MAKING CONNECTIONS, MAKING A DIFFERENCE

Making Connections 2024
The National Transit Workforce Conference
November 11 – 13, 2024 · Baltimore, MD

TWC
TRANSIT WORKFORCE CENTER

Tracking Your Impact

How Agencies and Unions Analyze and Use Workforce Data

What works in (re)building workforce?
Using data to track Metro Transit (MN) bus operator recruiting, hiring, and retention

Dr. Shanta Hejmadi | Senior Data Scientist
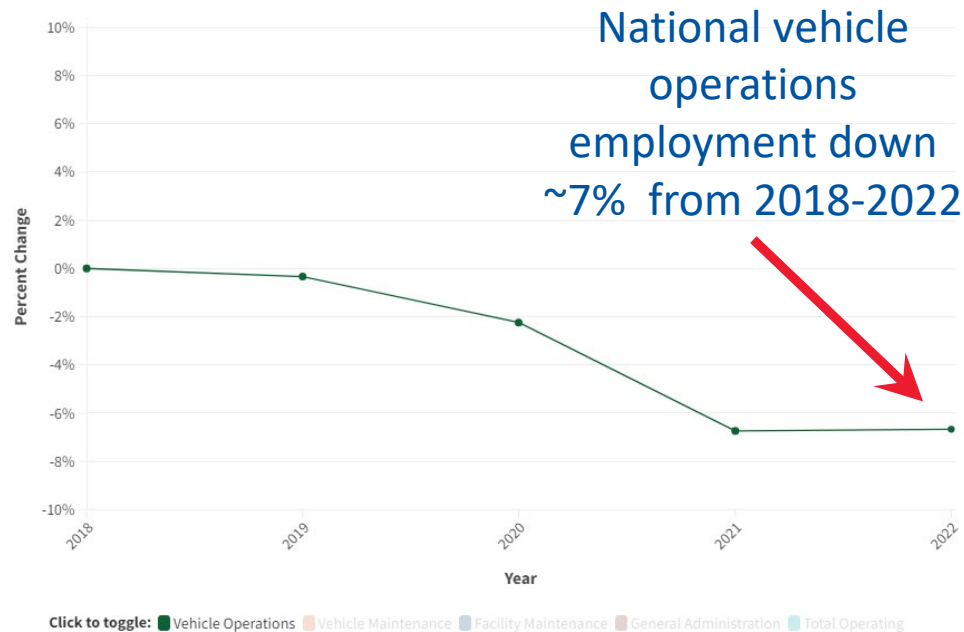
Dr. Rachael Jones | Senior Researcher

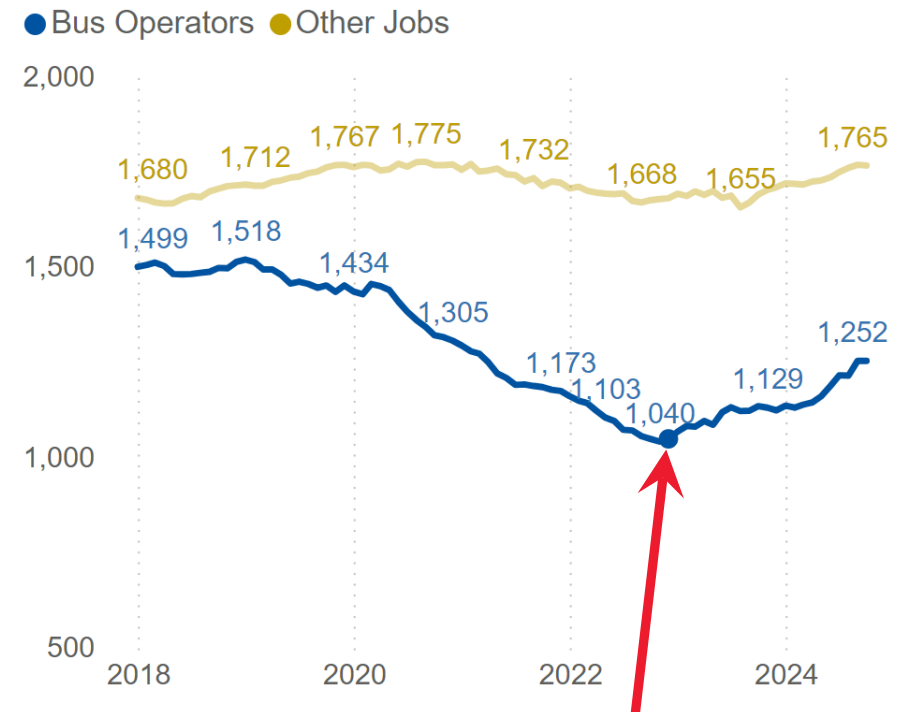Making Connections 2024: Transit Workforce Conference November 13, 2024

metrotransit.org

Operator workforce shortage is everywhere

Percent Change in Employment by Job Function from 2018 to 2022

National vehicle operations employment down ~7% from 2018-2022

Metro Transit -Bus Ops vs All Other Jobs

● Bus Operators ● Other Jobs

Bus Operator headcount down 30% Jan 2018 - Dec 2022

Transit Workforce Data Dashboard - Transit Workforce Center

Making use of your organization's ~~data~~ treasure

- Case Study 1: Application and Recruiting Process
  - Neogov Applicant Data

- Case Study 2: Employment trends
  - PeopleSoft HCM data

- How useful is our treasure? (data governance)

Workforce Data

How mature is your Data Governance? (How useful is your treasure?)

✅ Accurate: Data are what we think they are, and they reliably represent reality.

✅ Accessible: Data are in a database that can be queried and access is user-appropriate.

✅ Repeatable: Data, processing, and analysis are in version-controlled code that can be automated and run by someone other than the coder.

✅ Interoperable: Fields that mean the same thing are the same across organizational data resources.

✅ Secure: private data is protected from unauthorized use.

Case Study 1: Recruiting and Hiring

How to hire 400 operators in 12 months

- Increase wages ($28.84 starting)

- Hiring & Referral bonus (up to $5K)

- Marketing campaign (advertise increased wages)

- Reduce minimum qualifications (no HS diploma, 5 yrs good driving record)

- Mass application/interviewing events

- Paid training to obtain CLP ("Week Zero")

New Operator Interviews

Applicant Data

Evaluate application & hiring process

HR staff manually pulls data from Web interface GUI

↓

Email .csv file to Shanta

↓

Ingest data, a bunch of cleaning code so that the
aggregation code works (format of text fields, etc.)

↓

Remove Duplicate Applicants

↓

Merge with hires to add rows for Hired applicants

↓

Filter to one requisition (job posting)

↓

Analyze one requisition

Data Flow for NeoGov Applicant Data

Data Governance Scorecard: How useful is our treasure?

Applicant Data

Somewhat accurate

Requires a lot of cleaning, and hires not always accurate

Not accessible

Data not stored in a queryable database, Analysts do not have access.

Not easily repeatable

Highly manual data flows involving spreadsheets, email, & unique cleaning protocols.

Somewhat interoperable

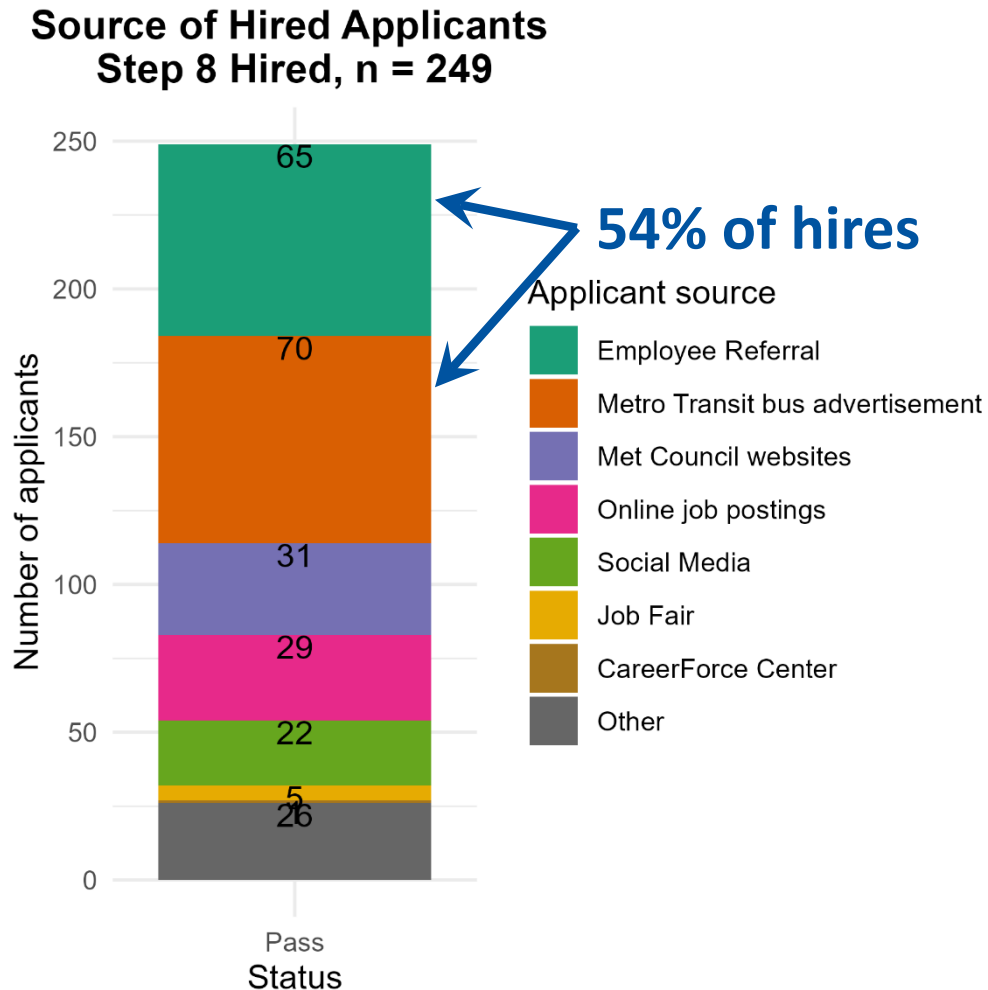Certain fields translate across systems, many do not.

Secure

Only a few staff can access data (trade-off between security vs. accessibility)
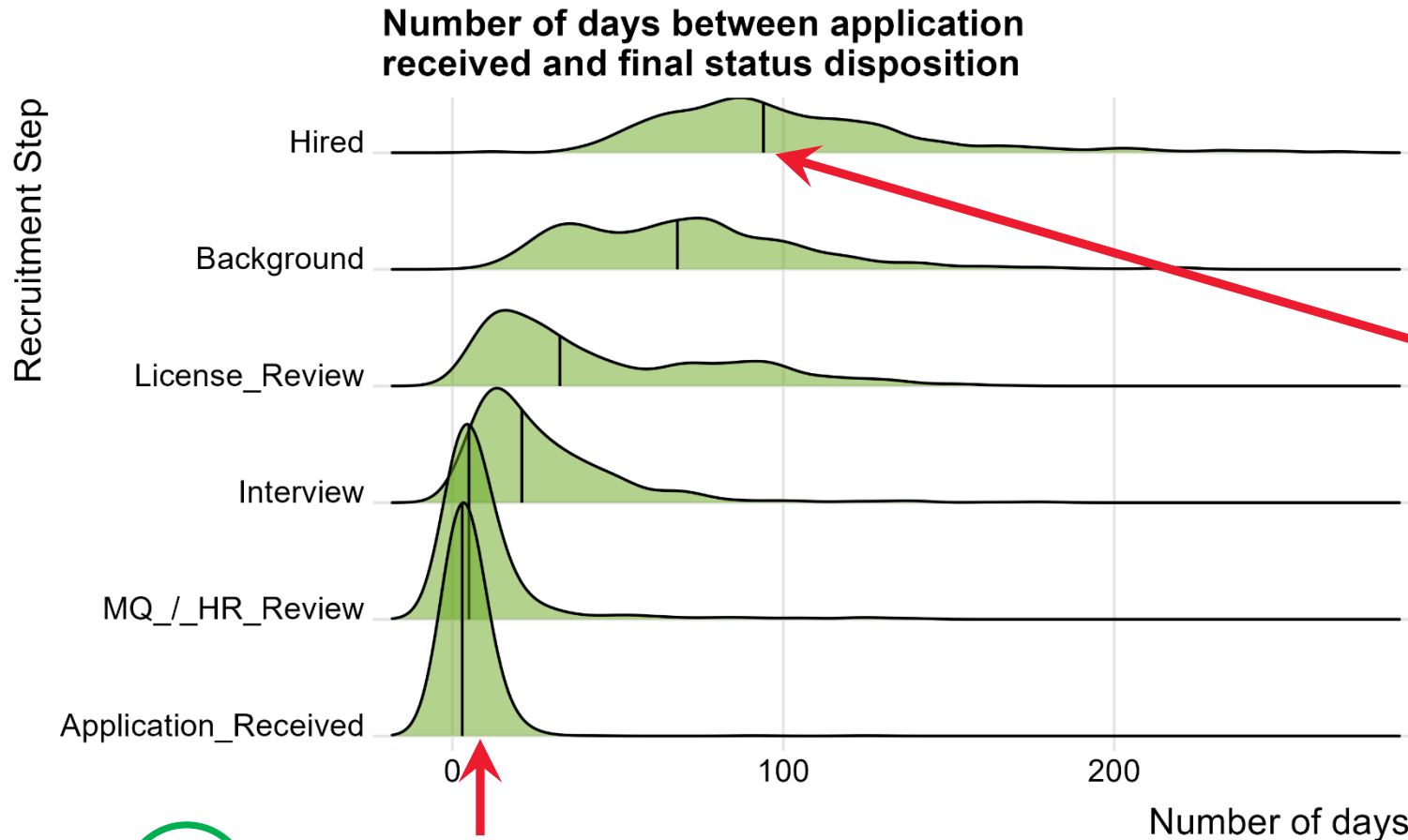
Applicant Data:
Employee referrals and Bus advertisements are the top sources of successful candidates

Source of Hired Applicants
Step 8 Hired, n = 249

54% of hires

Applicant source
- Employee Referral
- Metro Transit bus advertisement
- Met Council websites
- Online job postings
- Social Media
- Job Fair
- CareerForce Center
- Other

(Chart values, top to bottom: 65, 70, 31, 29, 22, 5, 2, 26)

Number of applicants / Pass Status

- Employees are valuable recruiters

- Advertising campaigns are effective

- Validated by interviews with new operators

Applicant Data:
Applying is easy, waiting is hard.

Number of days between application received and final status disposition

Stat	Value	
N applicants Jan-Aug 2023	1510	😎
Median time to hire	92 days	☹️
% applicants who lost interest	41%*	☹️

HR reviews applications very quickly

* 32% of interviewed new operators nearly gave up

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Treasure from a snapshot of recruiting processes

😎 Raising pay is effective.

😎 Marketing campaigns are effective.

😎 Employees are valuable recruiters.

😎 Streamlining of application process was effective.

☹️ Post-application recruiting processes could be streamlined to reduce applicant waiting times.

😎 Applicant + Interview data gave us both "what" and "why".
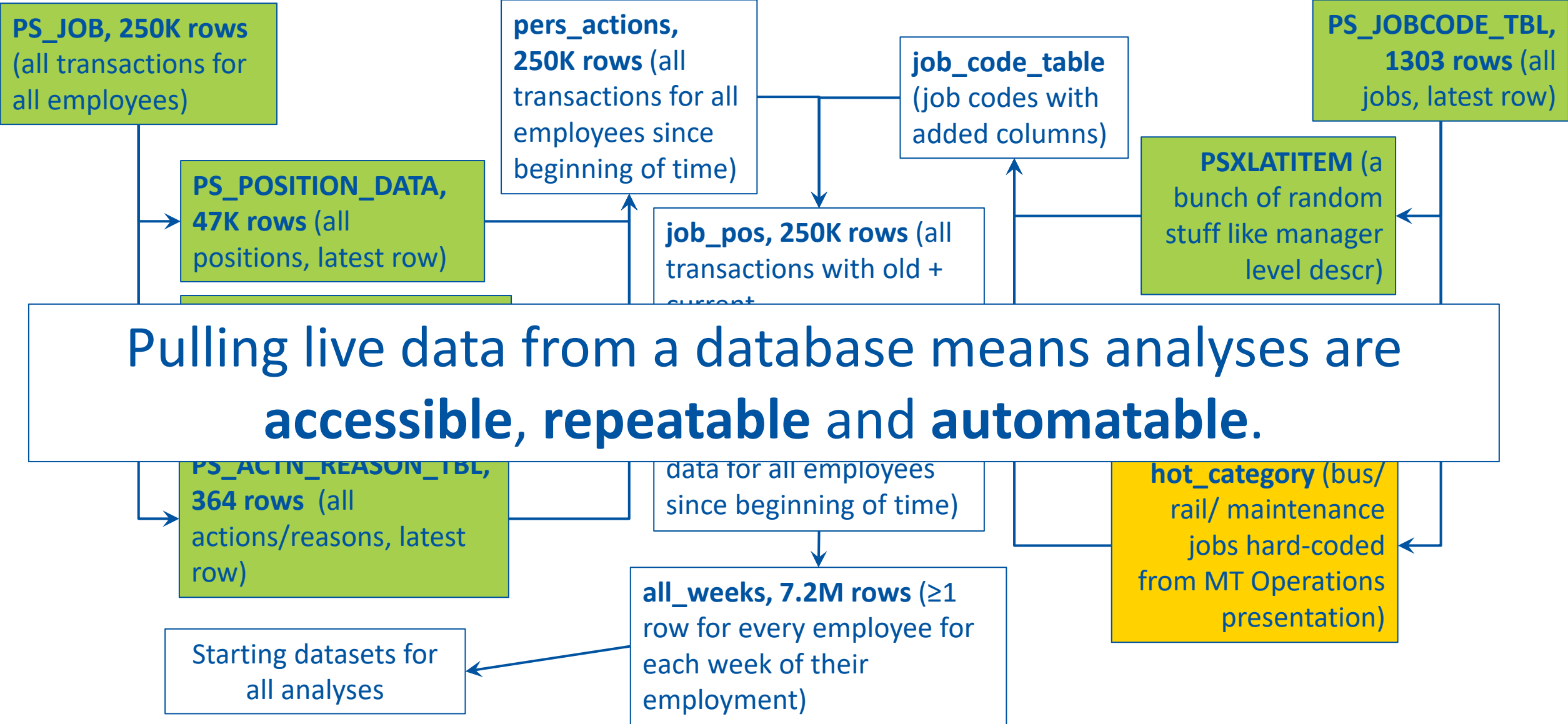

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Case Study 2: Employment trends

Workforce Planning and Retention

- Network now: commitment by Dec 2027 to
  - Increase service 35%
  - Bus operator workforce +280

- Develop metrics to track key employment trends
  - Hires
  - Departures
  - Promotions and transfers
  - Retention

PS_JOB, 250K rows (all transactions for all employees)

pers_actions, 250K rows (all transactions for all employees since beginning of time)

job_code_table (job codes with added columns)

PS_JOBCODE_TBL, 1303 rows (all jobs, latest row)

PS_POSITION_DATA, 47K rows (all positions, latest row)

PSXLATITEM (a bunch of random stuff like manager level descr)

job_pos, 250K rows (all transactions with old + current…

Pulling live data from a database means analyses are **accessible**, **repeatable** and **automatable**.

PS_ACTN_REASON_TBL, 364 rows (all actions/reasons, latest row)

…data for all employees since beginning of time)

hot_category (bus/ rail/ maintenance jobs hard-coded from MT Operations presentation)

Starting datasets for all analyses

all_weeks, 7.2M rows (≥1 row for every employee for each week of their employment)

Data Flow from PeopleSoft HCM

Data Governance Scorecard: How useful is our treasure?

Peoplesoft HCM Data

Accurate

Official system of record for personnel data and transactions.

Moderately accessible

Raw data are stored in a queryable database, analysts have access*, cleaned and final data are not currently stored.

Repeatable

Version controlled, reviewed, and automated data flow to get starting dataset and run analyses.

Interoperable

Standardized starting dataset could be used for many analyses links across internal systems (e.g. Finance data, HASTUS schedule data).

Secure

Enough* staff with access to raw data via secured systems.

* This is a recent development

Metro Transit Headcounts Over A Decade

Metro Transit 12-month rolling headcounts each month since since 2014
Last updated 2024-10-22, data through 2024-09-30
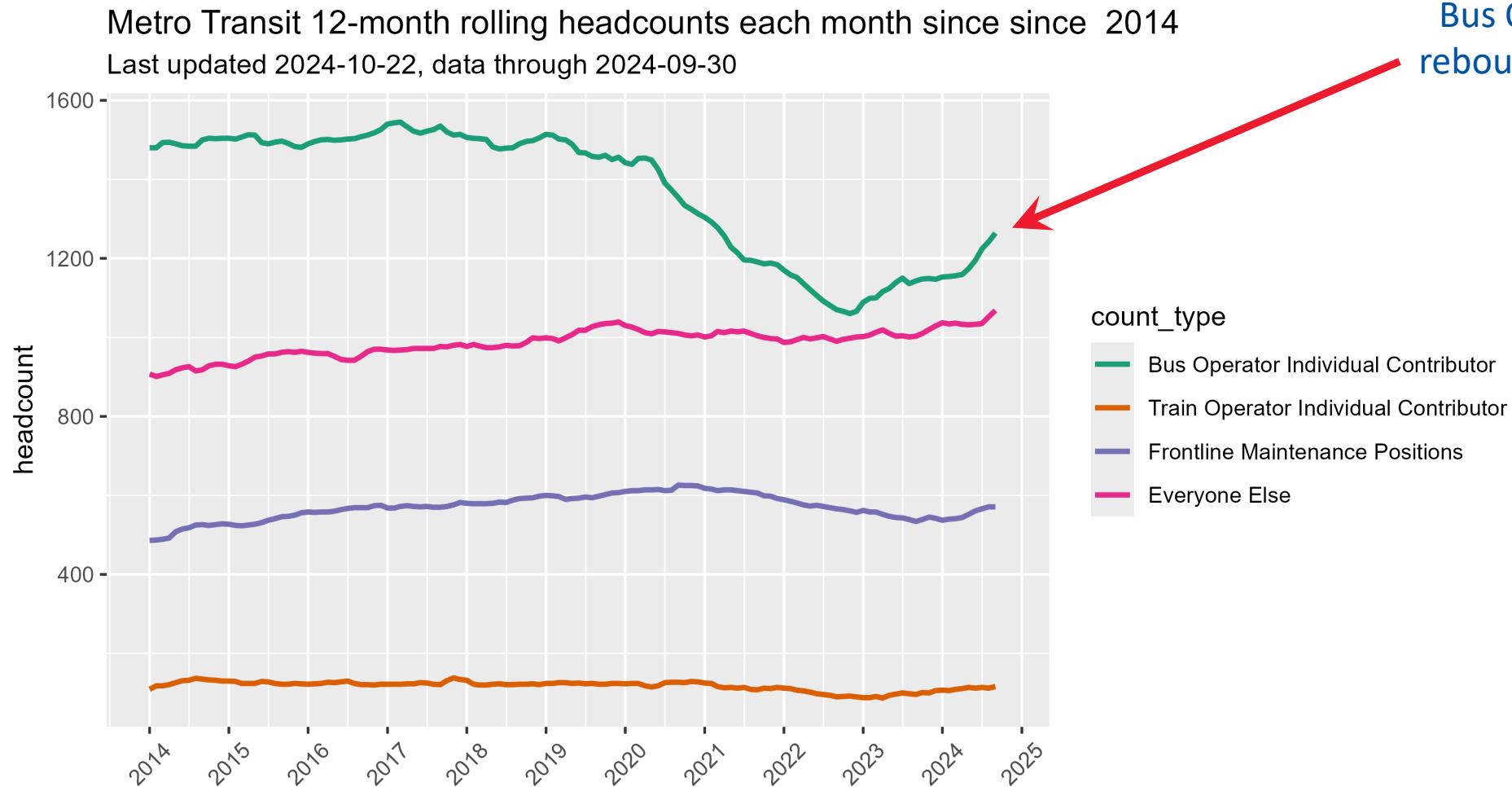
Bus Operator headcount rebounding after 30% drop 2018-2022

count_type
- Bus Operator Individual Contributor
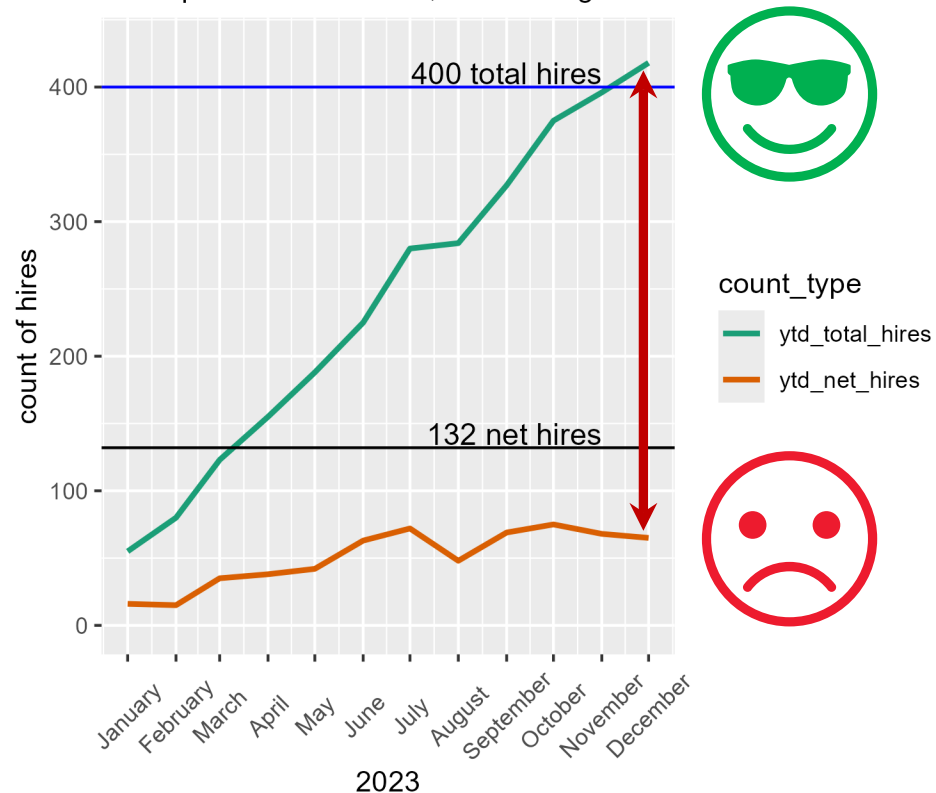- Train Operator Individual Contributor
- Frontline Maintenance Positions
- Everyone Else

Bus Operator hiring faces challenges

2023 Bus Operator Hires

total hires = count of hires (internal and external)
net hires = net change in headcount
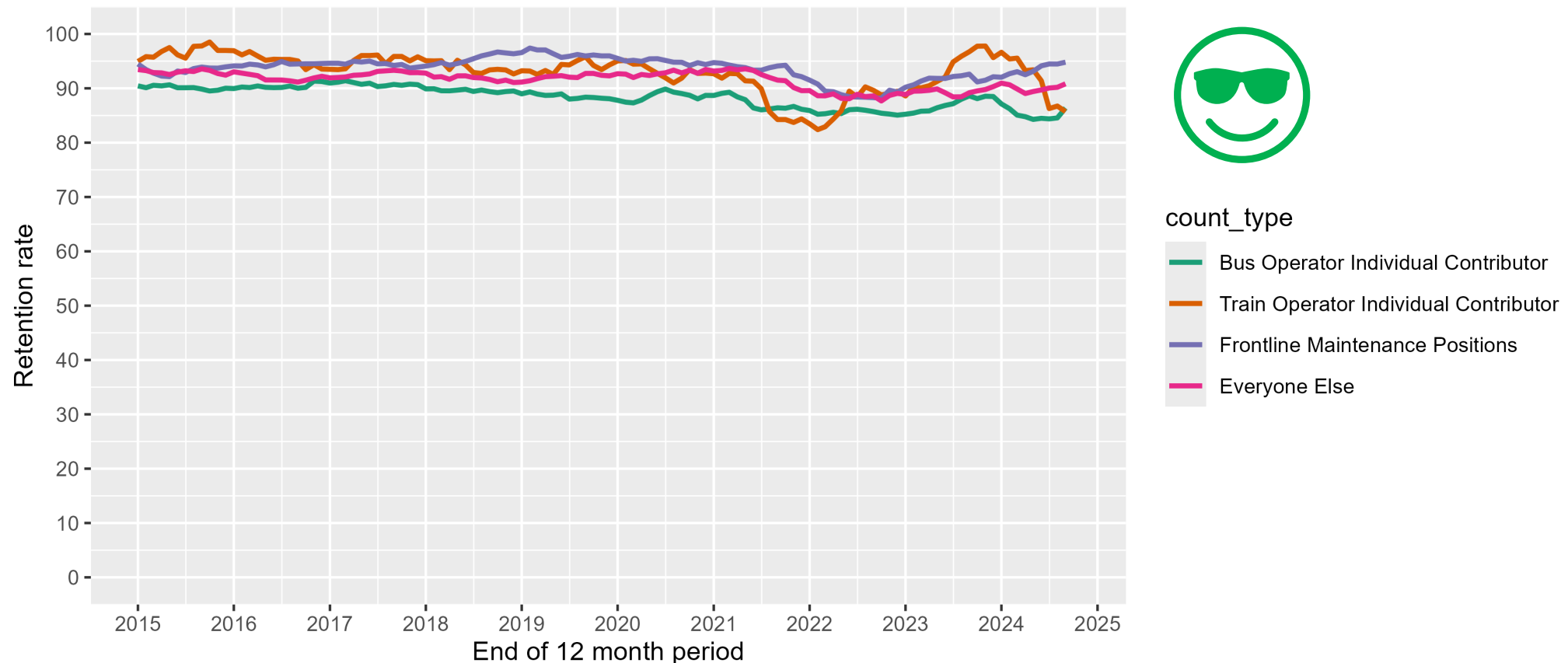Last updated 2024-10-22, data through 2024-09-30

2024 Bus Operator Hires

total hires = count of hires (internal and external)
net hires = net change in headcount
Last updated 2024-10-22, data through 2024-09-30

Total hire goal is HR department goal, net hire goal is Service Development 2025 net headcount increase goal
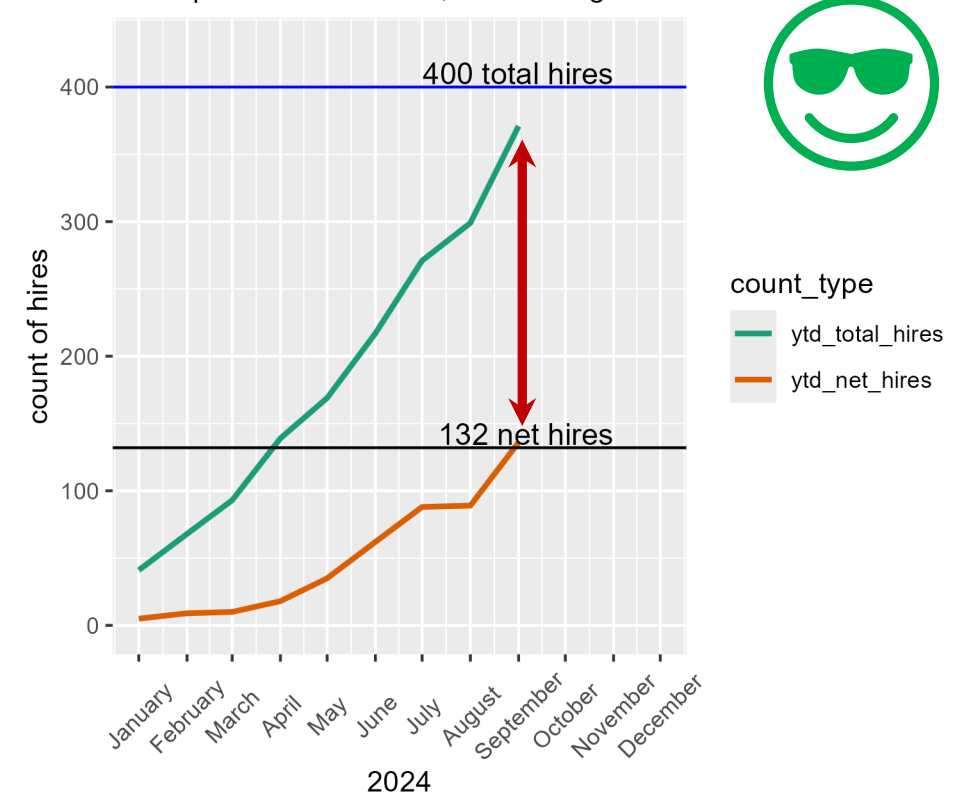
Overall, Metro Transit retention rates are high

12-month retention rates since 2015

Pct retention = 100 * N employees employed for last 12 months/total employees at beginning of last 12 months
Last updated 2024-10-22, data through 2024-09-30

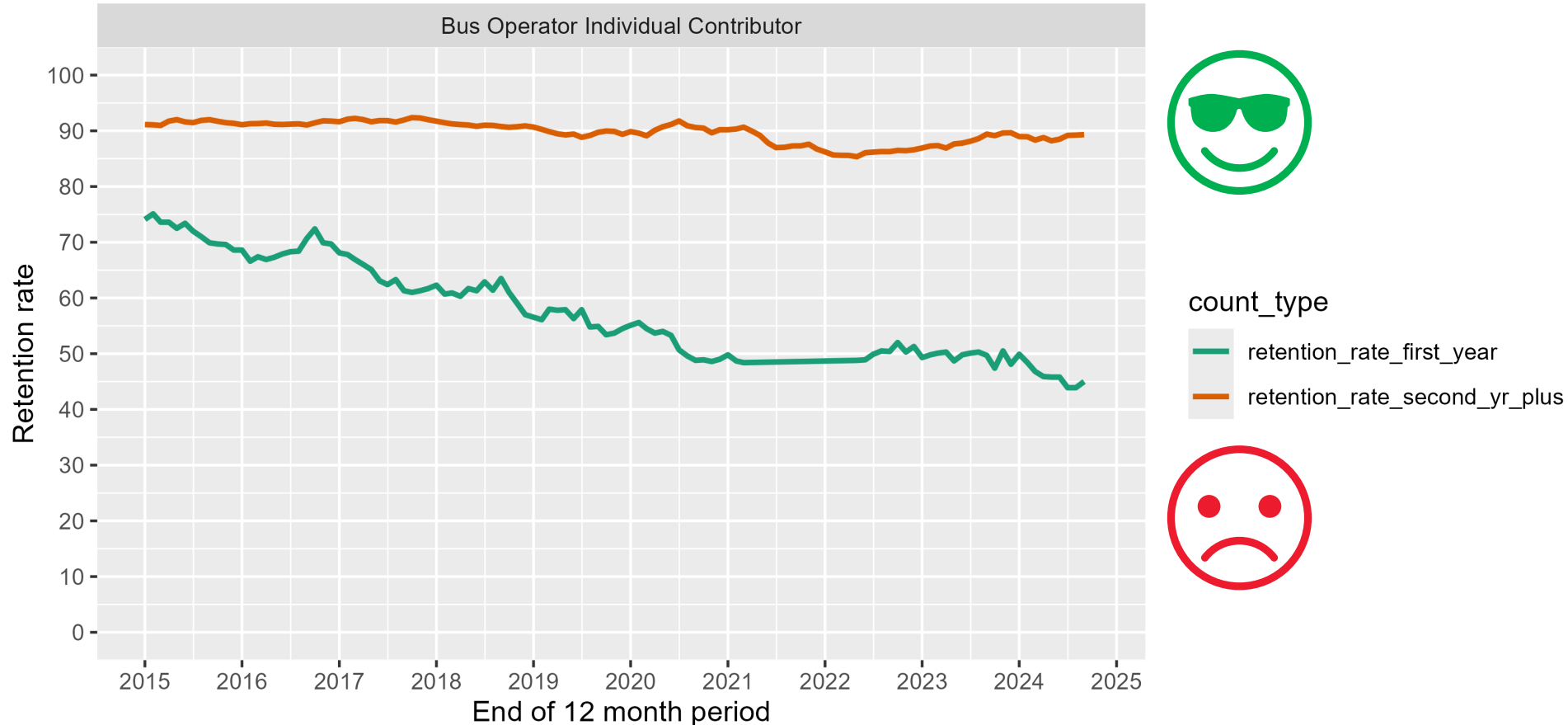(BLS State/Local Gov't turnover rate ~18%/year → ~82% annual retention rate)

First-year Bus Operator retention is low

12-month retention rates since 2015

Pct retention = 100 * N employees employed for last 12 months/total employees at beginning of last 12 months
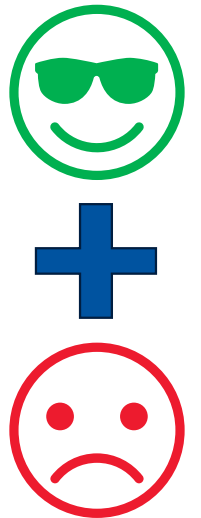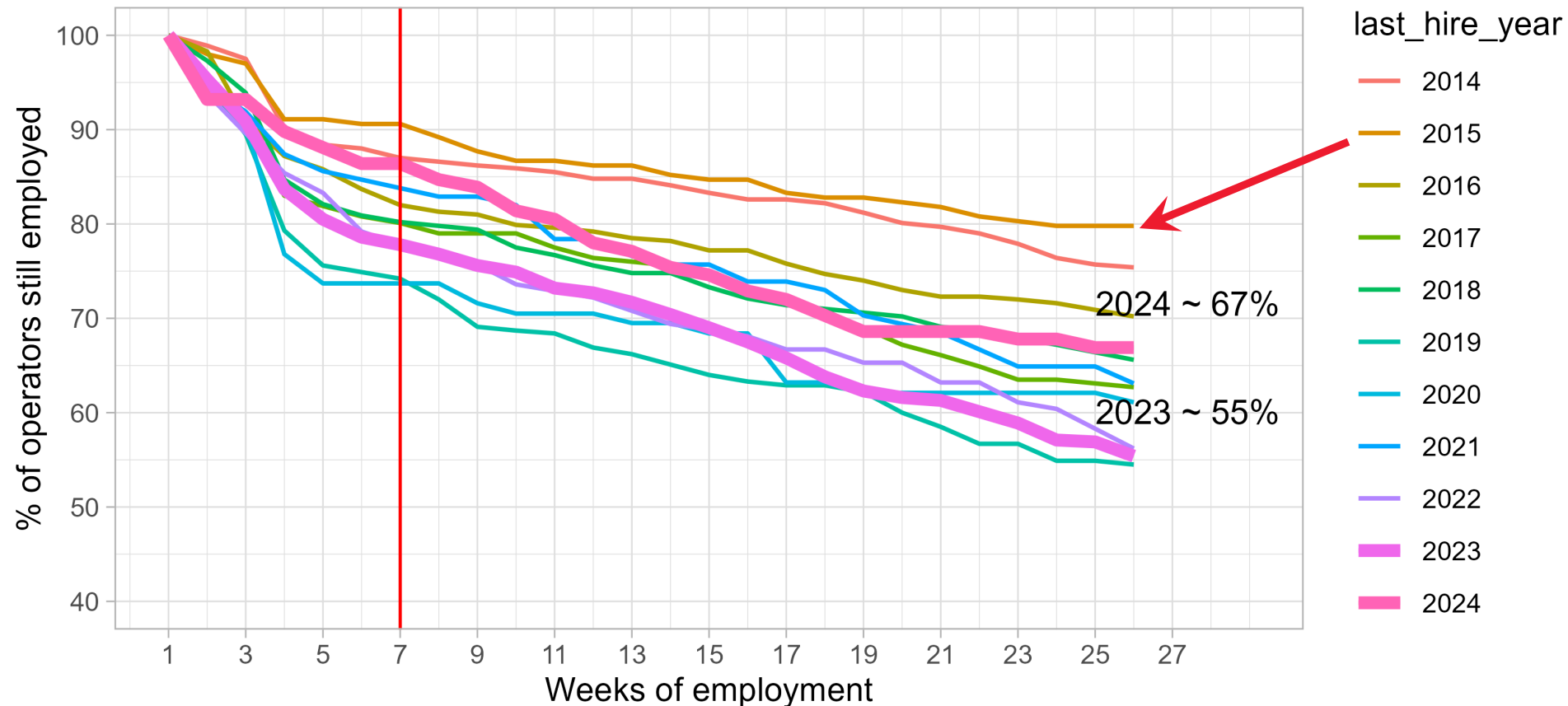Last updated 2024-10-22, data through 2024-09-30

2024 early Bus Operator retention shows some improvement

Early retention of Bus Operators (6 months/26 weeks)

Percent still employed after N weeks by year
Note: current year only includes 118 employees hired in first 17 weeks of 2024

Employment trends treasure: Successes and Challenges

😎 Overall retention is high.

☹ Many Bus Operators leave in their first year.

😎 Training improvements may be helping early Operator retention.

☹ Continuing to address first year retention is critical across job classes.

😎 We can now track these metrics automatically.

Invest in data pipelines → more treasure you can use

- What systems are in place to collect data?

- How easy is it to understand?

- Can appropriate analysts access data?

- How can I cultivate a culture of data sharing?

- Desired outcomes → metric development

- There isn't one perfect approach & everybody has a role.

- Combinations of data types and approaches can be powerful!

Thank You!

Shanta Hejmadi

shanta.hejmadi@metrotransit.org

612-349-7107