

# Novel Approaches to Parking Management on Nantucket



WPI



# Who We Are

Shannon Alvarez

*Civil Engineering*

Richard Hosea

*Robotics Engineering*

Angela MacLeod

*Mechanical Engineering*

Nicholas Lanotte


*Electrical & Computer/Robotics  
Engineering*

**Sponsors:**

Mike Burns, *Nantucket Planning Office*

Peter Morrison, *Nantucket Civic League*





# Context

# 105%

Capacity of parking spaces during peak hours







# Goals & Objectives



## *Goal: Formulate and evaluate updated options to manage downtown parking*

- 🚗 Identified stakeholder perspectives
- 🚗 Surveyed residents' perspectives
- 🚗 Analyzed various facets of the problem
- 🚗 Formulated short-term actions and long-term strategies to inform public choices



# Goals of Nantucket Board of Selectmen

- 🚗 Institute a parking management program
- 🚗 Create commissions and funds
- 🚗 Engage an independent consultant



A group of people, including students and professionals, are seated around a long wooden conference table in a bright, modern meeting room. Several laptops are open on the table, and some individuals are looking at them. The room has large windows with blinds and a map on the wall. The text "Stakeholder Perspectives" is overlaid in a large, bold, black serif font across the center of the image.

# Stakeholder Perspectives



24

## INTERVIEWS

15 Town Officials

5 Selectmen

4 Private Organizations

# Pedestrians & Traffic

45% stakeholders mentioned pedestrian traffic is problem

🚗 Pedestrians: ignore crosswalks and obstruct traffic by walking in street

🚗 Bikers: ride on sidewalks, displacing pedestrians





# Public Behavior

75% of stakeholders mentioned that the residents and visitors alike need to improve behavior

- 🚗 Attachment to cars
- 🚗 Reluctance to walk/bike
- 🚗 Disinterest in public transport







# Parking Enforcement

- 🚗 Turnover affects availability
- 🚗 Inconsistency in ticketing
- 🚗 Increased penalties



# Employee and Commercial Vehicle Parking Issues

- 🚗 Dedicated employee parking
- 🚗 “Hidden cost”
- 🚗 Construction boom
- 🚗 Divert contractor vehicles







# Intermodal Transportation Hub

- 🚗 Split support
- 🚗 Centralized transportation
- 🚗 Paid on-street parking





# Public Perspectives



# 262 RESPONSES

112 Madaket Residents

29 Tom Nevers

21 “Mid-Island”

19 Pocomo

73 Other



# Paid Parking Divide

50%

One-Time Fee

43%

Hourly Rate

7%

No Response

A faded background image of a street scene. In the foreground, there are bare tree branches. In the middle ground, several cars are parked along a street, including a red SUV and a red pickup truck. In the background, there are more trees and buildings under a cloudy sky. A street sign on the left reads "ONE WAY DO NOT ENTER".

**Downtown Permit (est)**  
**\$1,050,000**

**Plus other existing permits & tickets (est)**  
**\$1,413,916**

**1st** – Increasing shuttle buses services

**2nd** – Developing satellite lots

**3rd** – Paving and improving bike paths

**4th** – Increasing parking enforcement

**5th** – Improving sidewalks

**6th** – Marketing of other transportation



# Shuttle Buses

49%

1st or 2nd Priority

25%

Willing to ride shuttle bus

A faded background image of a city street. On the left, there are multi-story buildings with light-colored siding and dark shutters. A small, decorated Christmas tree stands on the sidewalk. A large tree trunk is in the foreground. The street is lined with parked cars, including a white SUV and a dark SUV. Pedestrians are walking on the sidewalk. The word "Conclusions" is overlaid in a large, bold, black serif font in the center of the image.

# Conclusions



- 🚗 **Insufficient turnover**
- 🚗 **Need for paid parking**
- 🚗 **Difficult to alter parking behavior**



NO  
PARKING  
THIS  
SIDE

N.P.D.

(FORCE 5 WATERSHED)

# Recommendations

Small Space &  
Interior Design  
2007-375-0314



# Near-Term

- 🚗 Implement **parking sticker** and ***parking benefit district***
- 🚗 Expand ***Park & Ride*** services and **valet**



## Legend

--- Study Area

--- Core Business District

--- Walkable Area

# Medium-Term

🚗 RFID tags to replace stickers

🚗 Demand-driven pricing  
through **hourly rate** replaces  
flat-fee





# Long-Term

- 🚗 Accept a proposal for Intermodal Transportation Center
- 🚗 On street sensors for data collection, management and enforcement



# Acknowledgements

Thank you to our project sponsors and their organizations, **Mike Burns** of the **Nantucket Planning Office** and **Peter Morrison** of the **Nantucket Civic League**, for their support and direction.

Thank you to those who took time to participate in our **interviews** and **survey**, it is greatly appreciated.

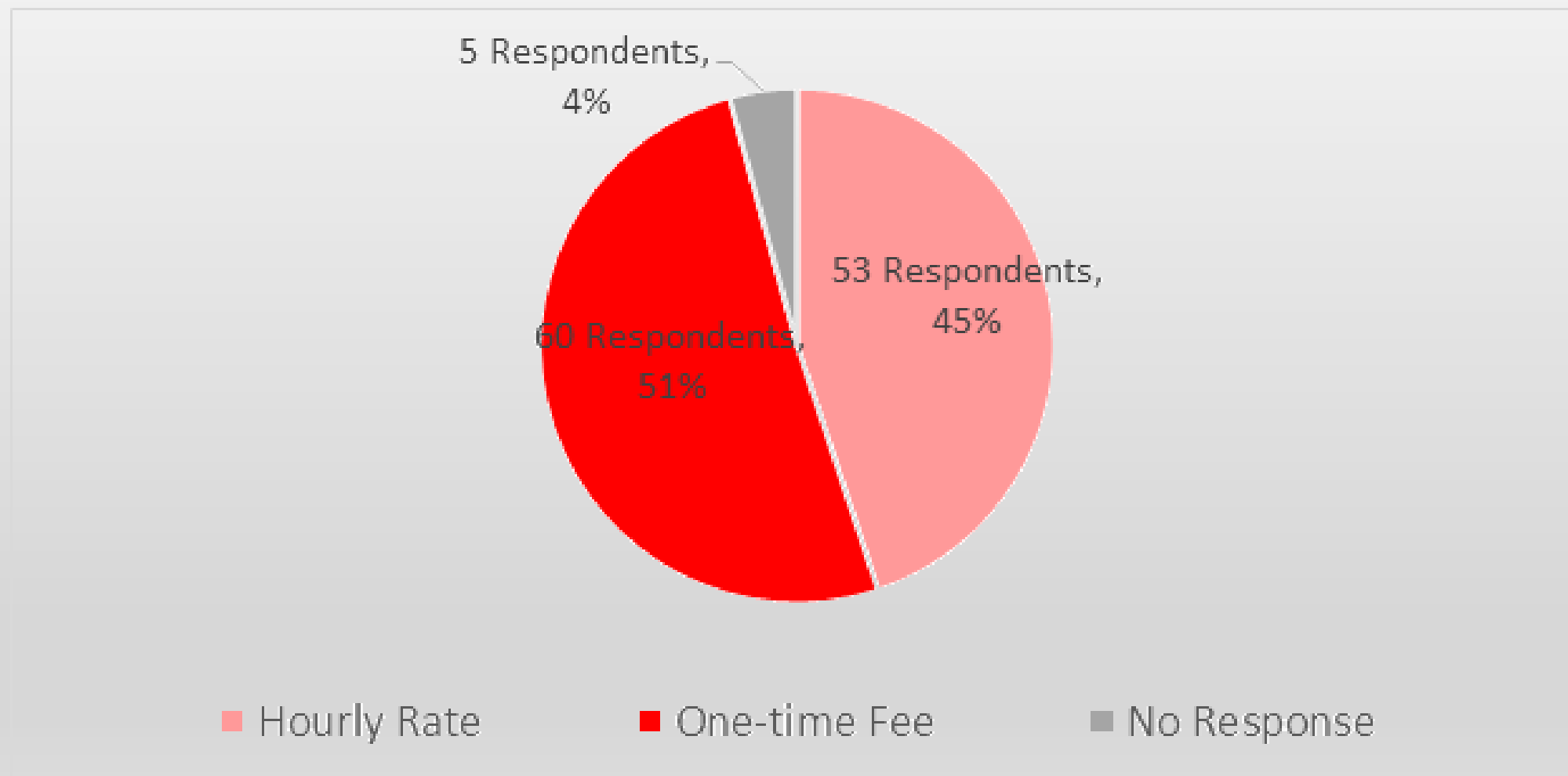
Thank you to the **Maria Mitchell Association** for their hospitality and **Young's Bike Shop**, **ReMain Nantucket** and **The Shipwreck Museum** for their generosity.



# Thank You!

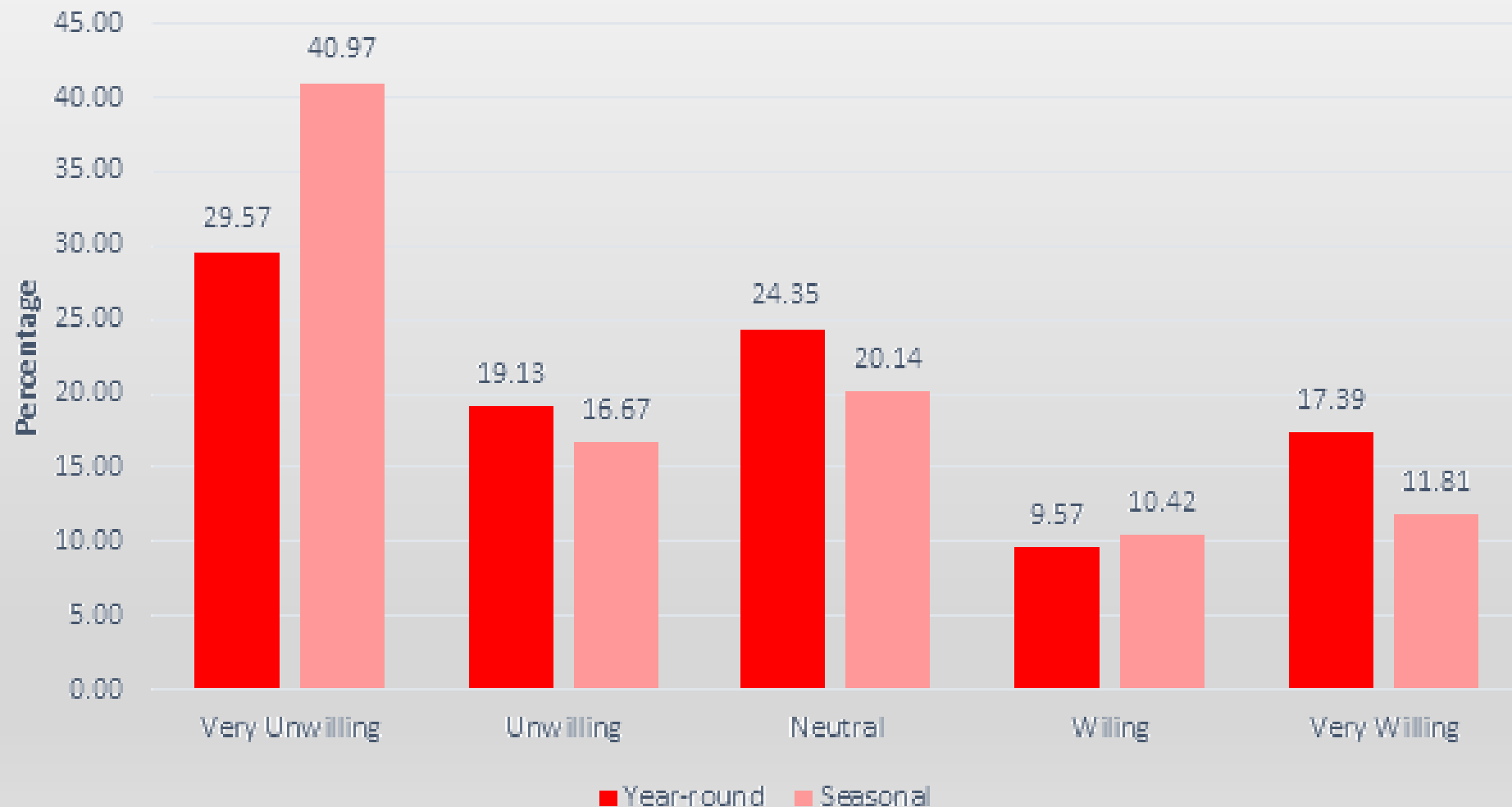


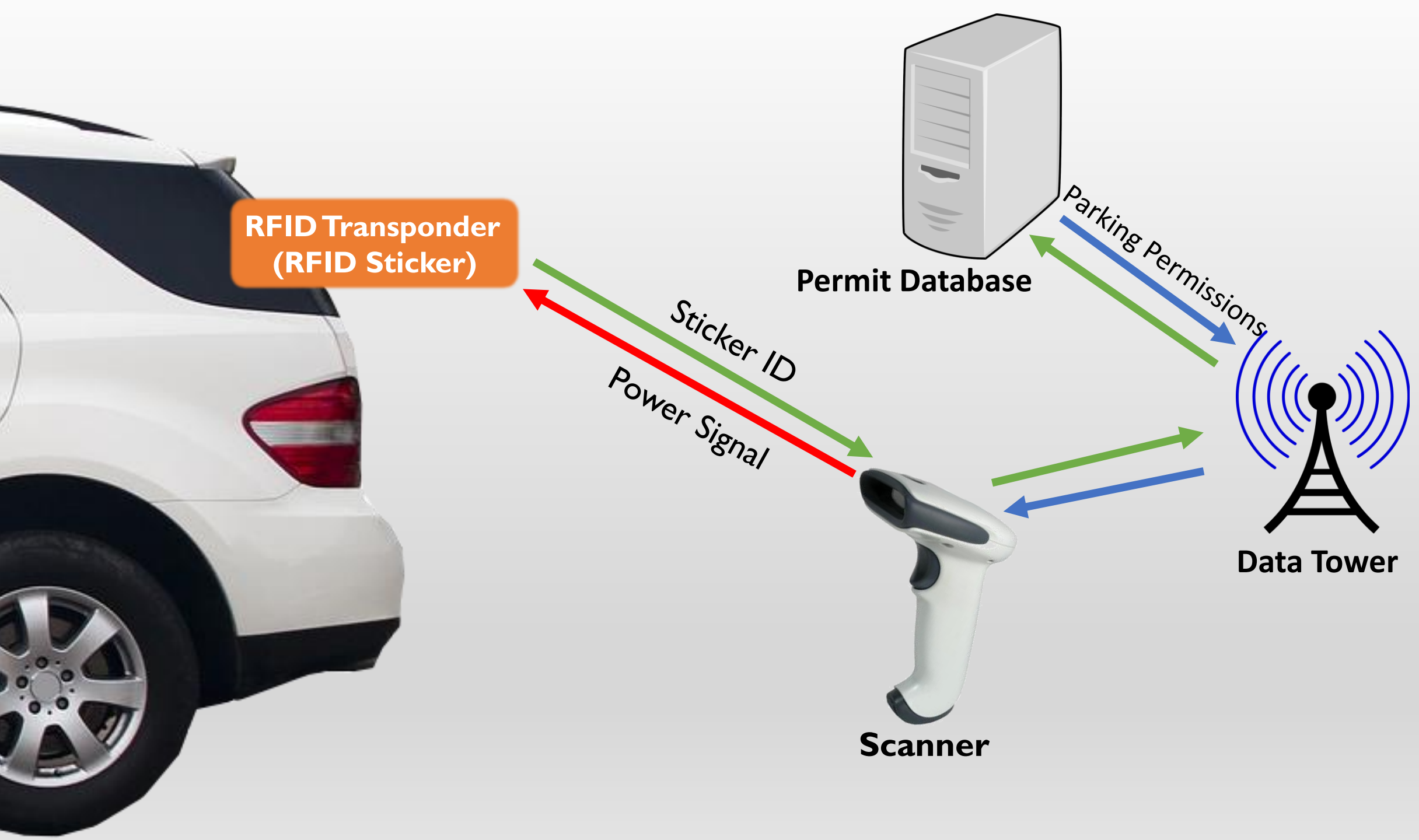
# Voting Resident





# Willingness to use shuttle







On-Street Sensor

