

# Lessons Learned from Urban Freight Pilot Tests

**Andisheh Ranjbari**, Elizabeth Guzy, Anne Goodchild

I-NUF conference

May 2022 | Long Beach, CA



**PennState**



**URBAN FREIGHT LAB**  
UNIVERSITY *of* WASHINGTON

# INTRODUCTION

- The last mile of delivery is undergoing **tremendous changes**, experiencing new demands and new challenges. So, there is a **need for new transportation options and novel technologies**.
- When studying new strategies or technologies, **empirical research and pilot tests** are an important addition to theoretical and simulation research, as they **provide a realistic setting**.
- In this environment, **unforeseen obstacles** are encountered, **risk appetites** tested, and **economic motivations** revealed.
- However, pilot tests are **time-consuming**, **costly**, and **strategically-intensive**.

# INTRODUCTION

We have done a number of urban freight pilot projects in Seattle, WA during 2019-2021.



# INTRODUCTION

- This talk focuses on **challenges faced** during those pilots and offers **examples and lessons learned** for those who are planning to design and/or run future pilot tests.
- The goal is to help others
  - **articulate** research and implementation **plans** involving pilot tests **better and more realistically**, and
  - **save time and resources** by skipping some of the challenges and obstacles that the authors faced.

---

\*Challenges mentioned are from pilots in the USA, and while most of them are generalizable to any location around the world, some nuances may not apply to other countries.

# CHALLENGE CATEGORIES

The challenges can be grouped into five overall categories:

- Location
- Permits and Agreements
- Collaboration Between Involved Parties
- Marketing and Engaging Community
- Missing Regulations and Processes

# Challenge 1: Identifying the Right Location

- Finding the right location affects
  - ✓ pilot feasibility
  - ✓ traction received from the community
  - ✓ involvement of public agencies and operator participation
  - ✓ the process to secure agreements between parties
  
- Generally, for a successful pilot implementation, the **needs and constraints** of three groups should be taken into account:
  - Operator
  - User
  - Community

# Challenge 1: Identifying the Right Location (Example)

- Level base, power and stable internet connection
- Has a postal address
- Secure location
- Easy access for carriers
- Safe and well-lit location
- Extended access hours for users
- On-site management
- Well-received by the community



Parcel Lockers

# Challenge 1: Identifying the Right Location (Example)

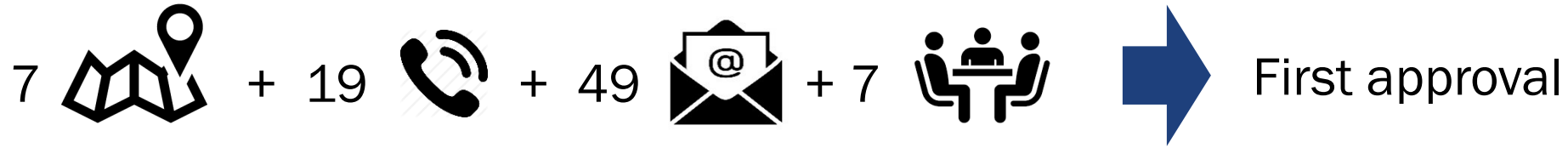
- Survey partners about their needs and requirements
- Discuss as a group and set the expectation that there will be trade-offs
- Reach out to local authorities and make sure they understand the project needs
- Consider access for users and operators
- Understand community concerns



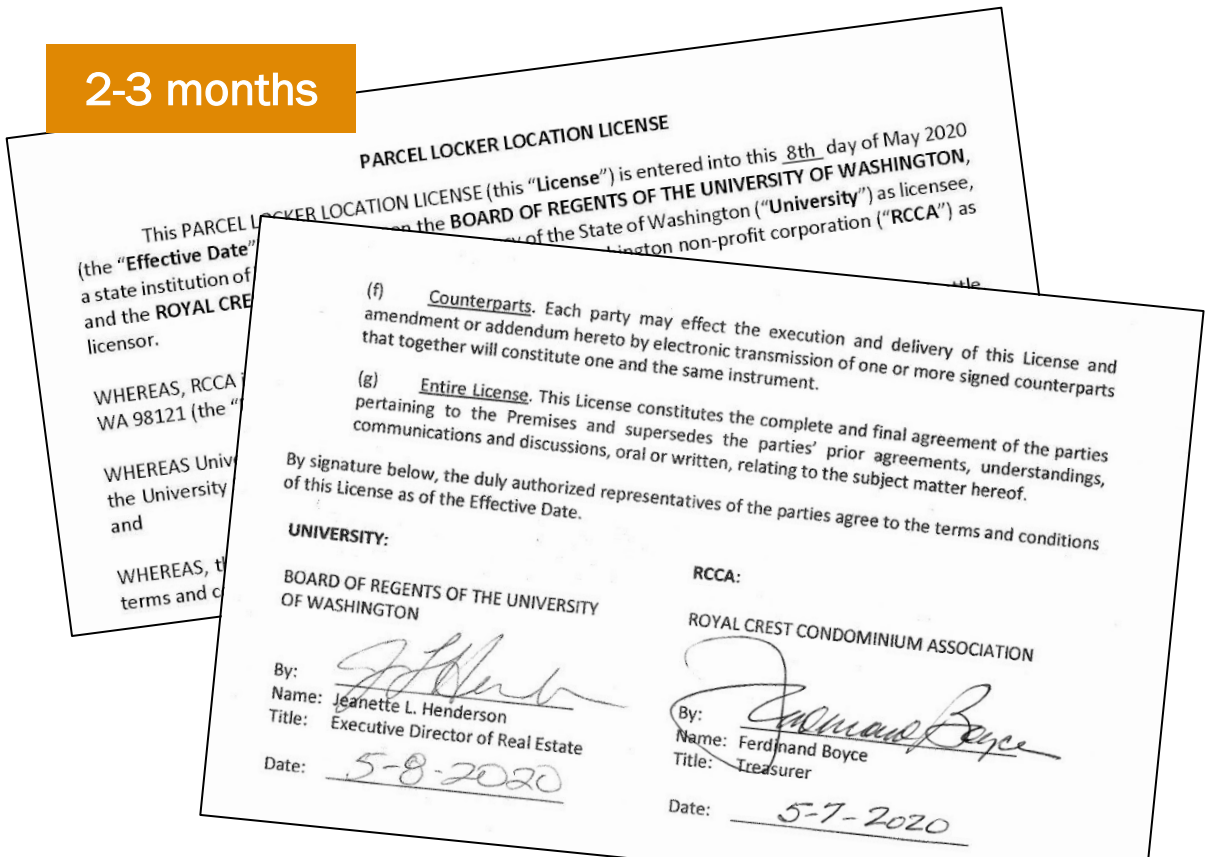
Microhub



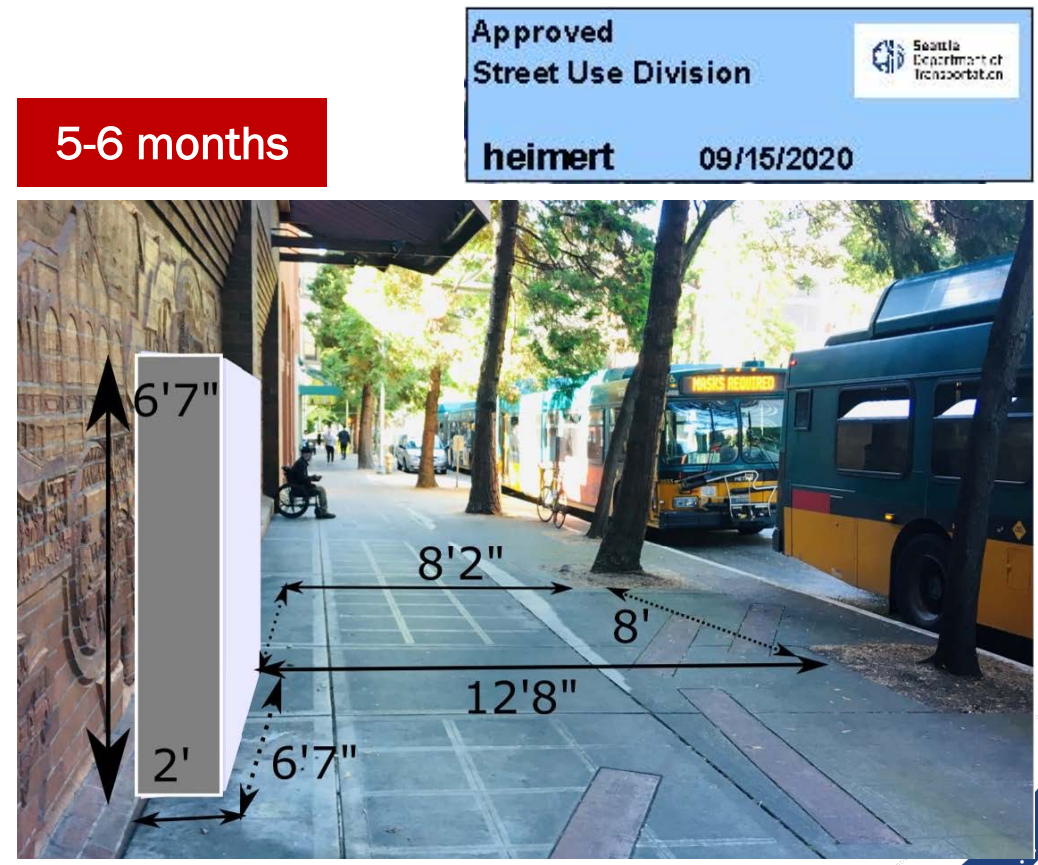
# Challenge 2: Permits and Agreements



2-3 months



5-6 months

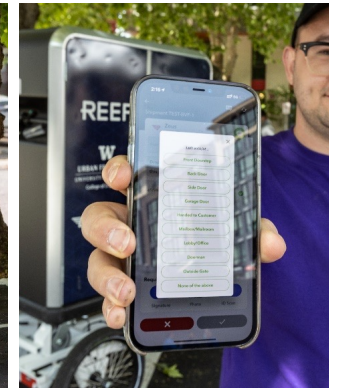


Locker location license issued by UW Real Estate

Seattle DOT permit for sidewalk locker

# Challenge 3: Collaboration between Involved Parties

- Have an established POC per organization
- Ensure all stakeholders understand project goals, stay motivated, and participate in clear communication.
- Having weekly check-ins with all involved parties proved invaluable to share progress updates on operation and do problem solving in real-time



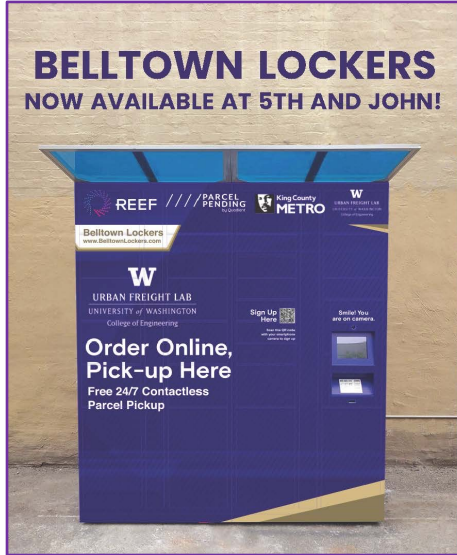
Multiple parties involved in the microhub pilot

## Challenge 4: Marketing and Engaging Community

- For pilot tests wherein participation from users is needed, marketing plays an important role.
- It may require spending substantial project resources.
- Marketing should be done early and consistently.
- Engaging local agencies and community associations proved to be very helpful in tailoring the ads to the community needs and accessing local platforms to post the ads.

# Challenge 4: Engaging Local Agencies and Community Associations in Marketing/Advertising Efforts

Postcards mailed to nearby residents



**Safe! Contact-free! Convenient! FREE!**

Sign up today to keep your packages and parcels safe and secure until you pick them up\* – 24 hours a day/7 days a week

**Locker location**  
Republic Parking Lot  
130 5th Ave. N, Seattle, WA 98109

**Sign up at: BelltownLockers.com**

\*Packages held for seven days.

**DON'T HAVE YOUR PACKAGES DELIVERED JUST ANYWHERE**

Get them delivered to the Belltown Lockers and be part of a UW research study about energy efficient delivery systems!

- Corner of 5th Ave. N and John St. in the Republic Parking Lot
- Contact-free, self-service package pickup
- Available 24/7
- It's a FREE service
- Your packages are no longer stacked in apartment/condo lobbies
- Email/text delivery notification
- Any shipping carrier (USPS, UPS, FedEx, DHL, Amazon etc.) can deliver to the Belltown Lockers

**Sign up at BelltownLockers.com**

This locker system is part of a study at the University of Washington's Urban Freight Lab focused on understanding and reducing congestion and emissions in cities. This project is being funded by the U.S. Department of Energy and is a collaboration between the City of Seattle, King County Metro, Sound Transit, CTRF, Puget Sound Clean Air Agency and the City of Bellevue.

Supply Chain Transportation & Logistics Center  
Urban Freight Lab  
University of Washington  
Box 352130  
Seattle, WA 98195-2130

PRIST STD  
US POSTAGE  
PAID  
SEATTLE WA  
PERMIT #75258

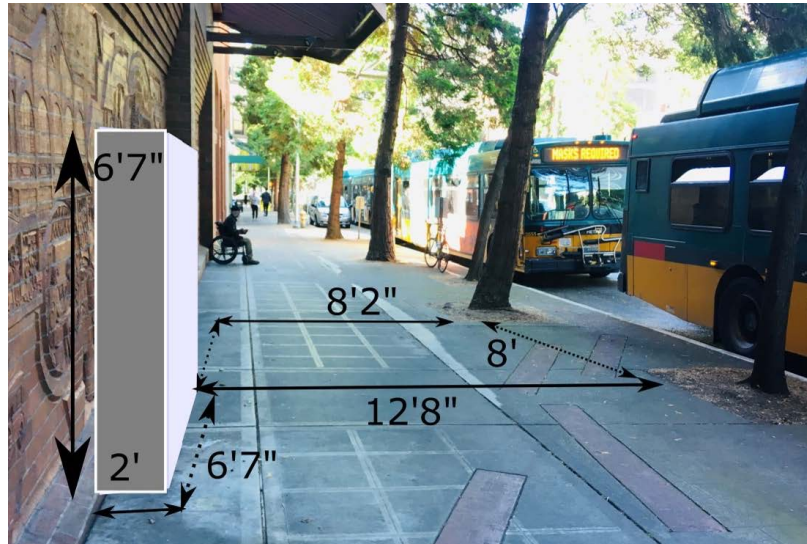
RETURN SERVICE REQUESTED



Sandwich boards to promote the public locker

## Challenge 5: Missing Regulations and Processes

- A strategy/technology that is being tested for the first time will suffer from lack of relevant regulations and processes, requiring additional time/resources.



What permit to apply for? Is a construction permit also needed?



Bike or commercial vehicle?  
Where to ride/park?



Street/Navigation apps not designed for bike delivery.

- Cities are encouraged to revise their regulations accordingly to be able to accommodate timely installation of new infrastructures/technologies.

# SUMMARY – Lessons Learned

- Identify the **right location**. Consider the needs and constraints of **users, operators and community**.
- Have **on-site management**.
- Identify needs and barriers for securing required **permits and agreements** and plan for those very early on.
- Have an **established POC per organization** and **regular check-ins** with all involved parties and ensure there is a **mutual understanding of the project goals**.
- Do **marketing/advertising early and consistently** and **engage local agencies and community associations** in those efforts.
- Work with cities and local authorities to **revise** their **regulations accordingly** to be able to accommodate timely installation of new infrastructures/technologies.

# THANK YOU !

**Andisheh Ranjbari**

Assistant Professor

Civil & Environmental Engineering, Penn State University

[ranjbari@psu.edu](mailto:ranjbari@psu.edu)