The Correlation between Property Values and Frequency of Service at Nearby Public Transit Stops
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ABSTRACT TEXT: Several studies have suggested a positive correlation between property values and the proximity of public transit rail stations, but no similar correlation with the proximity of bus stops. However, most studies neglect to consider the frequency of service offered at these stations and stops. In this study, we search for a relationship between property values and the frequency of public transit service available nearby. Using spatial statistics, GTFS public transit data, and parcel values for several U.S. cities, we examine whether there is a particular threshold of frequency above which a correlation occurs and whether this threshold is different in different cities. Understanding the relationship between transit frequency and property value can help inform economic development planning, transit planning, and real estate analysis.

Assessing Transit Land Use Impacts and Opportunities
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ABSTRACT TEXT: Transit planners must optimize new transit investments based on diverse goals. A few objectives include cost effectiveness, transport efficiency, environmental sustainability, economic development, and promoting equitable social outcomes. MapCraft web application brings many of these complex urban development issues to life in a map-based GIS interface that estimates and visualizes land use outcomes.

This presentation will highlight MapCraft use on the Powell-Division Transit and Development Project, a Bus Rapid Transit (BRT) investment designed with many transport and community development goals in mind. The transit project will make it a quicker trip for the thousands of people who already ride buses along the 14-mile route between downtown Portland, Oregon and downtown Gresham, Oregon and will also support the twin objectives of fostering economic development and community resilience in the corridor. The City of Gresham relied on MapCraft web-based GIS tool to understand the potential for transit-oriented development (TOD), economic development, gentrification, and displacement under various transit investment scenarios. The GIS outputs helped prioritize station investments and also informed local policies supportive of corridor-wide affordable housing goals. In this instance, the web tool was configured for internal use by planners and was also used to generate maps for public engagement sessions.

This presentation will be an introduction to a cutting edge GIS tool that has helped transit and land use planners better understand the diverse impacts and opportunities associated with transit investments.

Impacts of BRT Station Access on Residential Property Values: Case Study of the Eugene EmX
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ABSTRACT TEXT: As communities look to improve mobility, many options can be considered, including public transit. Investment in public transit services can come in the form of increased and enhanced bus services, including bus rapid transit (BRT). As BRT continues to grow in popularity in the United States, a better understanding of the mode impacts on land uses and economic development is needed. One method of assessing the mode impacts is by examining the market value of properties with access to BRT stations. Based on land-rent theory, it is hypothesized that people will be willing to pay a premium for convenient and reliable access via BRT to the central business district (CBD) or other locations with employment, educational, recreational, and shopping opportunities. Little quantitative research has been conducted on BRT as it operates in the present day in the United States.

For this work, the hypothesis is that the BRT stations have a positive impact on the market value of residential properties. To test this hypothesis, hedonic price regression models are used to estimate the
impact of access to BRT stations on the sale prices of surrounding residential properties using a case study of the Emerald Express (EmX) system operated by the Lane Transit District in Eugene, Oregon. Extensive spatial analysis and GIS techniques are used in the construction of the data sets and the data analysis. It is important for decision-makers to have the most accurate and most recent information on the benefits and costs of all transportation alternatives, including BRT.

This type of research provides planners, policymakers, and the transit industry with the best information possible to make sound transit investment decisions in their communities. Work on this project is currently ongoing and will be complete well ahead of the GIS conference in September 2017. Findings and implications of the work will be presented.