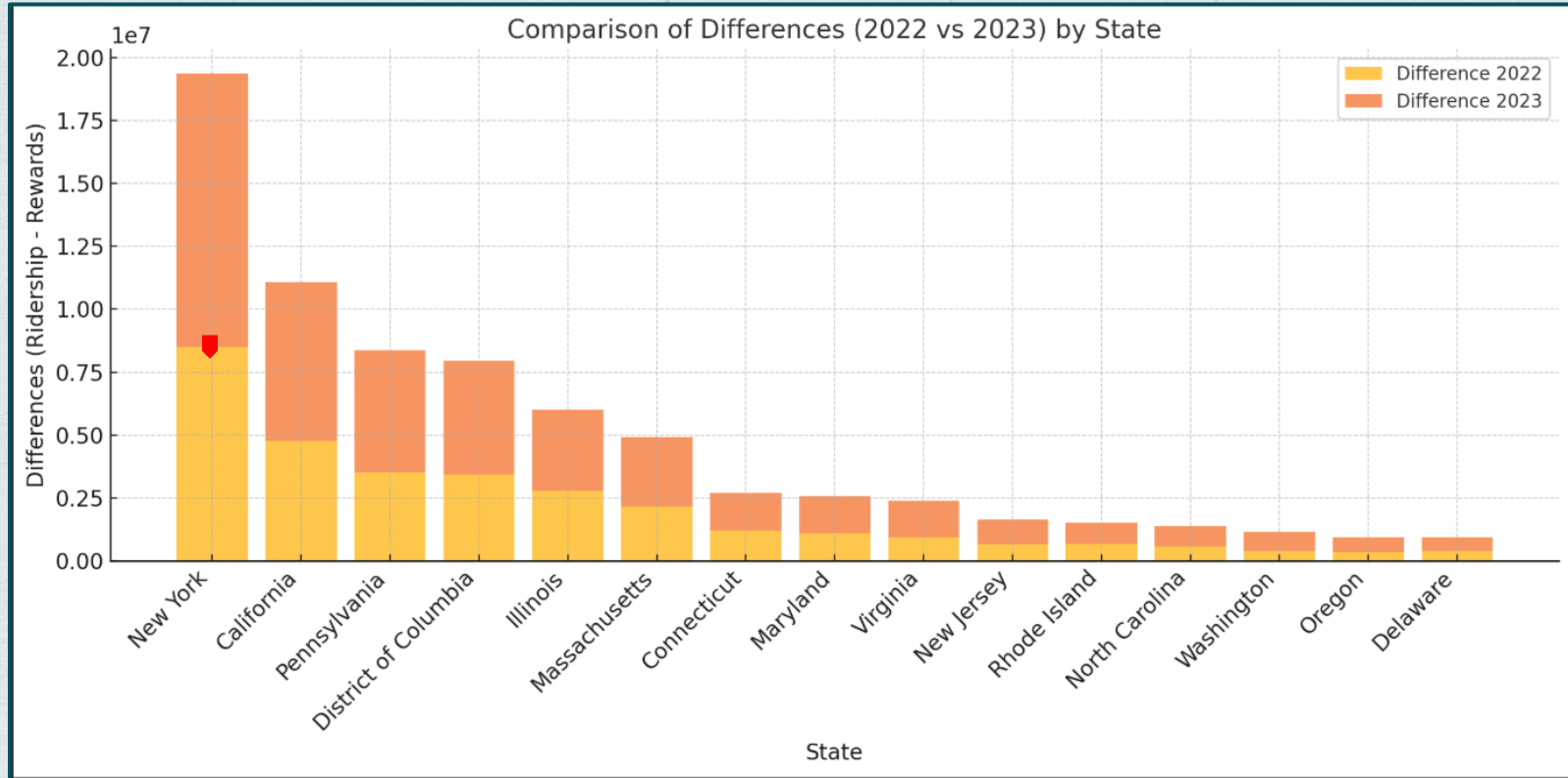
	State Name	Ridership 2022	Rewards 2022	Difference 2022	Ridership 2023	Rewards 2023	Difference 2023
1	New York	9888379	1386627	8501752	12454331	1577871	10876460
2	California	6420985	1675724	4745261	8207740	1874607	6333133
3	Pennsylvania	4182216	681334	3500882	5647603	775493	4872110
4	District of Columbia	3631677	201075	3430602	4751405	228469	4522936
5	Illinois	3389218	599065	2790153	3898203	675297	3222906
6	Massachusetts	2679581	528819	2150762	3375479	611166	2764313
7	Connecticut	1448437	254160	1194277	1808203	291690	1516513
8	Maryland	1575986	489332	1086654	2053928	564383	1489545
9	Virginia	1578326	634611	943715	2194700	738062	1456638
10	New Jersey	1173868	530073	643795	1576582	595028	981554
11	Rhode Island	756776	86283	670493	939329	100696	838633
12	North Carolina	863006	294539	568467	1156546	342181	814365
13	Washington	711588	327519	384069	1120025	370879	749146
14	Oregon	546938	200998	345940	814805	228222	586583
15	Delaware	456001	76621	379380	654717	89281	565436

Question #2: What are the states where ridership exceeded rewards participation in 2023, and how do the differences between ridership and rewards compare across 2022 and 2023?

What are the states where ridership exceeded rewards participation in 2023, and how do the differences between ridership and rewards compare across 2022 and 2023?



Graph Between Difference 2022 and Difference 2023



Our Findings/Recommendations

Our Findings:

- Larger gaps between ridership and rewards participation in states that have a higher population
 - Ex. New York & California

Our Recommendations

1. Marketing Strategies
 - a. Investing in market research - target high population Stations
 - b. Develop marketing strategies
2. Add incentives to joining the rewards program for frequent users
 - a. Ex. Miles program – for x amount of miles you can get x miles to use for your next trip
3. Physical signage at stations
 - a. Signs around Amtrak stations so users can see that there is a reward system available



Question 3: Which are the bottom fifteen routes with the lowest on-time performance (OTP), and what factors contribute to their low performance?

```

WITH RoutePerformanceByYear AS (
  SELECT
    r.routeName,
    r.routeType,
    r.routeFrequency,
    MAX(CASE WHEN o.routeOTPYear = 2021 THEN o.routeOTP ELSE NULL END) AS routeOTP2021,
    MAX(CASE WHEN o.routeOTPYear = 2022 THEN o.routeOTP ELSE NULL END) AS routeOTP2022,
    MAX(CASE WHEN o.routeOTPYear = 2023 THEN o.routeOTP ELSE NULL END) AS routeOTP2023
  FROM
    OTP o
  JOIN
    Route r ON o.routeld = r.routeld
  GROUP BY
    r.routeld, r.routeName, r.routeType, r.routeFrequency
)
SELECT TOP 15 WITH TIES
  r.routeName AS 'Route Name',
  r.routeType AS 'Route Type',
  COALESCE(r.routeFrequency, 'Not available') AS 'Route Frequency',
  FORMAT(r.routeOTP2021 * 100, 'N2') + '%' AS 'Route FY21 OTP',
  CASE
    WHEN r.routeOTP2022 > r.routeOTP2021 THEN 'Increase'
    WHEN r.routeOTP2022 < r.routeOTP2021 THEN 'Decrease'
    ELSE 'No Change'
  END AS 'Route Trend (FY21-FY22)',
  FORMAT(r.routeOTP2022 * 100, 'N2') + '%' AS 'Route FY22 OTP',

```

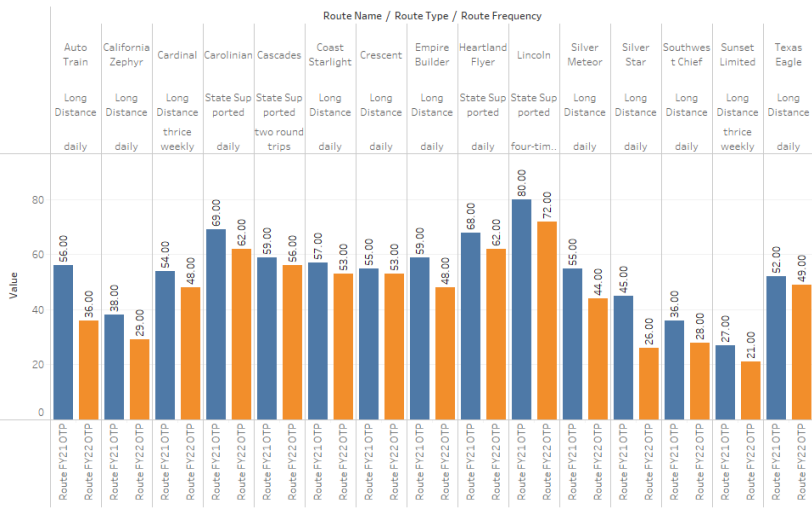
```

CASE
  WHEN r.routeOTP2023 > r.routeOTP2022 THEN 'Increase'
  WHEN r.routeOTP2023 < r.routeOTP2022 THEN 'Decrease'
  ELSE 'No Change'
END AS 'Route Trend (FY22-FY23)',
FORMAT(r.routeOTP2023 * 100, 'N2') + '%' AS 'Route FY23 OTP',
CASE
  WHEN r.routeOTP2023 > r.routeOTP2021 THEN 'Increase'
  WHEN r.routeOTP2023 < r.routeOTP2021 THEN 'Decrease'
  ELSE 'No Change'
END AS 'Route Trend (FY21-FY23)'
FROM
  RoutePerformanceByYear r
WHERE
  r.routeOTP2021 IS NOT NULL
  AND r.routeOTP2022 IS NOT NULL
  AND r.routeOTP2023 IS NOT NULL
ORDER BY 'Route FY23 OTP' ASC;

```

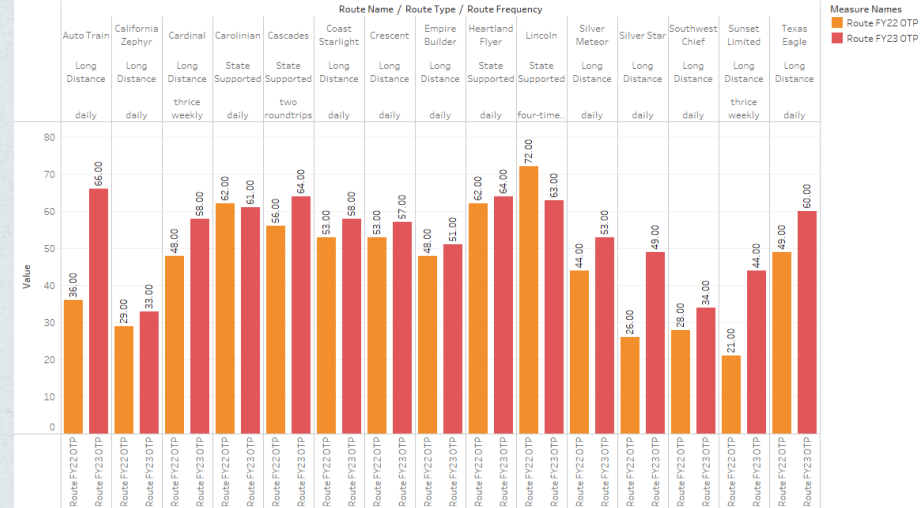
	Route Name	Route Type	Route Frequency	Route FY21 OTP	Route Trend (FY21-FY22)	Route FY22 OTP	Route Trend (FY22-FY23)	Route FY23 OTP	Route Trend (FY21-FY23)
1	California Zephyr	Long Distance	daily	38.00%	Decrease	29.00%	Increase	33.00%	Decrease
2	Southwest Chief	Long Distance	daily	36.00%	Decrease	28.00%	Increase	34.00%	Decrease
3	Sunset Limited	Long Distance	thrice weekly	27.00%	Decrease	21.00%	Increase	44.00%	Increase
4	Silver Star	Long Distance	daily	45.00%	Decrease	26.00%	Increase	49.00%	Increase
5	Empire Builder	Long Distance	daily	59.00%	Decrease	48.00%	Increase	51.00%	Decrease
6	Silver Meteor	Long Distance	daily	55.00%	Decrease	44.00%	Increase	53.00%	Decrease
7	Crescent	Long Distance	daily	55.00%	Decrease	53.00%	Increase	57.00%	Increase
8	Coast Starlight	Long Distance	daily	57.00%	Decrease	53.00%	Increase	58.00%	Increase
9	Cardinal	Long Distance	thrice weekly	54.00%	Decrease	48.00%	Increase	58.00%	Increase
10	Texas Eagle	Long Distance	daily	52.00%	Decrease	49.00%	Increase	60.00%	Increase
11	Carolinnian	State Supported	daily	69.00%	Decrease	62.00%	Decrease	61.00%	Decrease
12	Lincoln	State Supported	four-times-daily	80.00%	Decrease	72.00%	Decrease	63.00%	Decrease
13	Heartland Flyer	State Supported	daily	68.00%	Decrease	62.00%	Increase	64.00%	Decrease
14	Cascades	State Supported	two roundtrips	59.00%	Decrease	56.00%	Increase	64.00%	Increase
15	Auto Train	Long Distance	daily	56.00%	Decrease	36.00%	Increase	66.00%	Increase

Which are the bottom fifteen routes with the lowest on-time performance (OTP), and what factors contribute to their low performance?



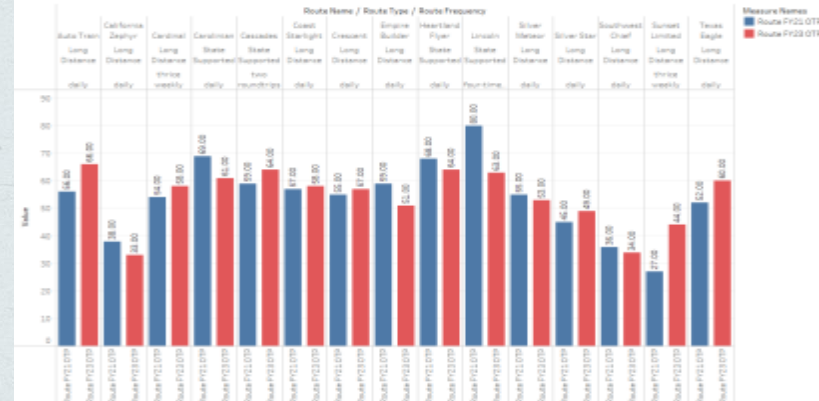
Route FY21 OTP and Route FY22 OTP for each Route Frequency broken down by Route Name and Route Type. Color shows details about Route FY21 OTP and Route FY22 OTP. The view is filtered on Route Name, which has multiple members selected.

Which are the bottom fifteen routes with the lowest on-time performance (OTP), and what factors contribute to their low performance?



Route FY22 OTP and Route FY23 OTP for each Route Frequency broken down by Route Name and Route Type. Color shows details about Route FY22 OTP and Route FY23 OTP. The view is filtered on Route Name, which has multiple members selected.

Which are the bottom fifteen routes with the lowest on-time performance (OTP), and what factors contribute to their low performance?



Route FY21 OTP and Route FY23 OTP for each Route Frequency broken down by Route Name and Route Type. Color shows details about Route FY21 OTP and Route FY23 OTP. The view is filtered on Route Name, which has multiple members selected.

Our Findings/Recommendations

Our Findings:

- Long-distance routes face cascading delays, daily routes show gradual improvement, and several routes saw declining OTP from FY21 to FY23

Our Recommendations

- 1. Analyze delay factors:** Identify specific causes of delays, distinguishing between environmental and human-related issues.
- 2. Implement preventative measures:** Develop strategies to reduce delays and enhance customer satisfaction.
- 3. Optimize scheduling:** Adjust schedules with adequate buffer times to mitigate potential delays and maintain reliability.



Question 4: Which stations saw a drop in ridership from 2022 to 2023, how did their ridership change from 2021 to 2022, and what trends can help explain these changes?

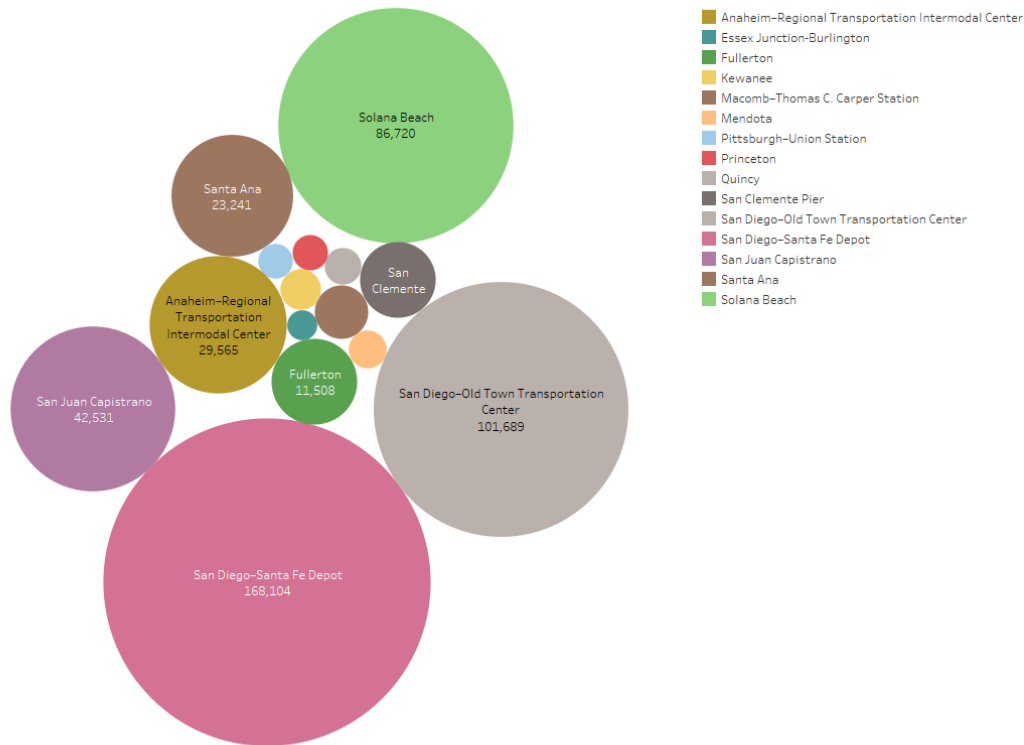
```
WITH RidershipComparison AS (
  SELECT
    r.stationCode,
    st.stationName,
    SUM(CASE WHEN r.ridershipYear = 2021 THEN r.ridershipCount ELSE 0 END) AS ridership2021,
    SUM(CASE WHEN r.ridershipYear = 2022 THEN r.ridershipCount ELSE 0 END) AS
ridership2022,
    SUM(CASE WHEN r.ridershipYear = 2023 THEN r.ridershipCount ELSE 0 END) AS ridership2023
  FROM
    Ridership r
  LEFT JOIN
    Station st ON r.stationCode = st.stationCode
  GROUP BY
    r.stationCode, st.stationName
)
SELECT TOP 15 WITH TIES
  rc.stationName AS 'Station Name',
  rc.ridership2021 AS 'FY21 Ridership',
  ABS(rc.ridership2021 - rc.ridership2022) AS 'Ridership Change (FY21-FY22)',
```

```
CASE
  WHEN rc.ridership2022 > rc.ridership2021 THEN 'Increase'
  WHEN rc.ridership2022 < rc.ridership2021 THEN 'Decrease'
  ELSE 'No Change'
END AS 'Ridership Trend (FY21-FY22)',
rc.ridership2022 AS 'FY22 Ridership',
  ABS(rc.ridership2022 - rc.ridership2023) AS
'Ridership Change (FY22-FY23)',
CASE
  WHEN rc.ridership2023 > rc.ridership2022 THEN 'Increase'
  WHEN rc.ridership2023 < rc.ridership2022 THEN 'Decrease'
  ELSE 'No Change'
END AS 'Ridership Trend (FY22-FY23)',
rc.ridership2023 AS 'FY23 Ridership'
FROM
  RidershipComparison rc
WHERE
  rc.ridership2023 < rc.ridership2022
ORDER BY
  'Ridership Change (FY22-FY23)' DESC;
```

	Station Name	FY21 Ridership	Ridership Change (FY21-FY22)	Ridership Trend (FY21-FY22)	FY22 Ridership	Ridership Change (FY22-FY23)	Ridership Trend (FY22-FY23)	FY23 Ridership
1	San Diego-Santa Fe Depot	235775	207316	Increase	443091	168104	Decrease	274987
2	San Diego-Old Town Transportation Center	113163	140454	Increase	253617	101689	Decrease	151928
3	Solana Beach	94621	81468	Increase	176089	86720	Decrease	89369
4	San Juan Capistrano	71260	46266	Increase	117526	42531	Decrease	74995
5	Anaheim-Regional Transportation Intermodal Center	71651	87145	Increase	158796	29565	Decrease	125231
6	Santa Ana	50733	45121	Increase	95854	23241	Decrease	72613
7	Fullerton	86618	85512	Increase	172130	11508	Decrease	160622
8	San Clemente Pier	7563	6544	Increase	14107	8997	Decrease	5110
9	Macomb-Thomas C. Caper Station	25707	15968	Increase	41675	4476	Decrease	37199
10	Keweenaw	6588	5485	Increase	12073	2587	Decrease	9486
11	Mendota	9002	5890	Increase	14892	2245	Decrease	12647
12	Quincy	14450	10590	Increase	25040	2112	Decrease	22528
13	Princeton	12441	9446	Increase	21887	1969	Decrease	19918
14	Pittsburgh-Union Station	71015	46951	Increase	117966	1882	Decrease	116084
15	Essex Junction-Burlington	4091	13321	Increase	17412	1411	Decrease	16001

Question 4: Which stations saw a drop in ridership from 2022 to 2023, how did their ridership change from 2021 to 2022, and what trends can help explain these changes?

Which stations saw a drop in ridership from 2022 to 2023, how did their ridership change from 2021 to 2022, and what trends can help explain these changes?



Station Name and Change (FY22-FY23). Color shows details about Station Name. Size shows Change (FY22-FY23). The marks are labeled by Station Name and Change (FY22-FY23). The data is filtered on Rank of Change (FY22-FY23), which ranges from 1 to 15. The view is filtered on Station Name, which keeps 49 of 510 members.

Our Findings/Recommendations

Our Findings:

- Several stations experienced a significant drop in ridership from FY22 to FY23, despite prior growth from FY21 to FY22.
 - ex: San Diego–Santa Fe Depot and San Diego–Old Town Transportation Center

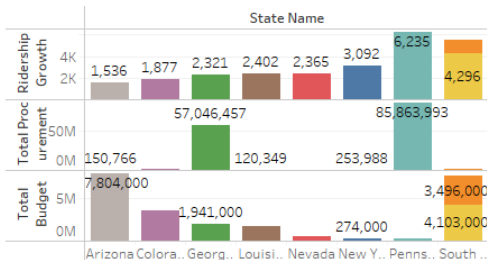
Our Recommendations

- 1. Analyze delay factors:** Identify specific causes of delays, distinguishing between environmental and human-related issues.
- 2. Implement preventative measures:** Develop strategies to reduce delays and enhance customer satisfaction.
- 3. Optimize scheduling:** Adjust schedules with adequate buffer times to mitigate potential delays and maintain reliability.

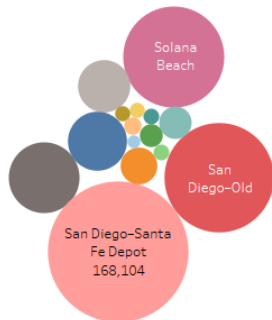


Dashboard

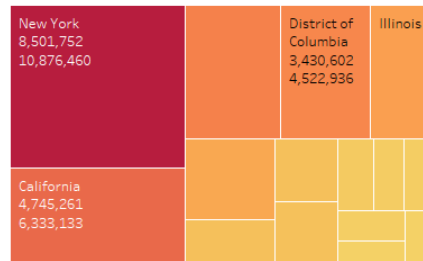
Which stations have the lowest and highest ridership growth, and how does this compare to the stations total procurement and total budget allocations?



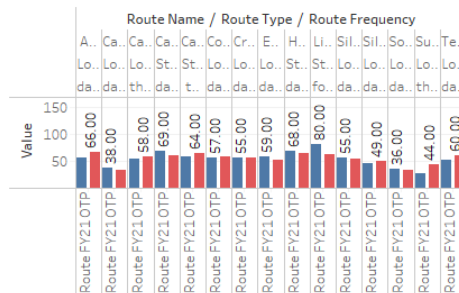
Which stations saw a drop in ridership from 2022 to 2023, how did their ridership change from 2021 to 2022?



What are the states where ridership exceeded rewards participation in 2023, and how do the differences between ridership and rewards compare across 2022 and 2023?



Which are the bottom fifteen routes with the lowest on-time performance (OTP), and what factors contribute to their low performance?



Thank You!

