



Experiential Learning Seed Grant (ELSG)  
APPLICATION COVER SHEET

Name: [REDACTED]

Email: Planning for An Improved Micro-Transit in Valdosta

Amount Requested: \$ 2,200

Dept: [REDACTED]

Rank: ☐ Instructor/Lecturer  
☐ Assistant Professor  
☐ Associate Professor  
☒ Professor

Status: ☐ Untenured but on Tenure Track  
☐ First Year on Tenure Track  
☒ Tenured  
☐ Staff

Is this a collaborative project? ☐ Yes ☒ No

Collaborator Name: Email: Dept:

Collaborator Name: Email: Dept:

Collaborator Name: Email: Dept:

SHORT PROJECT TITLE: Planning for An Improved Micro-Transit in Valdosta

Is this proposal a revision of a previously submitted proposal that was not funded? ☐ Yes ☒ No

If "yes," is this the first time it has been resubmitted for consideration? ☐ Yes ☐ No

If a resubmission, briefly summarize the major revisions made to the previous proposal:

Please indicate if the proposed project involves any of the following:

- ☒ Human research participants
- ☐ Use of vertebrate animals
- ☐ Biohazards (rDNA)
- ☐ Hazardous waste
- ☐ Radiological hazards

Is this project expected to generate personal income from sales (e.g., book royalties, sale of works of art, etc.)?

- ☐ Yes (Explain in Project Narrative)
- ☒ No

Application Checklist

- ☒ **Application Cover Sheet** (two pages with all signatures)
- ☒ **Project Narrative** (maximum four pages, single-spaced with double-spacing between paragraphs; 1" margins all around; Arial or Times New Roman 11+ point font; following sections identified with section titles)
  - ☒ Project Summary (maximum one-half page suggested)
  - ☒ Alignment with QEP Goals and Student Learning Outcomes
  - ☒ Background and Objective(s)
  - ☒ Project Plan
  - ☒ Anticipated Results
- ☒ **References Cited** (only those referenced in the Narrative; 1" margins all around; Arial or Times New Roman 11+ point font)



- ☐ **Budget** (required template; maximum \$4,000)
- ☒ **Budget Justification** (maximum one single-spaced page; 1" margins all around; Arial or Times New Roman 11+ point font; statement[s] of unavailability of tangible items requested such as cameras, iPads/iPods, computers, software, and equipment >\$3,000 from IT, Media Center, or department)
- ☒ **Facilities, Equipment, and Other Resources** (maximum one single-spaced page; 1" margins all around; Arial or Times New Roman 11+ point font)

I certify that, to the best of my knowledge, the information provided in this application is true, complete, and accurate. I understand that any false, fictitious, or fraudulent statements or claims may subject me to administrative penalties. I agree to be responsible for the conduct of this project and to abide by the terms and conditions of the award specified in the Experiential Learning Seed Grant guidelines.

Signature: 


Date: 

Collaborator Signature: 

Date: 

Department Head Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Associate Dean or Dean's Signature: 

Date: 

**\*\*We strongly suggest that you use Docusign to complete the signature process for the application. If you are new to the Docusign process or need a refresher, please email [QEP@Valdosta.edu](mailto:QEP@Valdosta.edu) at least 10 days before the due date for this application.**

**\*\*All applications must be submitted with all signatures by November 1, 2021 @ 5 pm EST to be considered for review by the QEP committee. Decisions regarding approved applications will be distributed by early December.**

## **Planning for An Improved Micro-Transit in Valdosta**

### **A. Project Summary**

The objective of this project is to lead students in Urban Community Planning (Geog 3510) course to research an improvement plan for our newly started micro-transit in Valdosta under the framework of transportation planning theory while utilizing social science methods and Geographic Information System (GIS) analysis. Students will engage in experiential learning through inquiry and analysis of real-world on-demand transit plans domestically and globally through the application of interviews, field trips, and observation, and construct a transit improvement plan for Valdosta. The research methods will bridge traditional social science methods with cutting-edge GIS technologies and mapping analyses. A GIS system will be constructed that will provide the means to input, store, manage, analyze, and display micro-transit in the chosen communities. Other data will be collected from interviews of transportation planners, agencies, and companies. Analyses will be performed and results will help to construct a better micro-transit plan for Valdosta. Two points need to be emphasized. First, this proposal is part of a broader planned project which studies local transit public policy in Georgia and compares them with results from other U.S. states. Results from this study will be incorporated into the large-scale study for external funding, which will involve more students and collaborators. Secondly, the project fits the objective of experiential learning by training students to use interviews, field trips, and GIS technology to collect and analyze spatial data. Anticipated results will find success and challenges of micro-transit around the world, and students will propose an improvement plan for micro-transit in Valdosta, which fits the objective of experiential learning and service learning.

The importance of the research lies in the proposed investigation of the proposed integrated investigation of fundamental questions to prepare micro-transit improvement plans, specifically for small southern American cities which lack the resource for this type of plan. Public transit is one of the most important needs for our residents. However, existing micro-transit studies have been inadequate, as it mainly focuses on large or medium cities. This research will fill the gap of current literature by examining the existing transit plans and proposing recommendations for small southern American cities like Valdosta. The findings will provide an improvement plan on micro-transit for Valdosta. The final research findings and policy recommendations will be made accessible through presentations and publications for easy dissemination to students, researchers, policymakers, and the general public worldwide, especially for many small cities and rural areas, where micro-transit is needed, but resources for planning is limited.

### **B. Alignment with QEP Goals and Student Learning Outcomes**

This project is in line with the three goals of QEP to support students to engage in experiential learning activities in class. The specific objectives include assisting students in advancing knowledge and understanding of transportation planning policy, with creative hands-on experiential learning and service learning activities to analyze a theoretical concept (transportation planning) on a real-world issue (micro-transit in the world). QEP goals will be evaluated by the following student learning outcomes: Students will be able to reflect in presentation and report on how they develop knowledge, skills, and values as a direct result of experiences of conducting interviews and observing micro-transit operations on the field trips. Students will be able to describe verbally and in writing how they take initiative, made decisions, and are held accountable as a direct result of experiences during the hands-on project, including applying concepts of transportation planning theory, doing literature reviews, forming research questions in groups, designing research methods, collecting and evaluating literature and data, critically analyzing data, conducting interviews, proposing policy recommendations from a real-world perspective, and explaining their work to the general public through publication and presentations. Lastly, students will be able to reflect on how they grow and develop intellectually, creatively, emotionally, socially as a direct result of conducting interviews and field trips outside a traditional academic setting.

All these will be done with collaboration and team-building exercises in weekly classes, under the guidance of the faculty mentor. A large-scale project is planned and it will enable students to expand

comparison analyses to other countries. With Dr. Lu's successful past publication records with undergraduate students, this research is also expected to be published with students as co-authors.

### C. Background and Objectives

The city of Valdosta started an on-demand micro-transit system in the spring of 2021 (City of Valdosta, 2020). Mayor Scott Matheson came to talk to our urban planning class in the fall of 2020 about the need for micro-transit. Our class conducted the research and submitted a feasibility plan for Mayor Matheson, and he thanked us for the work which helped to get the transit started in Valdosta. To contribute to long-term success, improvement plans will be needed. Thus, we need to further research other cities' micro-transit. By interviewing transit operators, transportation planners, customers, and other decision-makers of other communities in person on the field trips and by phone, students will propose the potential improvement plan based on how other cities have implemented their version of micro-transit for their communities.

Despite many significant advances, public transit remains an issue in many communities, especially small and rural communities all over the world. Micro-transit systems are a small-scale alternative to more traditional routed bus transit (Balcombe *et al.*, 2004; Banister 2007; Kawaguchi *et al.*, 2017). By formulating routes based on requested destinations, extraneous costs and wasted time and resources can be avoided (Kapsner, 2011; Miah *et al.*, 2017; Zenasni, 2019). The optimized routes and limited passenger quantities are ideal for smaller communities such as Valdosta. However, they can also be integrated into more extensive transit plans to expand service to otherwise excluded sectors of a city. Micro-transit provides many benefits to the community, with the greatest impact on women, the elderly, people with disabilities, and low-income communities (Holland, 2021; Pew Research Center, 2020).

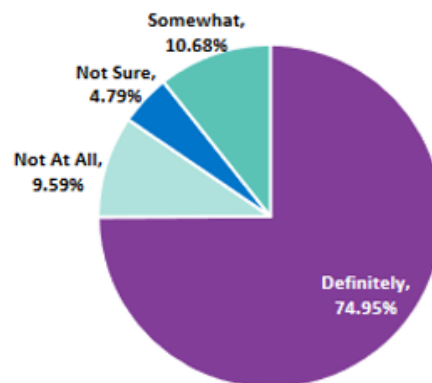
However, most micro-transit studies focus on systems at large or median-sized communities, and limited literature explored them at the rural and small cities, especially in a state like Georgia with many small cities and rural areas where policies are decentralized. Our goal is to fill the gap in the literature by studying micro-transit improvement plans in rural and small cities and comparing them with large or medium cities. The research questions are as follows: What cities and communities have micro-transit and what were improvement plans for them? What were the success and challenges to the micro-transit in those communities? What improvement does Valdosta micro-transit need? What would be our recommendations for Valdosta for improving the new micro-transit? The result will help address the above questions.

The objective of the study is to engage our undergraduate students in experiential learning and service learning activities to apply transportation planning theory to a real-world micro-transit in Valdosta. Other community micro-transit plans will be collected, a GIS database will be developed, and interviews and field trips will be conducted for other community stakeholders. We hypothesize that many communities use micro-transit and their improvement plans vary. There are many success stories to the transit. Valdosta's micro-transit does need an improvement plan. Results will provide improvement suggestions to Valdosta's transit.

This project is a pilot study for a future large-scale project regarding public planning policies in the U.S. Valdosta is chosen as the study site because it is a representative small city with a high poverty rate and a diverse and fast-growing population. According to the U.S. Census Bureau (2020), Valdosta is a growing city with a population of 56,515, according to the 2020 U.S. population census. It is the 17th largest city in Georgia. Valdosta has been growing at an annual rate of 0.36% since the last census of 2010. When cities grow to a specific size, certain services such as transportation and population accommodation become essential. The city needs to fund service programs to accommodate individuals who can not afford alternatives and rely on the local government to help them meet their needs (South Georgia Regional Commission, 2020). For a city of the size of Valdosta, there is no traditional public transit like a bus system, which is a problem for many local citizens who do not have a car or other alternative transit methods. According to Figure 1, the overwhelming majority of residents in Valdosta identified a need for public transit. The newly started micro-transit is helpful for residents, but compared

with other cities, Valdosta's transit needs to be improved and detailed recommendations for future public policies will be given.

*Do you feel there is a need for public transit service in the Valdosta Area?*



(Figure 1: Need for public transit. Data source: South Georgia Regional Commission, 2020)

The intellectual merit lies in the fact that the proposed research complements goals in the study of public transit policy. The research investigates fundamental questions of public transit, which can be generalized to help construct transit plans in other places. In particular, the proposed research will improve the understanding of (1) where micro-transit exist in other communities, (2) the success and challenges of micro-transit, and (3) the need for improving micro-transit in Valdosta. Finally, this research is important for providing improvement suggestions for Valdosta and other similar communities with a diverse population and many small cities and rural areas.

#### **D. Project Plan with Timeline**

Under the framework of the transportation planning model, this integrated research in micro-transit improvement plan will be conducted to address the research questions that cannot be answered satisfactorily when being examined in isolation or within the confines of a single discipline:

1. The spatial distribution of micro-transit in the US and the world: What kind of distribution exists? How does the distribution vary among large, medium, and small cities and rural areas?
2. The success and challenges to the micro-transit in other communities: Are the transit improvement plans in small metros and rural areas different from those of large metros? Are the plans adequate?
3. Suggestions for Valdosta's micro-transit: What improvement does Valdosta's transit need to make? How does the city make it sustainable in the long term?

To answer the above research questions, we will use government and commercial data to build a comprehensive GIS database. Communities with micro-transit will be identified. Locations of micro-transit, road networks, and population will be collected, verified, and geocoded into GIS. GIS maps can demonstrate spatial patterns of micro-transit. Transit planners, operators, and decision-makers in other communities will be identified and contacted for interviews. Interview questions will be designed and conducted. Micro-transit improvement recommendations will also be given to Valdosta. The analyses and a future peer-reviewed journal paper will allow scholars and policy-makers to understand the urgency of infectious disease control policies in the states.

Timeline: From January to mid- February of 2022, students will collect spatial data of micro-transit domestically and globally. Data sources include government records, news media, journal articles, and social media (Facebook, Twitter, Instagram posts, etc.). Transit improvement plans and population data will also be collected. All data will be categorized and geocoded into GIS. Literature review and interview questions will be developed and discussed by students in groups. IRB approval for the questions will be applied. From mid-February to mid-March, interviews and field trips will be conducted, and data from a variety of sources will be verified to make sure they are accurate and up to date. Starting

mid-March, all data will be compiled and undergo analysis. By mid-April, the focus will shift to writing up findings and incorporating them into our final presentation. Finally, the final presentation will be given on April 28, 2022, and Mayor Scott Matheson and other city decision-makers and planners in South Georgia Regional Planning Commissions (SGRC) will be invited to our presentation.

### **E. Anticipated Results**

The findings from the project will answer our research questions. The expected results are as follows:

1. The constructed GIS system will demonstrate the spatial distribution of micro-transit. Many communities use micro-transit and their improvement plans vary.
2. There are many success stories to the transit in other communities and improvement plans also vary.
3. Compared with other cities, Valdosta's micro-transit needs to be improved and detailed recommendations for future public policies will be given based on the analysis and interviews from other communities.

It is our goal that students will continue to expand this research to other countries by working in the future course in the fall of 2022. A presentation at the VSU undergraduate symposium and Applied Geography conference will be given and a paper will be exchanged with other researchers in the future. A final paper will also be submitted to a journal for publication at the end of 2022. Besides, results will demonstrate that larger-scale comparison studies of public transit in general in other states and countries are feasible and necessary for further exploration of the original research questions and comparison of different coms. A large-scale project proposal will be written and sent to the other funding agencies in the future. Thus, with the successful completion of the pilot project, [REDACTED] and her students will have better opportunities to obtain external funding, which will enable [REDACTED] to hire more students and apply experiential-learning and service-learning approaches to enhance students' learning experiences. Given [REDACTED]'s track record in publication with students and grant funding, it is very achievable. With external funding, more VSU students can be supported financially to work on the research. This will help VSU's retention and generate more high-impact experiential and service-learning experiences for our students.

Finally, SGRC Planning Director Ms. Elizabeth Backe, Transportation planner Mr. Corey Hull, and the mayor have also offered to help our class in any way they could. With the support of the professional planners and the mayor, we would expect great success with the project.

### 3. REFERENCES

Amoroso, A. Maria, G. Roccetti, C. Palazzi. (2011). "Comparison of Two Vehicular Safety Systems in Realistic Highway Scenarios." *Journal of Transportation Technologies* (2011): 58-65.

Balcombe, R, Mackett, R, Paulley, N, Preston, J, Shires, J, Titheridge, H, Wardman, M. (2004). *The Demand for Public Transport: A Practical Guide*-Transportation Research Laboratory Report TRL593. Transportation Research Laboratory: London, UK.

Banister, David, Pucher, John, and Lee-Gosselin, Martin. *Making Sustainable Transport Politically and Publically Acceptable*. (2007). *Institutions and Sustainable Transport: Regulatory Reform in Advanced Economies*.

Holland, C. (2021). *The Benefits of Microtransit*. Retrieved from <https://www.liftango.com/blog/the-benefits-of-microtransit>.

Kapsner, C. (2011). *USV Research Creates a Vehicle-to-Vehicle Technology That Could Save Lives*. University of Minnesota, Duluth.

Kawaguchi, H, Tsumura, Y, Danno, M, Kuwahara, M. (2017). *Microtransit Service as an Innovative Countermeasure for the Tangled Urban Transportation Issues in Emerging Economies – A Case Study in Jakarta* Miah.

Lavrinc, D. (2012). *Honda Developing Combining V2V, Coaching Technology to Ease Congestion*. Retrieved from <https://www.wired.com/2012/04/honda-congestion-coach/>.

Miah, M, Naz, F, Hyun, K, Patingly, S, Cronley, C, Fields, N. (2020). *Barriers and Opportunities for Paratransit Users to Adopt On-Demand Micro Transit*.

Pew Research Center. (2020). *Who Relies on Public Transit in the US*. Retrieved from <https://www.pewresearch.org/fact-tank/2016/04/07/who-relies-on-public-transit-in-the-u-s/>.

Research and Innovative Technology Administration, U.S. Department of Transportation. (2015). *Achieving the Vision: From VII to IntelliDrive*.

Rodrigue, Jean-Paul. (2009). *The Geography of Urban Transport*. Routledge; 2nd Edition. Hofstra University.

South Georgia Regional Commission. (2020). *Transportation Plan in Valdosta*. Retrieved from <https://www.sgrc.us/documents/transportation/transit/8625828b5df709abe64b1a5a0eb4ed5a.pdf>.

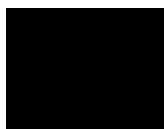
The U.S. Census Bureau. (2020). *The quick fact of Valdosta, GA*. Retrieved from <https://www.census.gov/quickfacts/valdostacitygeorgia>.

The City of Valdosta. (2020). *City of Valdosta Public Transportation Frequently Asked Questions*. Retrieved from <https://www.valdostacity.com/news/city-valdosta-public-transportation-frequently-asked-questions>.

Zenasni, Z. (2019). *Transit On-demand: Case Studies & Recommendations to Support New Mobility Options on Bowen Island, BC*. Retrieved from <https://www.sustain.ubc.ca/about/resources/transit-demand-case-studies-recommendations-support-new-mobility-options-bowen>.

**VSU Faculty Research Seed Grant Program**  
**Project Budget**

Project Sponsor:



Domestic travel - .56/mile (Tier 1 Rate-Automobile)	\$ -	<a href="#">For other travel needs see USG travel rates</a>
International travel	\$ -	<a href="#">Use Federal travel rates</a>
<b>Supplies &amp; Materials:</b>		
Describe: _____	\$ -	
Describe: _____	\$ -	
Describe: _____	\$ -	
Describe: _____	\$ -	
Describe: _____	\$ -	
<b>Contractual Services:</b>		
Describe: _____	\$ -	
Describe: _____	\$ -	
Describe: _____	\$ -	
<b>Telecommunications:</b>		
Telephone survey expenses:	\$ -	
Internet survey expenses:	\$ -	
Describe: _____	\$ -	
<b>Equipment (≥\$3,000 per unit):</b>		
Describe: _____	\$ -	
<b>Other:</b>		
Research Participant Compensation:	\$ -	
Describe: _____	\$ -	
Describe: _____	\$ -	
Describe: _____	\$ -	
<b>TOTAL REQUEST (calculates automatically):</b>	<b>\$ -</b>	<b>Maximum \$4,000</b>

**ADMINISTRATOR APPROVAL:**



\_\_\_\_\_  
*Department Head/Cognizant Administrator Signature*

\_\_\_\_\_  
*Date*

***When you have completed the budget, save the file and print a copy for inclusion in the application package.***

Rev: 09.22.2021



## 6. BUDGET JUSTIFICATION

The justification for the budget is as follows:

Travel: \$800. This will cover the mileage and food cost for interviews of transits in other cities. [REDACTED] and her 15 undergraduate students will travel to Jacksonville, Gainesville, Florida, and Athens, GA to interview local transportation planners and micro-transit operators. Students will also observe the daily operations and talk to drivers and passengers.

### Supplies and Materials:

Softwares (1-year license): 480. This will cover the cost of the 1-year license for SAS and NodeXL to collect and process the data we collected. SAS is great for calculating statistics and NodeXL is great for collecting and processing social media data.

Research data purchase: \$600. This is the amount to purchase data for transit companies and agencies, based on the quote from Infogroup Academic. The company provides the largest business database for academic research. The data will include name, phone number, and other information for the pharmacy. The price is reasonable and the data are reliable. The price is heavily discounted for academic research and the data are very reliable. Based on our research, this company provides better data services than others. They are also on our institutional vendor list.

Materials, paper copying, and binding, printing, posters: \$200. This is the amount to purchasing materials, copying and binding reports and posters.

Telephone survey expenses: \$100. This is to cover the cost of phone interviews of international and domestic transit planners and decision-makers.

Overall, Dr. [REDACTED] only requests less than the ELSG allowed amount. The travel, software, supplies, data purchasing, and survey expenses are essential for this project's success. With Dr. [REDACTED]'s past record of successful grants and national publications with students, this research has the potential to be very successful. With the successful completion of the pilot project, Dr. [REDACTED] is confident that she and her students will have satisfactory results to be published in a respected journal. Finally, Dr. [REDACTED] and her students will have more opportunities to obtain external funding for the large-scale project after the completion of this pilot study. With external funding, more VSU students can be supported financially to work on the research. This will help VSU's retention and generate more high-impact experiential and service-learning experiences for our students.

## **7. FACILITIES, EQUIPMENT, AND OTHER RESOURCES**

Resources used will include the university library journal collections, computers in the department, software such as ArcGIS, Microsoft Word, and Excel in our departmental GIS lab. The GIS data collection will be completed using geocoding methods and remote sensing data of Georgia and other states. In the case of campus closure due to the coronavirus (COVID-19) or other unforeseen incidents, we have remote access to the software (ArcGIS, SPSS, and Microsoft Office) through a virtual lab implemented by the VSU IT. Faculty and students can complete the research with no issues. Faculty and students can also use Microsoft Teams to organize online meetings every week and discuss research issues if we cannot meet in person every week.

In addition, Dr. [REDACTED] obtained support from Dr. [REDACTED], to remote access their GIS Data Center and their special GIS software (which VSU does not have) for analyses of this project should it become necessary in the process. The faster computing power and better equipment at their GIS Data Center will enable Dr. [REDACTED] and her students to finish GIS analysis faster.