

## Theses and Professional Projects: 2017/2018AY

### Master of City and Regional Planning

#### City and Regional Planning Department, Cal Poly San Luis Obispo

For fulfillment of the MCRP degree at Cal Poly's CRP department, the student may choose between developing a thesis or a professional project, or a specific individual project in a final planning studio. The following abstracts are from master's theses and projects defended in the 2017/2018 AY. They are available upon request. Most can be download from Cal Poly's Kennedy Library at <http://digitalcommons.calpoly.edu/theses>

#### **Exploring the Relationship of Urban Form and Mental Health in the 500 Largest Cities of the United States.**

*Daniel Sam Harrison*

Sustainable development efforts frequently focus on understanding and promoting the factors that influence health and wellbeing. Despite hypothesized reports of urban environments being less conducive to good mental health than natural environments, few studies have investigated the effects of urban form (size, density, nuisances, transportation, and housing characteristics) and mental health measures at the city level. The aim of this study is to test the association of urban form and psychological distress using a cross-sectional analysis of individual health survey responses. Mental health data was collected from a study by the Center for Disease Control on the 500 largest cities in the US. Urban form data was collected from both the US Census and GIS datasets. Linear regression and factor analyses were used to estimate the relationship between psychological distress and urban form, and the results suggest that urban density is negatively associated with mental health status at city level, confirming existing research. However, housing cost and diversity were slightly negatively associated with mental health, while transportation cost and employment access were slightly positively associated.

#### **Assessment of the Potential of the Stations of the California High-Speed Rail as Hubs for Physical and Economic Development.**

*Seitu Akira Coleman*

This study investigates the potential for developing catchment areas around the proposed stations of the California High-Speed Rail System. It was prompted by a review of practices of Japanese railway groups that engage both in train operations, and in business diversification and property development in the station areas. These actions allow the groups to diversify their revenues streams, increase ridership on their lines, and operate as a whole with net profits. This is in contrast to transit agencies in the United States, which only focus on transporting passengers along their lines and do not engage in other commercial activities. Since planning for station areas to turn

into commercially successful activity centers is a new concept in the United States, a methodology has to be developed to assess the potential for development of station areas. This study set out to answer the two questions: 1) To what extent are the locations of the California High-Speed Rail System's planned stations currently attractive to development within their respective contexts? 2) Given the information gathered from the study, what policies should be taken to enhance the future development potential of the California High-Speed Rail System's planned stations as activity centers within their respective station areas? The findings of this thesis suggest there is potential for all stations to enjoy substantial development opportunities if the proper plans, policies, and business strategies are implemented early on and at the corridor level to make the station areas attractive for development.

#### **Developing a New Tourist Economy for a Historic City - A Strategic Plan for Guadalupe.**

*David Christie*

Guadalupe is a small an agrarian city at the intersection of Highway 166 and the famous Highway 1, in the Santa Maria Valley, a beautiful region of California's central coast. Lying between fields, hills, and ocean, Guadalupe is less than four miles away from the Pacific and the dunes it lends its name to, while its northern border is marked by the, often dry, Santa Maria River. The town is rich in history and cultural heritage, the oldest vineyards are in the same valley and wine tourism is burgeoning in the region, but Guadalupe is not a part of this economy. This project develops a Strategic Tourism Plan for Guadalupe, envisioning the town as a regional gateway with a sustainable tourism economy that is respectful of existing natural and cultural resources. The plan promotes a planning process directs social, economic, and environmental benefits across a wide range of sectors.

#### **Bus Stop Enhancement Strategy in the City of Guadalupe.**

*Jessica Edmondson*

This project seeks to promote sense of place and improve the waiting environment at bus stops in the City of Guadalupe

through urban design. Because bus stops are embedded into the neighborhood, the recommended improvements will not only benefit riders, but also the immediate public realm. A well-designed public space leads to greater walkability and a safer environment conducive to more active transportation. In addition, a more comfortable waiting environment leads to greater rider satisfaction and shorter perceived wait times, leading to higher ridership. Seven major goals were identified for a good bus stop: safety, thermal comfort, acoustic comfort, wind protection, visual comfort, accessibility, and integration. The goals can be achieved by ten urban design techniques: lighting, seating and surfaces, cover, amenities, information, vegetation, traffic management, pedestrian infrastructure, bicycle infrastructure, and public art. These techniques are applied to bus stops in the City of Guadalupe. With appropriate urban design expertise, municipalities can quickly develop and visualize public space designs with low costs and widely available technology.

### **City of Guadalupe Food Action Plan.**

*Kylie Hensley*

In the City of Guadalupe, a small community in the California Central Coast, many of residents work in the surrounding agricultural fields growing produce or in industrial processing facilities, as part of a global industrial food system. A food system is the network of activities, resources, people, and policies involved in producing, processing, distributing, consuming, and disposing of food. Food system planning is a collaborative process that brings together people across the food system to assess how they can make changes to improve community well-being. This Food Action Plan identifies stakeholders within the food system in Guadalupe and examines community-based strategies to build on existing initiatives to increase food access, build community understanding and engagement, fight adverse impacts such as exposure to pesticides and groundwater contamination, and invest in local economy and ecology.

### **Affordable and Accessible by Design - Universal Design of Accessory Dwelling Units in Guadalupe, CA.**

*Kyle Jordan*

The United States is experiencing a demographic shift to an increasingly larger aged population. As this population segment continues to grow, cities like Guadalupe will benefit from enhancing the ability for individuals to age in place. As homeowners grow older, their ability to age in their own homes diminishes for many reasons, including housing costs and health or physical disabilities. One solution to rising costs and shortages of housing is to add an accessory dwelling unit (ADU) a primary dwelling unit on a residential parcel. ADU units can utilize existing infrastructure, typically cost less than other types of housing, can ease rental housing deficits, and can provide homeowners a source of supplemental income. Along with affordability, older individuals may have accessibility challenges in these living spaces. A Universal Design for

ADUs can help mitigate against the industrial-design appearance of accessible adaptations, and provide a design for individual dignity. This project provides approaches to construct ADU units as affordable senior housing, educates designers on how to design with Universal Design concepts, and provides an analysis of, and make recommendations for, the City of Guadalupe's updated accessory dwelling unit ordinance.

### **Community Design Guidelines – Guadalupe, CA.**

*Jenny Nguyen*

The City of Guadalupe, CA has a rich history manifested in the character of its downtown commercial corridor. Clearly influenced by Spanish architecture and early ranching settlements, the buildings along the corridor create a distinct community identity and are a source of pride. The goal of the Community Design Guidelines for Guadalupe's commercial corridor is to preserve and enhance buildings, structures, places, and landscapes that contribute to the City's historic and cultural character, providing design professionals, property owners, residents, staff, and decision makers with a clear understanding of the City's expectations for the planning, design, and review of development proposals. Since Guadalupe does not have a Design Review Process, the Guidelines are even more significant to help the administrative body and board of supervisors, can cohesively enhance the identity and character that is widely supported by the community and its residents.

### **A Seal Level Rise Vulnerability Assessment and Adaptation Strategies for the County of San Luis Obispo.**

*Jacqueline N. Protsman*

This project assesses the vulnerability of physical assets to sea-level rise (SLR) in the coastal areas of San Luis Obispo County and proposes adaptation strategies to reduce their vulnerabilities and increase resiliency. Safety Element policies. A SLR vulnerability assessment was completed for 187 assets and asset groupings including essential facilities, infrastructure, private property, high potential loss and hazardous facilities, areas of special consideration, and historic, cultural, and natural resource areas. The assets were mapped and scored for impacts, adaptive capacity, risk aversion, and onset. The results convey the adaptive needs of all assets or asset groupings, and informed the development and prioritization of adaptation strategies utilizing the Vulnerability Assessment Toolkit (Brechtwald, 2018). The project helps to partially complete the requirements from Senate Bill 379, conducts a climate change vulnerability assessment and informs the County Planning Department about vulnerabilities to physical assets that can be addressed in the update of the Safety Element and Local Hazard Mitigation Plan.

### **City of Guadalupe – Urban Greening Strategy.**

*Alyssa P. Way*

Evidence shows that an urban greening strategy not only beautifies cities and improves air quality, traffic safety, and econom-

ic activity but also helps in reducing the effects of greenhouse gas emissions, urban heat islands, and flooding. The City of Guadalupe has recognized the need to adopt an urban greening strategy that includes street trees and landscaping, low impact development, park vegetation, urban agriculture, vegetative barriers, and land preservation. Considering case studies in several cities that demonstrate the practicality and benefits of such strategies and techniques, this work analyzes the current living and climate conditions in the City of Guadalupe and identifies ten focus areas where such strategy and techniques are recommended. As creating and implementing an urban greening network can be costly, especially for a resource-poor city as Guadalupe, this work also identifies a series of regional, and federal funding sources and opportunities. In particular, the State of California provides cities with various grant opportunities for urban greening strategies that are sourced directly from the Global Warming Solutions Act (AB 32).

### **Enhancing Mobility on Guadalupe Street: A Complete Streets Approach.**

*Kevin Yost*

The cultural and geographical center of the small town of Guadalupe, Calif. is its downtown. Running through its center is Guadalupe Street, or State Route (SR) 1, an important road of the California State Highway system under the California Department of Transportation (Caltrans) jurisdiction. Buildings along Guadalupe Street contain historical architecture, murals, restaurants, and other businesses, which combine to make it the City's 'Main Street' and busiest and most active commercial center. This project examines the downtown segment of Guadalupe Street and proposes enhancements through a complete streets approach, improving its safety, comfort, and accessibility all transportation modes, notably to walking and cycling. Funding sources and implementation phases of the recommended design alternative are reviewed. This project's implementation should provide several benefits to the Guadalupe community, including improving the overall health and safety through encouraging more active transportation trips, jumpstarting economic growth by an increase in property values and business transactions, and increasing street vitality through more pedestrian and bicycle traffic.

