Planning for Disruption: Making Planning Legible

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Freight for the Future: The Ports of Savage as a CAV Innovation District

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Planning for Disruption

Connected and Autonomous Vehicle (CAV) technology is likely to be impactful on the transportation landscape within cities. Surprisingly few municipalities are developing strategic policies and ordinances to guide CAV disruption. CAV deployment could exacerbate social and economic disparities within cities by serving only affluent interests. Planning for Disruption allows for policy and development suggestions that actively work toward addressing inequities. The project offers scenarios along the Washington Avenue corridor through the Mill District, a downtown core T6 context, and the Lake Street corridor through the Powderhorn area, a main street T5 context. With a Minneapolis context, we utilize the Minneapolis 2040 Comprehensive Plan to establish goals.

The project begins with a review of processes and planning documents guiding AV implementation to-date. Next, the project moves to an analysis of the demographic and structural frameworks of the two study areas to identify existing disparities and opportunities for equity. Next, the background information is incorporated to develop and deploy five equity opportunities within CAV implementation: Improve the Environment, Increase Housing Access, Increase Mobility, Support Diverse Economies, and Improve Public Health.

Finally, opportunities for equity are explored through a series of design scenarios for CAV implementation. We conclude by suggesting phasing strategies for future development and a summary of proposed policies. In doing so, we aim to illustrate strategies for guiding CAV deployment in order to address disparities within cities while improving conditions overall.

Planning for Disruption: CAVs and Equity in Washington and Lake Streets
Freight for the Future

The ports of Savage, Minnesota serve an important role in the regional freight system for the Twin Cities. The ports are privately owned and operated and they, as well as the regional freight system as a whole, face challenges to their continued success. Decaying infrastructure and a declining workforce present issues to freight's future. Connected and Automated Vehicles (CAV) offer potential solutions to both.

The ports of Savage will need to adapt to accommodate the introduction of CAVs. This new technology will transform how the land in the surrounding region is used. These changes will not be instantaneously and adaptations can be phased into the site and surrounding region. A decreased need for pavement allows increased greenspace and can help protect the Savage fen while simultaneously opening the space for recreational use. Additionally, new types of intersection controls can relieve traffic congestion and make moving semi-trucks out of the ports on to Highway 13 easier.

The ports of Savage can benefit from CAVs by encouraging an educational and training museum on land reclaimed from paved surfaces. The Minnesota Department of Transportation (MnDOT) is looking for Requests for Proposals on studying CAV innovations on the regional highway system. MnDOT and Scott County can benefit from studying CAVs in a freight intermodal environment such as that found at the ports.
The CAV Urban Village

Canterbury Park is an entertainment destination offering horse racing, table games, and poker in Shakopee, MN, a suburb of the Twin Cities. Recently, plans have been enacted to build high-end housing near the site. Canterbury Park real estate developers hope to promote what they describe as the “Canterbury Experience” by attracting additional commercial and entertainment development, as well as hotels for tourists to stay nearby. The master plan for the area maintains a 45-acre parking lot, with approximately 10,000 parking spaces, near the Canterbury Park horse racing track.

In this project, we consider the master plan for Canterbury Park in the context of a rapidly approaching future where Connected and Autonomous Vehicles (CAVs) dominate the transportation landscape. Due to a significant decrease in the amount of parking needed by CAVs as compared to human drivers, Canterbury Park’s 10,000-space parking lot will be rendered obsolete. This presents an opportunity to rethink the possibilities for this space.

Our neighborhood plan incorporates the design principles of people-centered design, green space, mixed-use development, and diversity in housing options. In order to enhance the “Canterbury Experience,” we evaluate the existing master plan, articulate a CAV design framework, and apply it to create a neighborhood plan for an urban village in what is currently a 45-acre parking lot. Our project provides a case study in recalibrating a master plan in the context of a CAV-oriented future.
Planning for Disruption

The advent of connected autonomous vehicular (CAV) technology marks the next great transition in our transportation networks. **CAVs have the potential to create more reliable transportation systems** that can dramatically improve roadway safety for everyone. The American Planning Association estimates **50% of cars will be fully automated by the year 2040**. Planning for these changes can help communities harness the many benefits of CAV technology and address the various obstacles to equitable implementation.

The potential for CAVs to **improve safety, efficiency and accessibility** will result in dramatic changes to our transportation networks. This project explores the impacts of CAV technology on pedestrian safety in Scott County by envisioning four phases of CAV implementation in the city of Shakopee. The four phases of CAV implementation are represented through renderings of the same intersection as it changes over time.

To identify potential changes, we analyzed the impacts of CAV technology on land use, infrastructure, policy, and the environment in order to answer the question: **how Scott County can maintain consistency in the design, engineering, and construction of its transit network to ensure pedestrian safety and promote comfortable interactions between pedestrians and CAVs?**
The CAV Urban Village

How can Scott County provide equitable, inclusive public transportation for residents needing door-to-door transit services in rural areas?

Shared Mobility for All? is a project proposal by Scott County to address the shared mobility needs of senior residents. As Baby Boomers - the most populous generation in the U.S. - matures, the demands on shared mobility will increase. By examining this issue in the context of connected autonomous vehicles (CAVs), we clarify the assumptions made by shared mobility literature and challenges faced by riders. The three communities in our study, Shakopee, Jordan, and Belle Plaine, are included for their representation of unique demographics along the Highway 169 corridor.

We use the following qualitative research strategies to inform land use planning recommendations: (1) a survey to be administered on bus routes in Scott County, (2) a participatory mapping exercise, and (3) stakeholder interviews.

We then analyze our data and include a document analysis with field notes and precedent cases. Our findings challenge the assumption that shared mobility efforts should focus solely on senior citizens; we instead argue they should be tailored to the needs of low income and disabled persons, which often include seniors. We make six distinct recommendations for shared mobility in Scott County, and recommend that qualitative data collection continues as part of a more holistic and inclusive approach to planning for a future with CAVs.

Shared Mobility for All? CAVs and the Intellectual Disabilities in Scott County

Emily Reno / Corin Bemis / Shanda Hunt / Isaac Hose-Raney
A Renaissance in Transportation

A Renaissance in Transportation explores how connected autonomous vehicles (CAVs) could improve regional connectivity between Minneapolis and rural Minnesota. As a case study, we look at the journey on U.S. Highway 169 from Minneapolis to the new site of the Minnesota Renaissance Festival, which will be located just outside of Jordan, MN. New technology, such as CAVs, often reaches rural regions well after urban ones due to the lack of wireless infrastructure in the region. Rural regions also require the technology to serve needs that may not necessarily be addressed in an urban context requiring the technology to be tailored towards these specific needs. With population increases expected over the next twenty years, we are proposing rural Minnesota update its transportation system for a CAV future that will accommodate the future population increase of Scott County.

In our recommendations, we highlight how the decreased need for parking associated with CAVs will allow current parking garages to be retrofitted and transitioned into an office space, parking hybrid structure. Next, in order to better connect these rural areas, we propose transitioning park and ride structures into rural public transportation networks that can connect these previously unconnected regions to public transportation. Additionally, in order for CAVs to enter rural areas, a network of 5G cells will need to be installed along major travel corridors such as Highway 169. Finally, we review how parking lots that will no longer be needed could be used as a CAV maintenance hub in rural areas, providing storage, upgrades, and general maintenance work for CAVs.
“Planners frequently create documents and reports that capture the research, recommendations, process, and stakeholder input that are central activities to planning work. These documents are a synthesis of written and graphic materials from many sources.

However, there is no industry standard for planning documents.

While planning documents are very diverse as far as the breadth and depth of topics and the types of plans being prepared, planning agencies and consulting firms would benefit from some standards to guide the creation of these documents.
Visual Turn in Public Policy

- Public Policy is starting to engage visual formats not only for representation but also for collaborative/deliberative processes.
  - Visual Mapping yields collaborative advantage & goal categories (Bryson et al 2016)
  - Boundary Objects (Quick & Feldman 2014)
  - Material practices as sense making (Stagaliani & Revasi 2012).
The Problem
If you want to kill an idea....
put it in a report

If you want to bring an idea to life....
create a social space
Planning Policy Narrative

• Poster presentation format assembling textual and visual elements to tell a story about people, infrastructure/policy and place.

  – Goal 1: Identify the problem
  – Goal 2: analyze the data
  – Goal 3: propose solutions
  – Goal 4: Foster a social space
Every Planning Narrative is Different

• Proposal Based
• Analysis
• Scenario Building
• Site Specific Design
• Iterative and Process Oriented
Making the Poster
Student Work
General Outline
Producing the Narratives – General Outline
We begin by sketching a Template for all the posters
This will change.
We refine the elements of each poster
Producing the Narratives – Use of tracing Paper
Markups – Offering Students Feedback
Critical Questions about the proposal

- Why should anyone care about this proposal?
- What are the evidences for your proposal?
- Who is your proposal benefitting? Why?
- What are the best ways to represent your proposal?
- Why are you claiming information in a particular way?
- How can we make your proposal memorable?

Etc.....
Poster production = Iterative process

• It takes from 10 to 15 iterations to produce the final version of the proposal.
• The posters are always changing and evolving until the last day of class. This is what makes them good.

This is what makes them so...... good.
Social Learning
Mid Review - Social Learning with partners
Community Presentation
Community Exhibit
Making Planning Legible

Urban and regional planning students help City of Ramsey visualize new policy ideas & find ways to be more resilient

What good is data-driven policy research if it lives in a three-ring binder on a shelf? If it’s so text-heavy that the people who need to hear about it just can’t get around to reading it?

This is the problem Assistant Professor Fernando Burga is trying to solve in his Land Use Planning class.

Partnering with the Resilient Communities Project, Burga’s students are learning how to develop land use planning solutions in suburban areas and developing data visualization techniques (and some deep Adobe Creative Suite) to show real policy solutions.

Resilient Communities Project (RCP) is a program of the Center for Urban and Regional Affairs (CURA) at the University of Minnesota, and is a cofounding member of the national Educational Partnerships for Innovation in Communities (EPIC) Network. Each year a Minnesota community is awarded the one-year partnership, and then works with CURA and its partner faculty and courses to investigate ways to become more sustainable and resilient.
Representing the Equity Figure

Site Planning for Cultural Districts

The development of urban planning policy is seldom explored through the experiences of people who inhabit the actual places that plans produce. This project focuses on four corridor site plans for cultural district policies in the City of Minneapolis: Broadview, Central, Lake, and Nicollet.

Throughout the posters, we will articulate the values and needs of people living in the corridors through equity figures. This will offer us local perspectives about the corridors.

1. Introduction
2. Economic
3. Transit
4. Housing
5. Site Planning Scenario
Planning for shared mobility