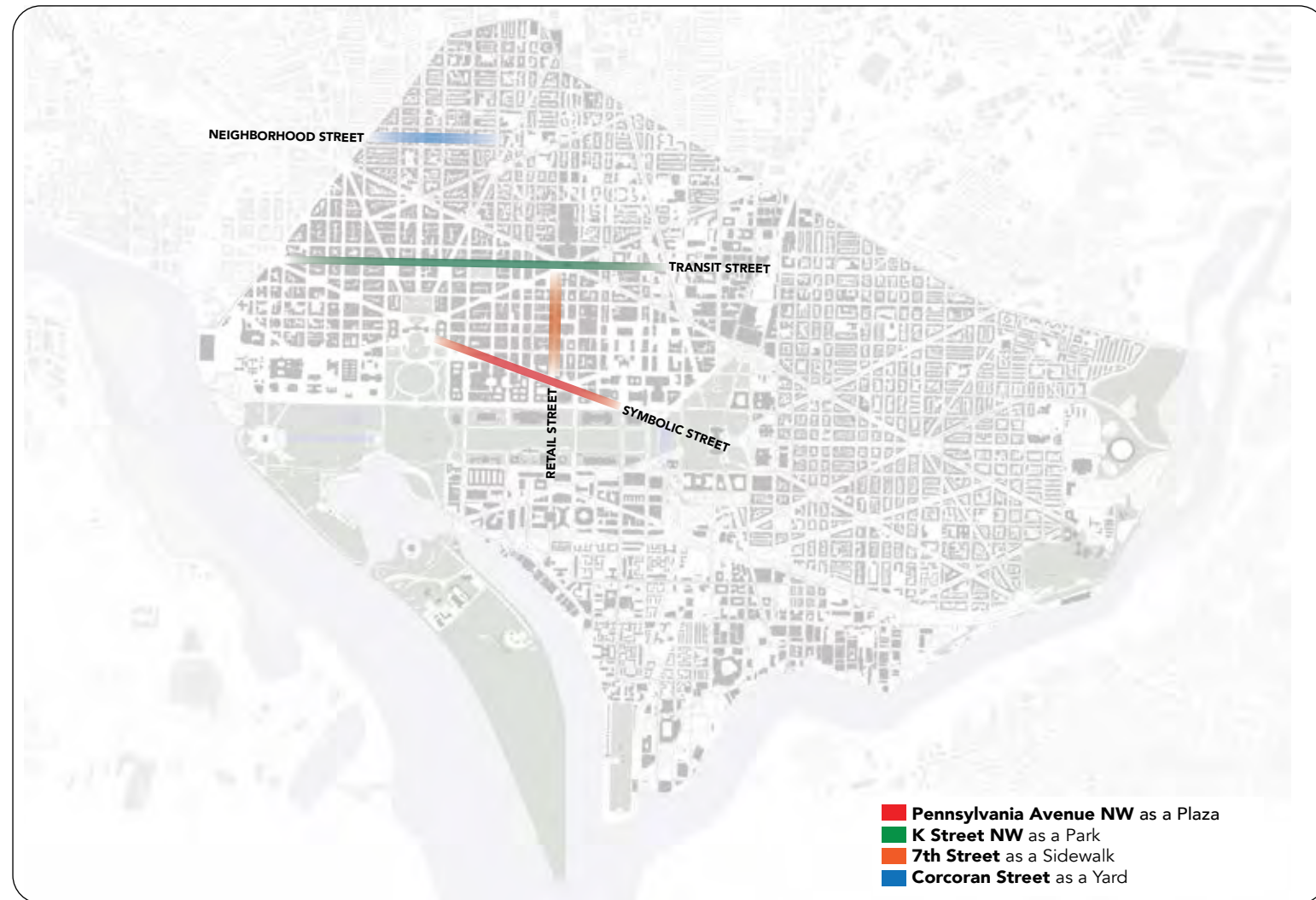# STREET AS...
Reimagining the Street Through Autonomous Cars

STREET AS...

With the advent of **self-driving cars** in our cities and their potential to become a dominant mode of individual transportation, we have a unique opportunity to reimagine urban space traditionally dedicated to streets.

This study, initiated before self-driving cars were approved for public use in California, was initially met with controversy. However, with the implementation of this technology now becoming a reality, it makes even more sense to explore the potential changes these advancements could bring to cities as a real form of transportation. This research delves into the concept of transforming streets into unique landscapes, elevating the primary function of each street.

By rethinking four prototypical streets, this project aims to establish a method for redefining urban design in the context of autonomous vehicles.

- 🟥 **Pennsylvania Avenue NW** as a Plaza
- 🟩 **K Street NW** as a Park
- 🟧 **7th Street** as a Sidewalk
- 🟦 **Corcoran Street** as a Yard

*Washington D.C. as a case study to explore urban design challenges.*

FRAMEWORK

The selection of Washington D.C. as the urban environment for this study focuses on four prototypical streets that represent different urban conditions. Pennsylvania Avenue is analyzed as a symbolic street, K Street as a major transit corridor, 7th Street in Downtown as a retail street, and Corcoran Street in Dupont Circle as a neighborhood street. These streets were chosen for their diversity in form and function, offering a broad spectrum of street types.

The introduction of self-driving cars presents a unique opportunity to rethink the use of street space. Rather than standardizing changes across all streets, this study explores how each street can be reimagined as a distinct landscape, tailored to its specific context. The technology not only enhances transportation efficiency but also prompts us to reconsider the role of streets as multifunctional public spaces.

For instance, Pennsylvania Avenue could be transformed into a grand public plaza, highlighting its symbolic significance. K Street might evolve into a linear park, blending green space with its transit function. 7th Street could become an expansive pedestrian-friendly sidewalk, enhancing the retail experience, while Corcoran Street may extend into a neighborhood's front yards, fostering a stronger sense of community.

## PRINCIPLES of a future transportation
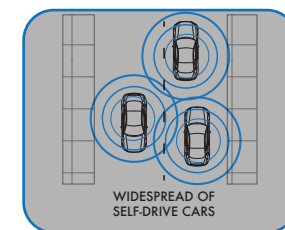
Autonomous Cars as the Norm
The future will see self-driving cars becoming a constant in urban mobility, reshaping the way we experience and navigate cities.
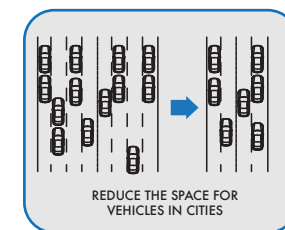
Connected Vehicle Networks
With cars operating as part of an interconnected network, traffic flows will be more efficient, reducing the need for multiple lanes and freeing up valuable urban space.
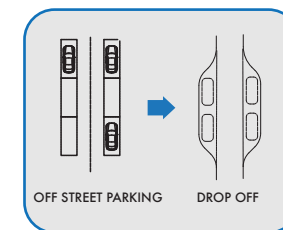
Off-Street Parking Elimination
Autonomous vehicles will eliminate the need for off-street parking, as they continuously flow through the city and utilize designated drop-off and pick-up areas.
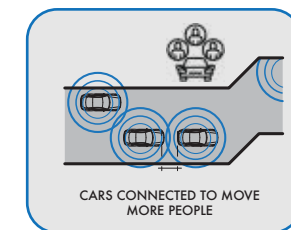
Carpooling Through Robotic Taxi Services
Autonomous cars will operate as shared "robot taxis," enabling carpooling and reducing the number of vehicles on the road, thereby improving traffic and reducing emissions.

Safer, Shared Streets and Sidewalks
Self-driving cars will be secure and reliable enough to enable shared use of streets and sidewalks, creating more flexible urban spaces that prioritize pedestrians and cyclists.

Pennsylvania Avenue NW


K Street NW

7th Street

Corcoran Street

METHOD

Each street has an intrinsic role in the city, and in the case of Pennsylvania Avenue, it serves as a symbolic street. This avenue is central to important parades, festivals, and other major events, making it a vital space not only for tourists but also for the overall habitability of Downtown Washington D.C.Currently, approximately 50% of the street is designated for pedestrians, which is relatively favorable. However, by improving the efficiency of car movement and eliminating parking spaces, we can increase the space allocated to people to 75%, with vehicles becoming secondary to the pedestrian experience.
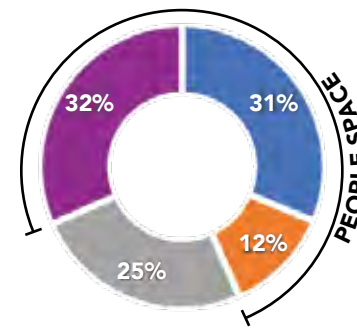

STREET AS TODAY

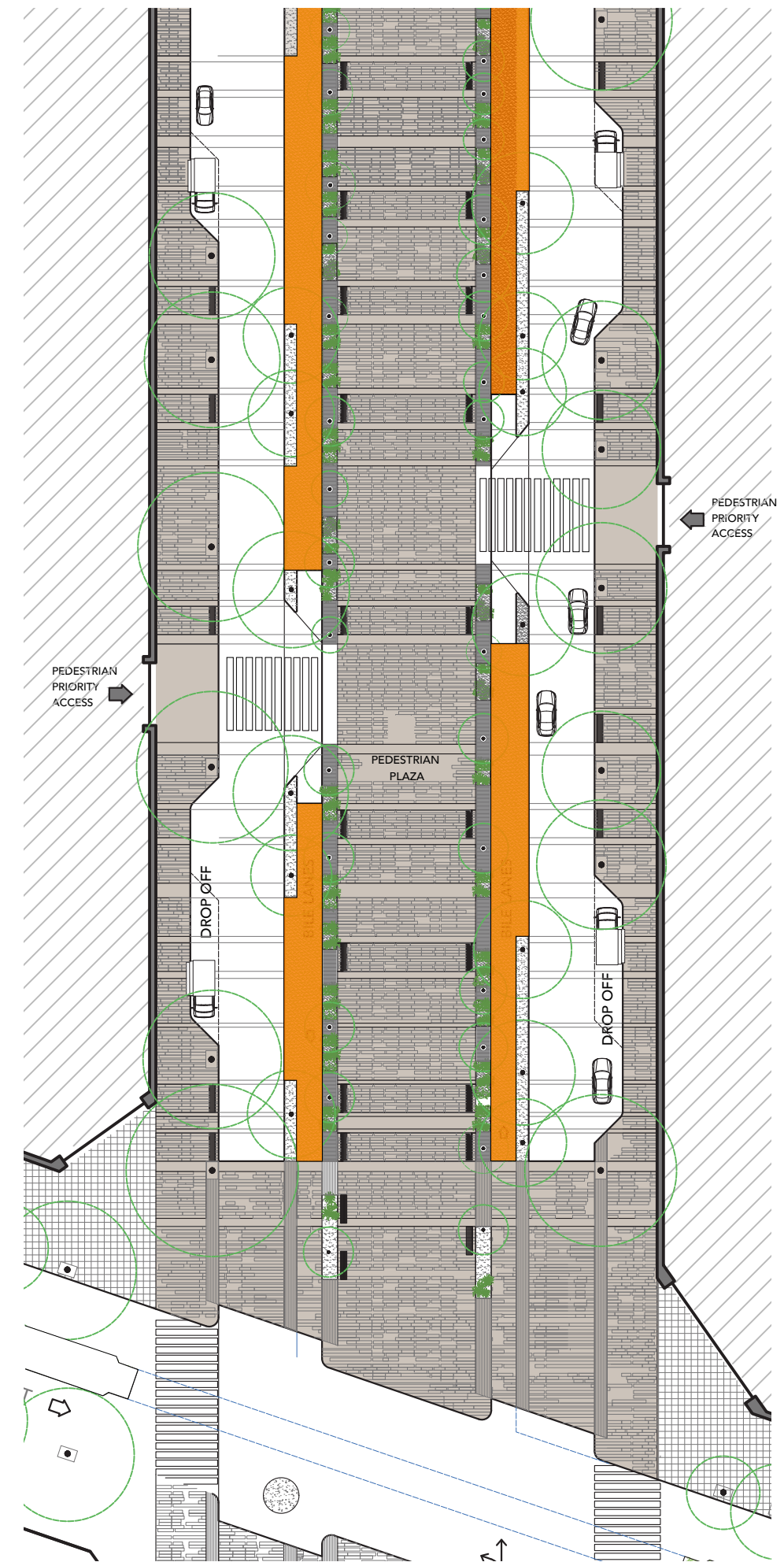**STREET AS PLAZA**

PRYMARE SPACE DESIGNATED
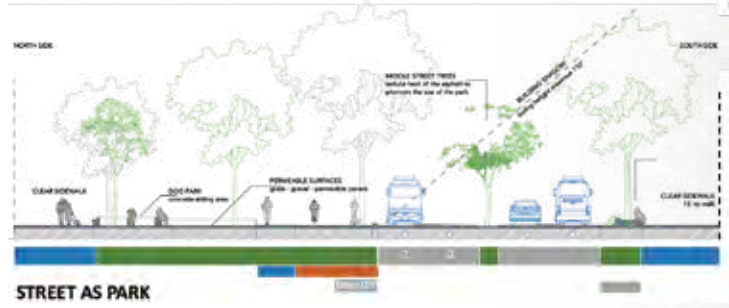
48%   45%   7%
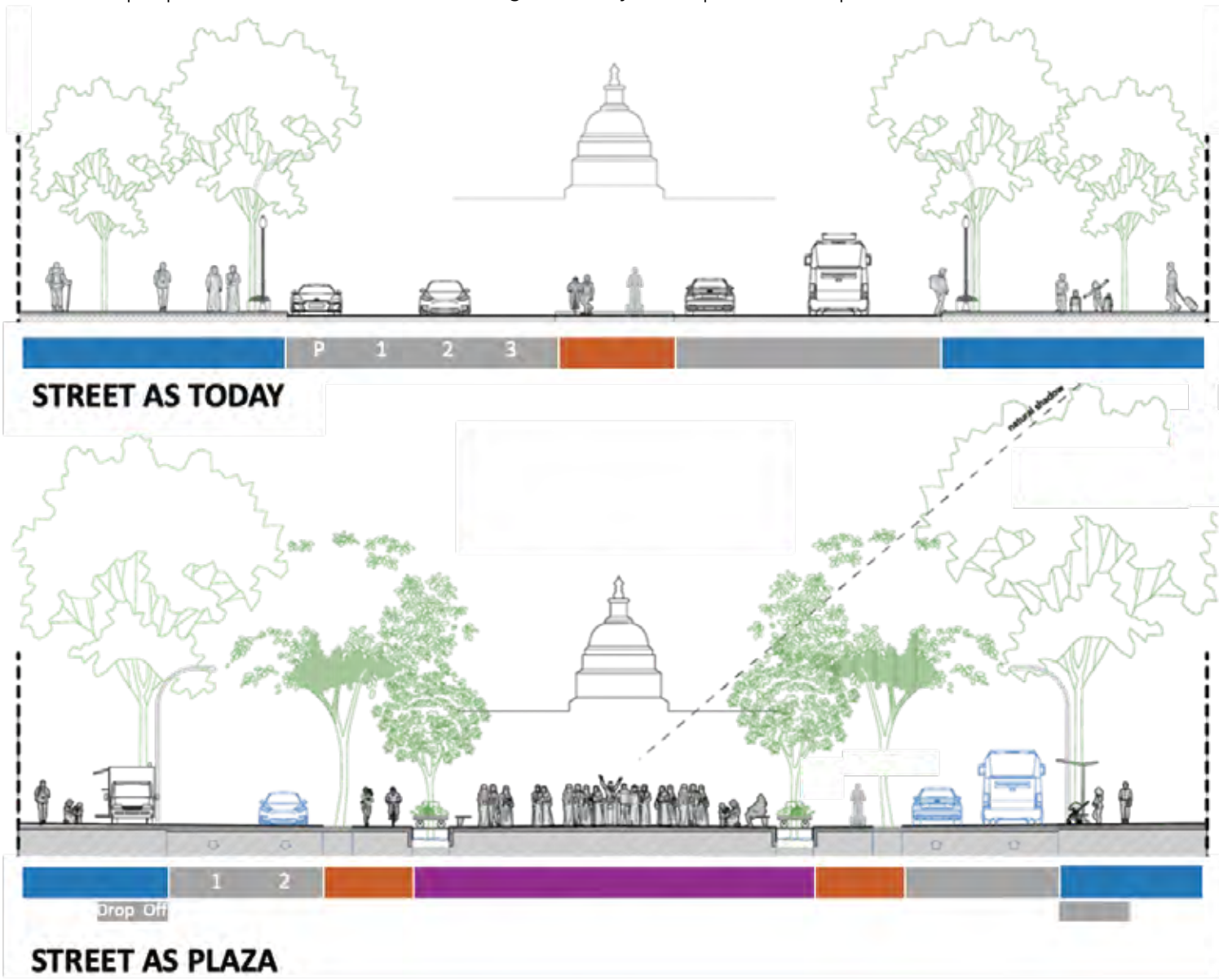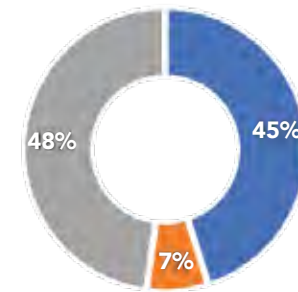
- Sidewalk
- Bike Lane
- Traffic Lane

The average space designated is calculated within a specific block encompassed between the White House and the Capitol.

PEOPLE SPACE

32%   31%   25%   12%

- Sidewalk
- Bike Lane
- Traffic Lane
- Plaza

- Plaza

Pennsylvania Avenue as plaza

PEDESTRIAN PRIORITY ACCESS

PEDESTRIAN PRIORITY ACCESS

PEDESTRIAN PLAZA

DROP OFF

DROP OFF

STREET AS.... park

STREET AS TODAY
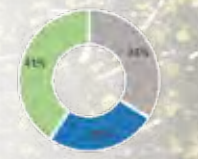
STREET AS PARK

PRYMARE SPACE DESIGNATED
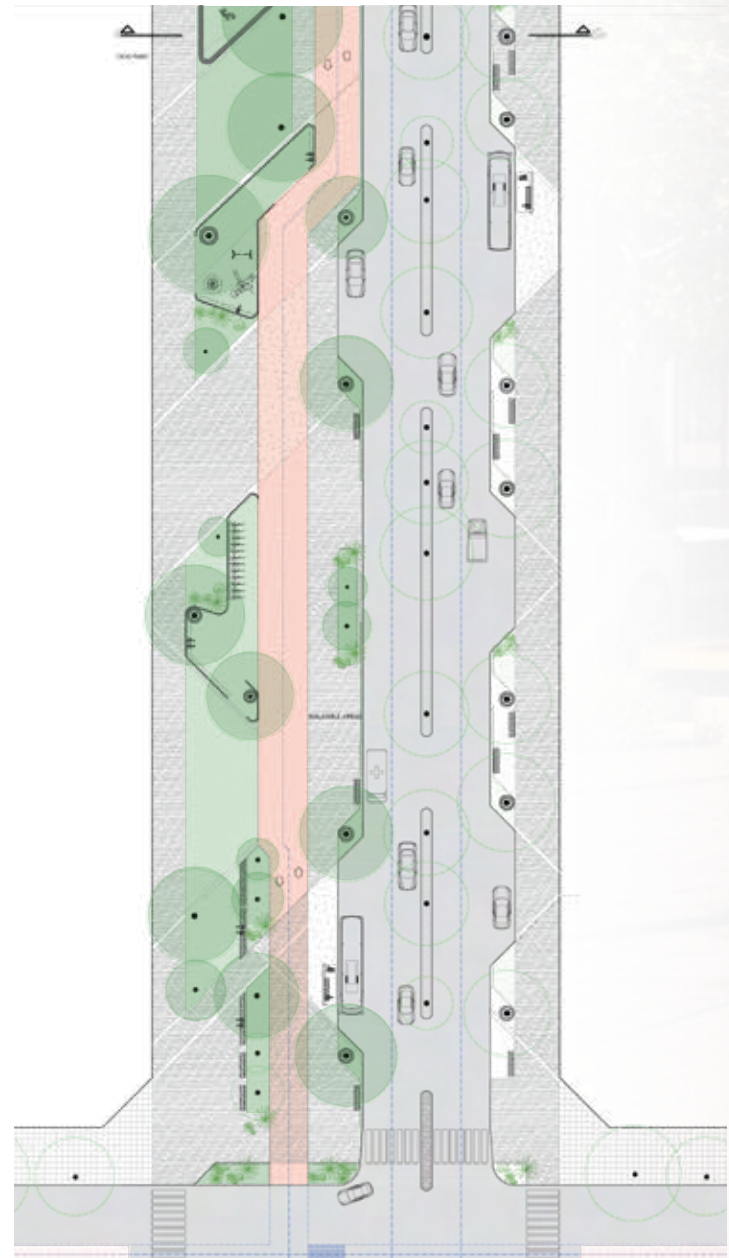
K Street as park

STREET AS.... sidewalk

STREET AS TODAY
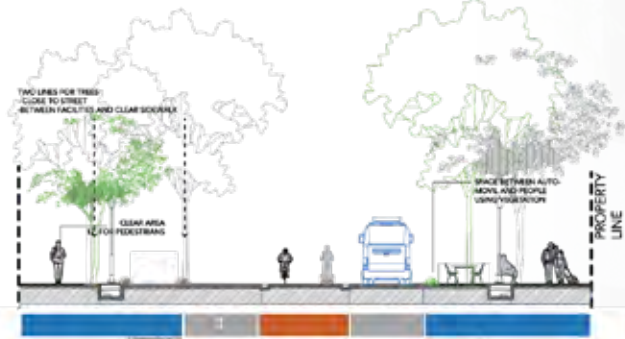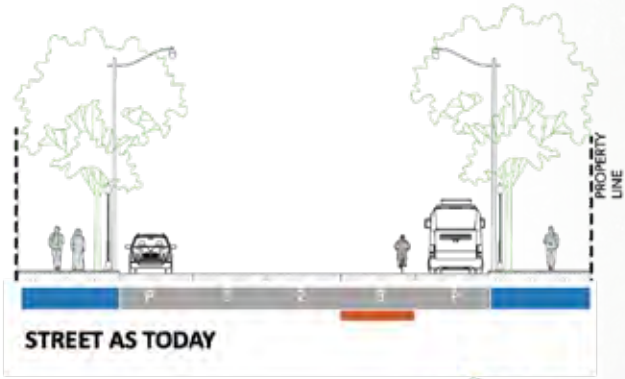
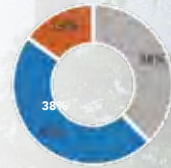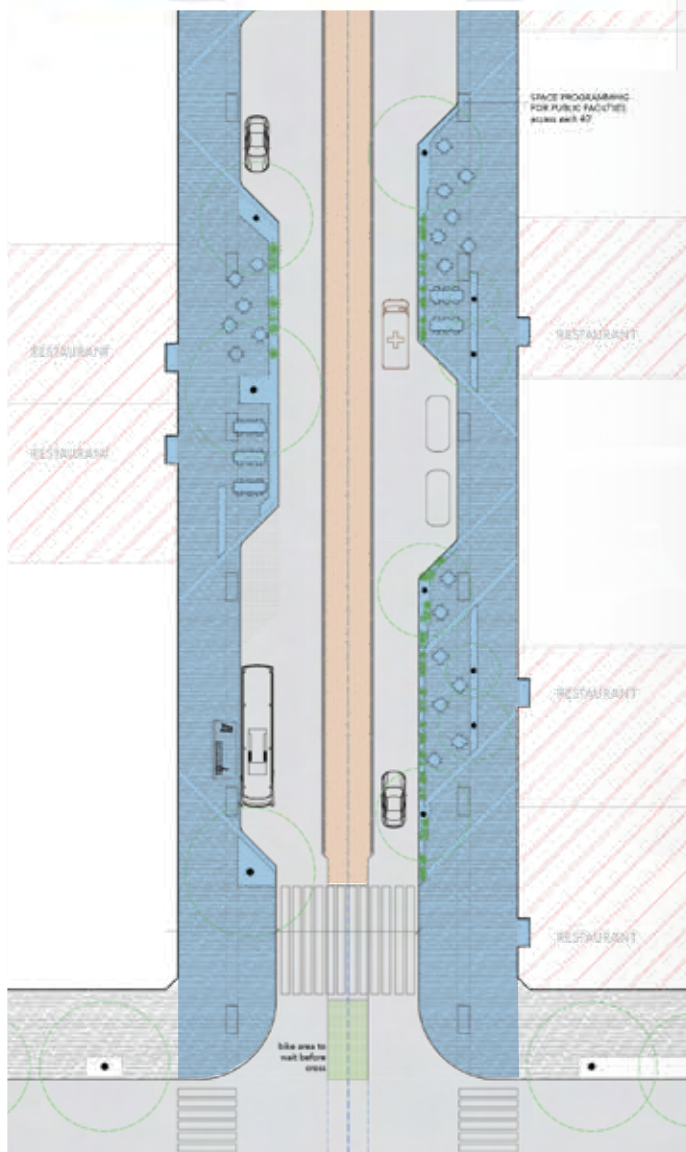### PRYMARE SPACE DESIGNATED

- Traffic Lane - Sidewalk

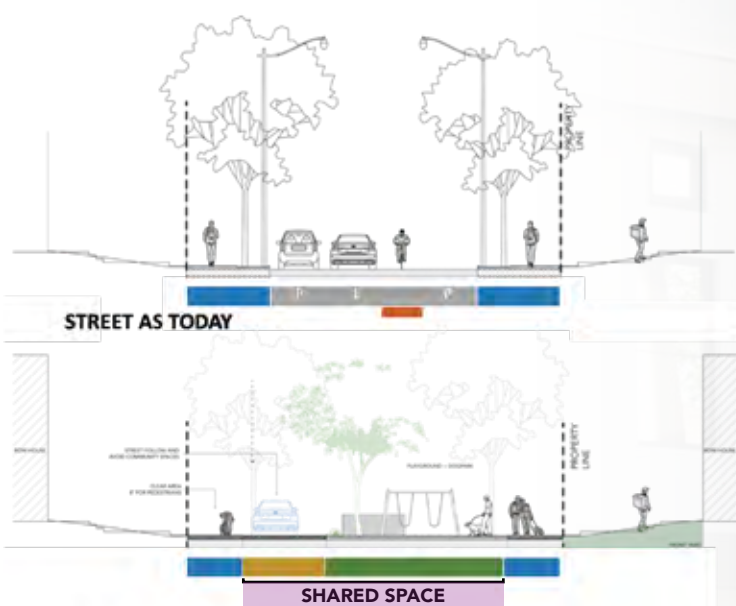The average space designated is calculated within a specific block encompassed between D St NW –E St NW.

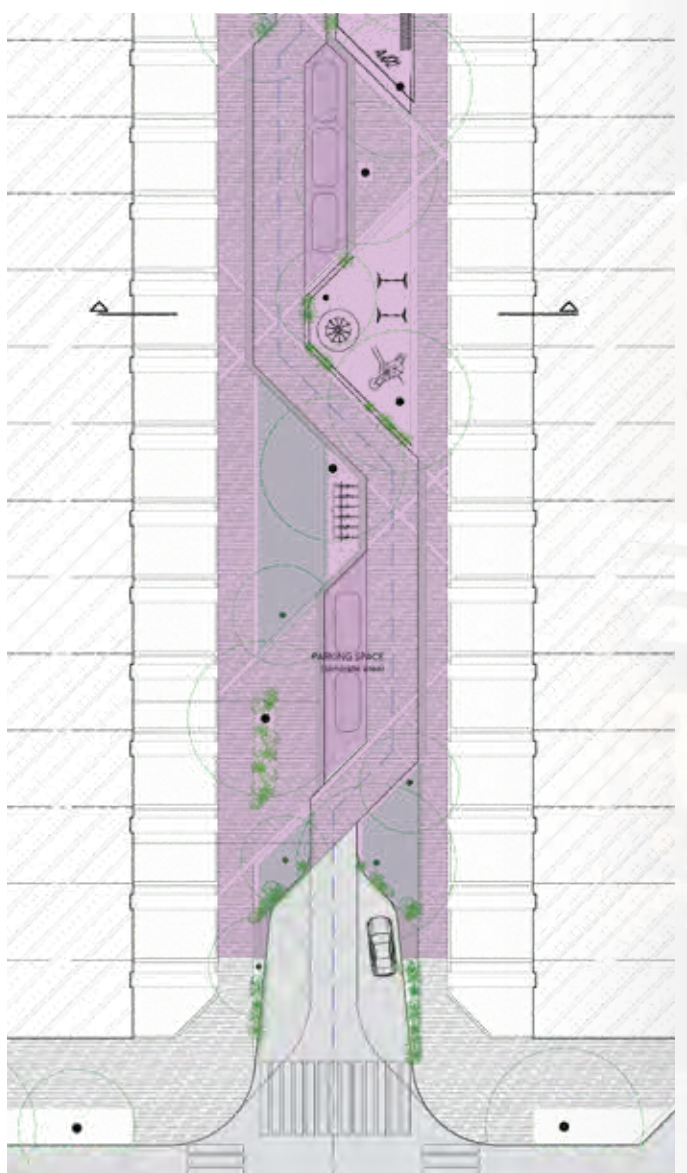- Traffic Lane - Sidewalk - Bike Lane

7th Street as sidewalk

STREET AS.... yyard

STREET AS TODAY

SHARED SPACE

STREET AS YARD

PRYMARE SPACE DESIGNATED

56%

• Traffic Lane • Sidewalk

40% 30%

15% 31%

• Sidewalk • Shared ○ Park

CONCLUSION

The widespread adoption of autonomous cars will introduce a new way to move people through cities, and we must be prepared to reimagine urban spaces to reclaim them for humans. Key factors such as street functionality, mobility patterns, and safety will shift dramatically, allowing us to envision streets as **shared spaces**. In these spaces, public areas must be primarily designed for people, while cars are treated as temporary visitors.

Applying this human-centric approach to reimagine the street as a unique landscape is the central finding of this research, illustrating how autonomous cars can help create cities designed for people rather than cars.

Corcoran street as yard