Using data to drive policy and better outcomes for the traveling public:

Walking the talk amongst the shiny objects
Objectives

1. Understand the concepts of active management within a digital infrastructure
   • Understand the Mobility Data Specification (MDS)

2. Walk through world-class example of data-driven decision-making

3. Next steps
Active Management

• The role of cities and DOTs: actively manage the limited public right-of-way

• What this involves: **receiving** and **giving** data
Why cities need to receive data

We receive data every day that informs our work and decisions:

• Traffic flows
• Parking transactions
• Asset management
• Permit compliance

Q. What happens when we miss our chance to require data sharing from a new type of operator?

A. We end up trying to regulate something we don’t fully understand (e.g., Uber).
Why cities need to give data

We give information and direction every day to manage the right-of-way:

• Signals
• “No parking” signs
• Dynamic message signs

Seattle is already doing this in the digital space as well:

• **Static:** Open data portal
• **Real-time:** Twitter feed, open traffic feeds
Digital Infrastructure

• Active management is traditionally achieved with physical assets (e.g., paint, signs, signals)

• Need to complement in digital space (e.g., digital replicas of physical assets)

• Common language across jurisdictions and sectors
Standards and Common Languages

• Common language: consistent across jurisdictions and sectors
• General Transit Feed Specification (GTFS) feeds Google, Transit App, local apps
What is the Mobility Data Specification (MDS)?

• Common language being developed by LADOT, moving to city-led governance

• Allows cities to specify what data we receive from and give to private mobility providers like bike/scooter share
Seattle is using MDS for bike share

• What we receive:
  • Trip records (start/end time/location)
  • Device status (available, unavailable)

• What we could give:
  • Appropriate bike parking locations
  • No-park zones
  • Speed limits
Why are we using MDS for bike share?

1. **Compliance** with bike share permit
2. **Program evaluation** to determine if we are advancing our goals (allows us to update our regulations accordingly)
3. **Planning** purposes including understanding broader impacts

### 1. Compliance

Counts exceeding fleet compliance targets are highlighted below. This snapshot was recorded at 5:00am today.

- **JUMP**
  - 1151 bikes **Under Minimum Threshold**

- **LIME**
  - 3723 bikes **Under Minimum Threshold**
  - 6 scooters **Exceeds Maximum Threshold**

- **LYFT**
  - 0 bikes

### 2. Program evaluation

- **MEASURES OF SUCCESS**

<table>
<thead>
<tr>
<th>Measure of Success</th>
<th>Metric Used</th>
<th>Status</th>
<th>Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ridership</td>
<td>Total trips</td>
<td></td>
<td>LOW 654,197.98 in the past period.</td>
</tr>
<tr>
<td>Geographic Coverage</td>
<td>Area % covered</td>
<td></td>
<td>Bike share covered the entire city with good performance.</td>
</tr>
<tr>
<td>Quality</td>
<td>0% reported unsatisfactory, 100% reported satisfactory</td>
<td></td>
<td>Bike share is well received in the community.</td>
</tr>
<tr>
<td>Safety</td>
<td>0% fatal or severe injuries</td>
<td></td>
<td>Bike share is safe for riders.</td>
</tr>
<tr>
<td>Parking/Convenience</td>
<td>100% parking spots available</td>
<td></td>
<td>Bike share has ample parking options.</td>
</tr>
<tr>
<td>Financial Access</td>
<td>100%财务可访问性</td>
<td></td>
<td>Bike share is accessible financially.</td>
</tr>
<tr>
<td>Maintenance</td>
<td>100% bikes in good working condition, 0% with safety hazards</td>
<td></td>
<td>Bike share is well maintained.</td>
</tr>
<tr>
<td>Public Opinion</td>
<td>100% positive feedback</td>
<td></td>
<td>Bike share is well received by the community.</td>
</tr>
</tbody>
</table>

### 3. Planning

- The map shows bike share usage and bike availability.
- The map shows the distribution of bike share stations across the city.
- The map highlights areas with high and low bike share usage.
- The analysis of bike share usage patterns is used to inform future planning decisions.

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Seattle Department of Transportation
Other mobility services data examples

Fare Distribution and Trip attributes (Fares $50 and Under)

Trip attributes by Trip Length
- 5 miles or less: 65.2% (2.5 trips, $5.66 fare, $2.19 tip)
- 6-10 miles: 18.2% (7.4 trips, $12.49 fare, $2.82 tip)
- 11 miles or more: 16.6% (17.8 trips, $26.28 fare, $5.32 tip)

Trip attributes by Additional Charges
- None: 9.1% (4.9 trips, $8.18 fare, $2.14 tip)
- Under $2.50: 15% (3.4 trips, $5.25 fare, $2.55 tip)
- Exactly $2.50: 75.6% (4.6 trips, $8.96 fare, $2.43 tip)
- More than $2.50: 13.9% (14.2 trips, $23.83 fare, $5.04 tip)
What are the risks?

• **Non-adoption of industry standards:**
  - Lower-quality or less granular data than what we need
  - How to regulate what you don’t understand?

• **Privacy and data security:**
  - MDS does not collect user data (personally identifiable information, or PII)
  - However, geolocation data has been shown to be re-identifiable because where you go and how you get there may be unique to you
Data-driven decision making (Classic example)

Curbspace allocation

Sign text and location

Pay station location and parking rules
Parking data information flows

- Payment transactions – not representative of actual parking activity
- Ground-truth observations – Annual study, costly to collect more frequently
- Enforcement citations - Owned by other City departments, geocoding locations challenging and not representative of compliance problems
- Other parking demand influencers – parking rates, land use, economy, seasons, weather, day of week
How that translates into policy

• Changes considered in all paid areas
• Study conditions annually
• Manual counts in spring
• Adjust rates, time limits, times in fall
  • Rates range from $0.50 to $5.00 per hour
  • Time limits of 2 hours, 4 hours, or 10 hours
  • Paid parking from 8 AM to 6 PM/8 PM/10 PM
Next Steps: Thoughts for other cities

• Start from solid policy foundation (the why)
• Codify desired policy outcomes, rationale in code language
• Know your assets (what you have and what you don’t)
• Develop clear methodology for changes
• Commit to regular, ongoing data collection (avoid one-offs!)
• Connect the data results to adjustments
• Educate the public on an iterative basis as changes occur
Thank you and questions!

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