

[Section 3:30] [Shared Space] [Team Super Blocks]

Home Contemplative Practice, In-class activities, and Homework Team and Project Overview Assignment 7: Individual Research Prospectus

Vision

Our vision focuses on optimizing the efficiency and safety of the transportation infrastructure in the city of Charlottesville. As students of the University of Virginia, we have recognized a lack of safety measures for both pedestrians and vehicles in the city. As Charlottesville moves towards developing denser public areas, increased mixed-modal transportation is foreseen and therefore certain standards and measures should be put in place. With considerations such as smart traffic monitoring, designated mixed modal transit lanes, and shared pedestrian spaces, Charlottesville can improve its existing infrastructure to prepare and support radical changes in the coming decades.

Background and Literature Review

US Transit & Transportation:

In the United States, the vast majority of people seeking to transport during rush hours use private automotive vehicles for two reasons: one is that most Americans reside in low-density areas that public transit cannot efficiently serve, second is that privately-owned vehicles are more comfortable, more private, more convenient than other types of transit in America, and also more versatile in doing multitasking on one trip than almost any form of public transit. In America, 87.9 percent of America's daily commuters are using private vehicles, and millions want to move at the same times of day, United States's fundamental problem is that its road system does not have the capacity to handle peak-hour loads without forcing a lot of people to wait in line for that limited space. Past studies have shown that public transit works best where residential densities are above 4,200 persons per square mile; and relatively dense housing and job opportunities are close to transit stations or stops (B. S.Pushkarev and J.M.Zupan). However, in 2010, at least two-thirds of residents of American urbanized areas lived in settlements with densities of under 4,000 persons per square mile. Those densities are too low for public transit to be effective. Hence their residents are compelled to rely on private vehicles for almost all of their travel, including trips during peak hours.

Charlottesville's Comprehensive Plan:

In 2016, Charlottesville added the 'Streets That Work' design guidelines plan as an amendment to the 2013 Comprehensive Plan. This document recommends design features for local roadways, which "improve the safety and comfort level of all users and contribute to the City's environmental goals". (6) In 2017, Charlottesville held multiple workshops to gather feedback from the community on how to update the Comprehensive Plan for 2018. According to the data collected from these workshops, Charlottesville's community members chose 'Walkability and Bike-ability' as the top answer for the proposed question: 'What makes a great building or development?'. 'Community Feel' was the second highest answer (7).

Research Questions and Division of Labor

How to use Intelligent Transportation System integration in smart transportation to collect and facilitate traffic management, and what are the ethics involved? (Henry)

What are the social and technological constraints on implementing a new traffic system in US? (Henry)

What smart city aspects for transportation and traffic in China could be implemented efficiently into the smart cities of the United States (Sungwoo)

How can technologies such as sensors to improve the safety and efficiency of traffic? (Sungwoo)

How do cities plan on preparing for radical transportation changes in the coming decades? (Ian)

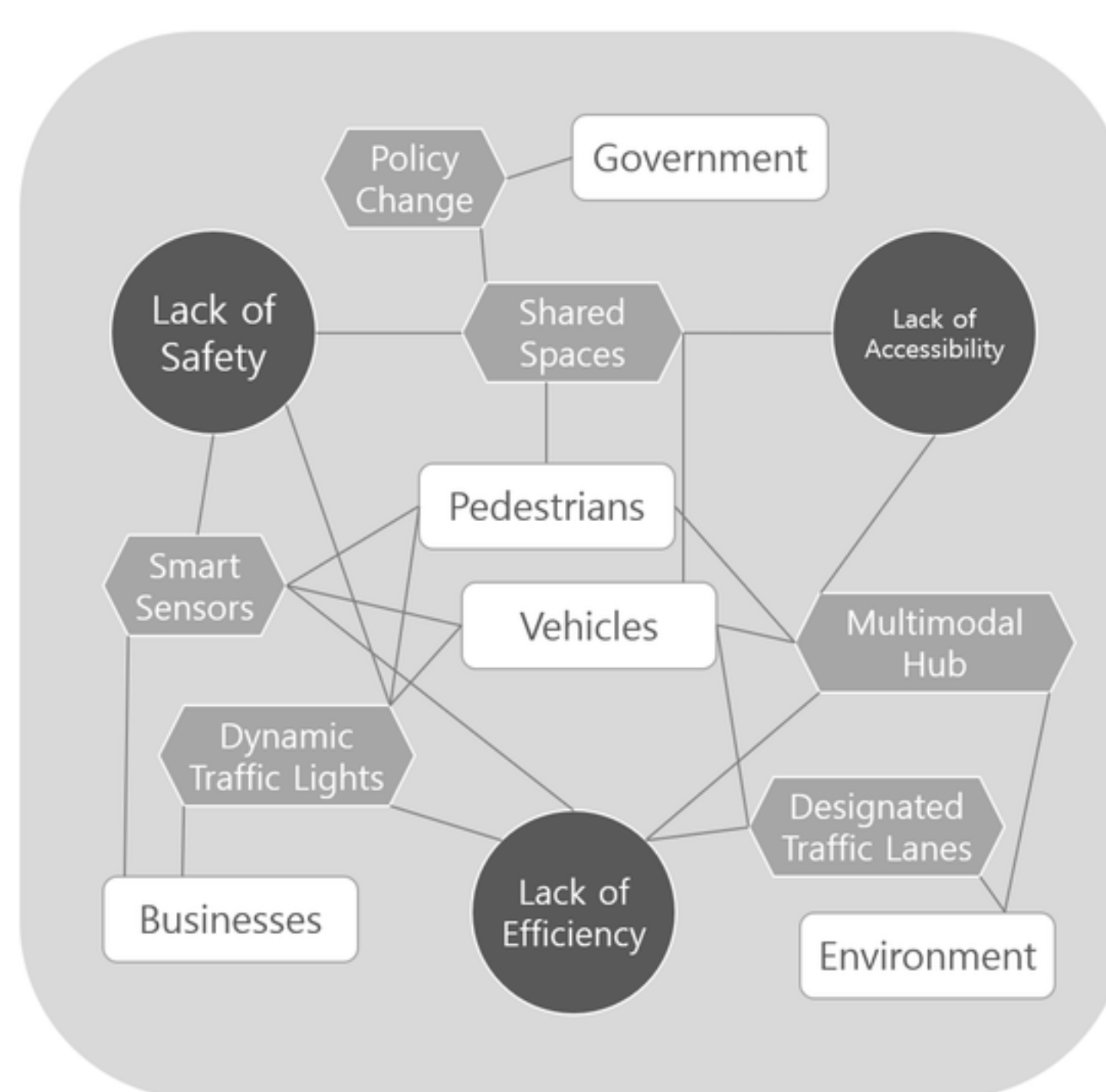
How can the development of Chinese cities be applied in the US despite broad cultural differences? (Ian)

What aspects of infrastructure street design benefit and challenge multi modal accessibility? (Aleyna)

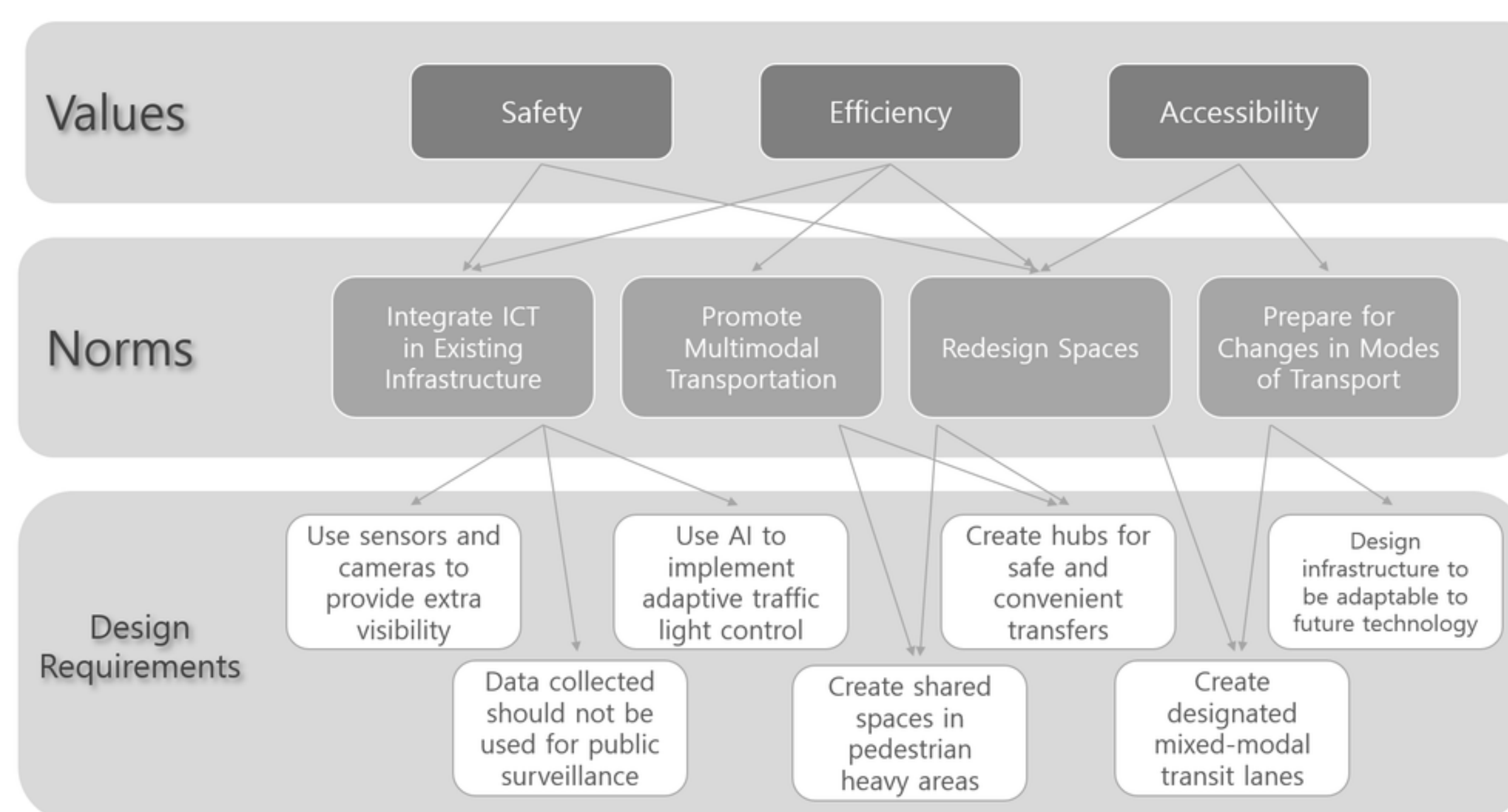
What national/state/local government policies currently support accessible infrastructure and multimodal design? (Aleyna)

How does Charlottesville's Comprehensive Plan and the 'Streets That Work Design Guidelines' initiative set standards for smart technologies? (Aleyna)

Stakeholder Diagram and Analysis



Value Mapping and Hierarchies



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