Federal Agency and Organization Element to Which Report is Submitted:  
U.S. Department of Transportation Office of the Assistant Secretary for Research and Technology

Federal Grant or Other Identifying Number Assigned by Agency: 9A3551747127

Project Title: Tier 1 University Transportation Center

Center Director:  
Karen E. Philbrick, PhD  
MCTM Executive Director  
karen.philbrick@sjsu.edu and 408.924.7562

Submission Date: April 30, 2023

DUNS and EIN Numbers: 0568207150000 and 94-6017638

Recipient Organization:  
San Jose State University Research Foundation  
210 N. Fourth Street, 4th Floor, San Jose, CA 95112

Recipient Identifying Number or Account Number: Not Applicable

Project/Grant Period: November 30, 2016 – September 30, 2023

Reporting Period End Date: March 31, 2023

Report Term or Frequency: Semi-annual

Signature of Submitting Official: 

Karen Philbrick
Introduction

The Mineta Consortium for Transportation Mobility (MCTM), led by the Mineta Transportation Institute (MTI) at San José State University, conducts research, education, workforce development, and technology transfer activities to improve mobility of people and goods. MCTM unifies and focuses the efforts of four outstanding institutions that represent and support the geographical, cultural, racial, and socioeconomic diversity that makes our nation strong: Howard University; Navajo Technical University (NTU); San José State University (SJSU); and the University of North Carolina Charlotte (UNCC).

1. Accomplishments

Emerging Leaders Seed Grant Program

The Emerging Leader Seed Grant Program engages and develops leadership capacity among junior faculty at SJSU. This program supports faculty in the first five years of an academic position who are interested in exploring transportation research problems aligned with MTI’s research goals and objectives and encourages multidisciplinary participation. To date, MTI has awarded eighteen seed grants to faculty from six of the seven academic Colleges at SJSU.

During this period of performance one seed grant project was funded:

1. Domestic Migrations, Train Travel in the United States 2012-2022: PI McNair Evans, Lecturer, Department of Art and Art History

One emerging leader seed grant was funded in a prior period of performance, but not reported:

1. The San José City (SJC) Bikeway Equity Web Map: PI Ahoura Zandiatashbar, Department of Urban & Regional Planning

Ongoing Research

Since January 6, 2017, MCTM has funded 68 peer reviewed projects, 18 emerging leader seed grants, and 36 commissioned research or white papers. Details on all MCTM projects can be found in the UTC project information sheets.

<table>
<thead>
<tr>
<th>Project Type</th>
<th># Published</th>
<th># in Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTI lead (competitively-selected/peer reviewed, including Caltrans projects)</td>
<td>39</td>
<td>9</td>
</tr>
<tr>
<td>MCTM partner lead (peer reviewed)</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td>Commissioned research/white papers</td>
<td>28</td>
<td>8</td>
</tr>
<tr>
<td>Emerging leader seed grants (peer-reviewed, SJSU lead)</td>
<td>14</td>
<td>4</td>
</tr>
</tbody>
</table>
Leveraging Federal Funds
USDOT has made, and continues to make, a significant investment in developing and sustaining the UTC program and MCTM researchers and staff work tirelessly every day to leverage that federal investment to dramatically increase its return.

As previously reported, MTI has leveraged the UTC investment to secure 12 million in funding from California’s Road Repair and Accountability Act of 2017, 4.6 million from the Federal Railroad Administration in addition to several smaller grants from the Metropolitan Transportation Commission, Google, the Valley Transportation Authority, and the California Air Resources Board. In addition, MCTM partner Howard University received $100K from National Safety Council and Navajo Tech secured 7.5 million from the National Science Foundation and the Department of Energy combined.

Most recently, we are proud to report that after 11 years as a consortium partner, Howard University submitted a proposal to lead a Tier 1 center and were successful in winning that grant! Below is a photo taken of Secretary Buttigieg and other leaders awarding them their check!

Dissemination of Results
MCTM utilizes a diverse array of dissemination methods and media to ensure research results, conference proceedings, and expert interviews reach those responsible for managing change. These methods include publication, seminars, workshops, websites, social media, webinars, and other technology transfer mechanisms.

MCTM continued its #MTIResearchSnaps webinar program. This program provides a diverse audience with access to the latest MCTM research during a short, 30-minute period. This “mini”
format allows individuals to learn from the researchers for 15-minutes followed by a moderated Q&A for the last 15-minutes. Recordings and accessible transcripts for each webinar are available online at https://transweb.sjsu.edu/research/webinars/past and are widely promoted through social media, newsletters, and other MTI communication opportunities.

**Consortium Website**
In compliance with the Grant Deliverables and Reporting Requirements for 2016 University Transportation Centers, MCTM has a website that features all consortium activities: https://transweb.sjsu.edu/mctm. This website is updated regularly with event information, media coverage, and research activities.

**Media Coverage**
During this reporting period, there were **323 MTI stories featured in print, radio, and television media**, bringing the total number of MCTM stories to 3,322 since inception. Links to many of these articles are featured on the **Consortium website** and below is a snapshot of activity:

<table>
<thead>
<tr>
<th>Article</th>
<th>Media Outlet</th>
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<tbody>
<tr>
<td>The Intersection of Data Security and Smart Public Transit Systems</td>
<td>Forbes</td>
</tr>
<tr>
<td>Legislation Would Ask: Are More Safety Studies, Laws Needed for e-Bikes?</td>
<td>The Orange County Register</td>
</tr>
<tr>
<td>Milwaukee County will Institute Fare Capping on Buses, Joining a Growing Number of Municipalities around the World</td>
<td>Milwaukee Journal Sentinel</td>
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<tr>
<td>Infrastructure Sectors Hit Hardest by Ransomware</td>
<td>Miami Herald</td>
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<tr>
<td>Mudslide Traps ACE Train, Passengers, Disrupts Service</td>
<td>KTVU</td>
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<tr>
<td>Professor Comments on Storm-Related State of Emergency, Damages, and Insurance</td>
<td>NTD</td>
</tr>
<tr>
<td>Transportation Industry Awareness, Training Key to Fight Human Trafficking</td>
<td>KCBS Radio</td>
</tr>
<tr>
<td>A Closer Look: Getting to Zero Emissions in California</td>
<td>NBC Bay Area</td>
</tr>
<tr>
<td>California’s Electric Revolution</td>
<td>KTVU-Fox</td>
</tr>
<tr>
<td>How COVID-19 Changed Transportation Funding in the Bay Area</td>
<td>KCBS Radio</td>
</tr>
</tbody>
</table>

**Continuing Education: Opportunities for Growth and Engagement**
MCTM is providing thought leadership and contributing to solutions for some of our nation’s most pressing transportation problems. Through regional forums, national summits, mid-career leadership training, and K-12 workforce development initiatives we help create a connected world. To that end, and during this period of performance, MCTM sponsored/co-sponsored 16
technology transfer and workforce development activities that reached 1,537 attendees; a selection follows:

**SJSU Climate Change and Sustainability Fair** October 18, 2022 • San José, CA: This event provided a venue for the San José State University community to engage with solutions to addressing climate change and its impacts. MTI exhibited its sustainable transportation research projects, elementary lesson plans, and poster contest submissions in the effort to raise awareness as well as promote on-campus engagement with other departments.

**Research to Practice Transit Symposium** October 25-27, 2022 • Online and Gainesville, FL: MTI co-organized this Symposium with American Public Transportation Association (APTA), California Department of Transportation (Caltrans), University of Florida Transportation Institute, and T-SCORE University Transportation Center. The central theme for the symposium was “translating transit research into practice.” As the transit industry is poised to take advantage of the largest transit and rail investment in our lifetimes, the symposium was a platform where transit experts shared insights on how evidence-based research is being or can be used to make the most of these opportunities in a changing environment. In addition to discussions on transit research and practice in the US, a group of international speakers were invited to share transit insights from non-US contexts.

**Connect for Your Career: An Introduction to Professional Associations in Transportation** November 2, 2022 • Online: In partnership with WTS-SF Bay Area chapter, MTI hosted this free virtual event "Connect for Your Career: An Introduction to Professional Associations in Transportation" that introduced university students and emerging professionals to Northern California transportation organizations offering networking, professional development opportunities, and/or scholarship opportunities.

**National GIS Day 2022** November 16, 2022 • San José, CA: In partnership with the Spatial Analytics and Visualization Institute (SAVi) at San José State University, MTI celebrated National GIS Day 2022 with a poster competition and mini workshops for the broader GIS community in the Bay Area. The workshops were presented by Santa Clara Valley Transportation Authority (VTA) and Fehr and Peers.

**Addressing Freight Emissions in San José: Seven Objectives to Reduce GHGs** December 6, 2022 • Online: Freight represents about 30% of transportation climate-damaging greenhouse gas emissions in the United States, but many local climate action plans and freight plans put little emphasis on freight emissions reduction strategies. *Routes to Lower Greenhouse Gas Emissions from Freight Transportation in the City of San José* presents strategies for the City of San José to reduce GHG emissions from freight. While this study focused on GHG emissions from freight in a single city, the lessons gleaned from this case can be applied broadly to other cities and regions. Communities seeking to meaningfully reduce greenhouse gas emissions must focus on emissions from freight as a major contributor. By managing freight demand, utilizing low emissions modes, focusing on the last mile, and other critical objectives, we can reduce the negative impacts transportation emissions have on human and environmental health.
Combating Human Trafficking in Transportation January 24, 2023 • Online: Human trafficking is the fastest-growing organized crime with approximately $150B in annual profits. Like any business, trafficking relies on the transportation network—to recruit, move, or transfer their victims and to move goods produced by forced labor. Therefore, the transportation industry plays a critical role in preventing and combating human trafficking, as well as providing access for many survivors trying to leave their trafficking situation and obtain aid to rebuild their lives. During the National Human Trafficking Prevention Month, MTI hosted a one-hour webinar featuring expert panelists to showcase efforts to combat this issue in the United States. Discussions included the role of transportation agencies in facilitating effective prevention training programs and increasing accurate victim identification, as well as putting in place survivor-centered and trauma-informed response protocols.

Exploring the Use of Public Transportation Among Older Adults During the COVID-19 Pandemic: A National Survey February 7, 2023 • Online: This webinar was the first part of MTI Research Snaps’ Advancing Transportation Equity series. Millions of older adults rely on public transportation in their daily lives, but adults aged 65 years or older often face additional challenges accessing and using public transportation, and this population encountered even more barriers during the COVID-19 pandemic. This event explored how older adults living in major metropolitan cities in the United States used and perceived public transportation during the COVID-19 pandemic. Attendees learned about the potentials of mobile technology as an option for finding transportation information and how this study’s findings may help transit agencies develop effective strategies for meeting older adults’ transportation needs.

The Central Valley Transportation Challenge February 14, 2023 • Online: This webinar was the second part of MTI Research Snaps’ Advancing Transportation Equity series. Students from minority populations and those in rural communities may not have the same established routes to learn about and access educational and professional opportunities as their peers from majority groups. The Central Valley Transportation Challenge (CVTC) provides underserved minority students, who are primarily from rural areas, with high quality transportation-related educational experiences so that they learn about transportation-related topics and opportunities in transportation careers. In this webinar, attendees learned about how the CVTC program empowered underserved students and how this model and its hub can continue making a positive impact in transportation.
Free Transit: It All Depends on How  February 21, 2023 • Online: This webinar was the third part of MTI Research Snaps’ Advancing Transportation Equity series. How can the transportation industry improve equity and ensure it fairly serves all communities? Free (or fareless) transit is presented as part of a solution to many problems—low ridership, growing income inequality, racial discrimination, and even climate change. While it is wholly unrealistic to expect fareless transit to solve any of these challenges on its own, the fact that it is a popular idea presents a substantial opportunity. In this webinar, attendees learned about how free transit, microtransit, and other efforts could make a major impact on equity in transportation and bringing fair, accessible transportation to all.

Voices of Impact February 28, 2023 • Online: This webinar was the fourth part of MTI Research Snaps’ Advancing Transportation Equity series. MTI partnered with the California Planning Roundtable on Voices of Impact, an oral history project focused on identifying how past planning practices have impacted communities of color. The project highlights the voices of people who ordinarily may be reluctant to share their stories—to raise public awareness and to suggest how planning professionals and policy makers can change their practices in response. This webinar shared critical perspectives that often go unheard, created a platform for historically underrepresented communities, and collaborated to find real solutions for injustice in our communities.

When Women Lead: Strategies to Advance Equity  March 21, 2023 • Online: In partnership with the Conference of Minority Transportation Officials (COMTO), MTI celebrated Women’s History Month with a conversation with a diverse panel of women transportation leaders representing academia, public and private industries, and the nonprofit sectors as they shared personal stories from their careers and lessons learned as they rose to the top. Moderated by April Rai, CEO of COMTO and a member of the MTI Board of Trustees, this webinar delved into a critical issue faced by the transportation industry: How are we prioritizing women and other traditionally underrepresented voices to build the most inclusive and effective transportation workforce for our future? What can their success stories teach us about the values of empowering women?
**Student Scholarships**

Each year, MTI hosts an annual awards banquet and convocation celebration to recognize students graduating with their Master of Science in Transportation Management (MSTM) degree. This celebration also serves as a fundraising opportunity whereby MTI secures sponsorships that support scholarships for MSTM students. During this period of performance, MTI awarded $22,000 to deserving students.

**Plans During the Next Reporting Period to Accomplish the Goals?**

No change to the agency-approved application.

### 2. Participants & Collaborating Organizations

**What Organizations Have Been Involved as Partners?**

During this period of performance, MCTM partnered with the 35 organizations listed below.

1. Organization Name and Location: **Alabama A&M University** (Huntsville, AL)
   - Partner’s Contribution to the Project: Fabricated structural components for Formula SAE competition vehicle
   - Project: [Navajo Technical University Workforce Development Components](#)

2. Organization Name and Location: **American Council of Engineering Companies (ACEC)** (San Francisco, CA)
   - Partner’s Contribution to the Project: In-kind sharing of information
   - Project: [Connect for Your Career: An Introduction to Professional Associations in Transportation](#)

3. Organization Name and Location: **American Planning Association (APA)** (Northern California)
   - Partner’s Contribution to the Project: In-kind sharing of information
   - Project: [Connect for Your Career: An Introduction to Professional Associations in Transportation](#)

4. Organization Name and Location: **American Public Transit Association (APTA)** (Washington, DC)
   - Partner’s Contribution to the Project: In-kind support & in-kind sharing of information
   - Project: [Research to Practice Transit Symposium, Combating Human Trafficking in Transportation](#)

5. Organization Name and Location: **American Society of Civil Engineers (ASCE)** (San Francisco, CA)
   - Partner’s Contribution to the Project: In-kind sharing of information
   - Project: [Connect for Your Career: An Introduction to Professional Associations in Transportation](#)
6. Organization Name and Location: Association for Commuter Transportation (ACT) (San Francisco Bay Area Chapter)
   ▪ Partner’s Contribution to the Project: In-kind sharing of information
   ▪ Project: Connect for Your Career: An Introduction to Professional Associations in Transportation

7. Organization Name and Location: Association of Environmental Professionals (AEP) (San Francisco Bay Area Chapter)
   ▪ Partner’s Contribution to the Project: In-kind sharing of information
   ▪ Project: Connect for Your Career: An Introduction to Professional Associations in Transportation

8. Organization Name and Location: Bentley Systems
   ▪ Partner’s Contribution to the Project: Computer and technology resources
   ▪ Project: Howard University Research Projects

9. Organization Name and Location: California Department of Transportation (Caltrans-Sacramento, CA and several district offices)
   ▪ Partner’s Contribution to the Project: In-kind support
   ▪ Project: Research to Practice Transit Symposium

10. Organization Name and Location: California High Speed Rail Authority (Sacramento, CA)
    ▪ Partner’s Contribution to the Project: In-kind sharing of information
    ▪ Project: When Women Lead: Strategies to Advance Equity

11. Organization Name and Location: California Planning Roundtable (Northern & Southern California)
    ▪ Partner’s Contribution to the Project: In-kind sharing of information
    ▪ Project: Voices of Impact

12. Organization Name and Location: California State University, Fresno (Fresno, CA)
    ▪ Partner’s Contribution to the Project: In-kind sharing of information
    ▪ Project: The Central Valley Transportation Challenge

13. Organization Name and Location: Charlotte Douglas International Airport (Charlotte, NC)
    ▪ Partner’s Contribution to the Project: In-kind support (project-related data)
    ▪ Project: UNCC Research Projects

14. Organization Name and Location: City of Charlotte and Charlotte Regional Transportation Planning Organization (Charlotte, NC)
    ▪ Partner’s Contribution to the Project: In-kind support (project-related data)
    ▪ Project: UNCC Research Projects
15. Organization Name and Location: **CommonSpirit Health** (Chicago, IL)
   - Partner’s Contribution to the Project: In-kind sharing of information
   - Project: **Combating Human Trafficking in Transportation**

16. Organization Name and Location: **Conference of Minority Transportation Officials (COMTO)** (Washington, DC)
   - Partner’s Contribution to the Project: In-kind sharing of information
   - Project: **When Women Lead: Strategies to Advance Equity**

17. Organization Name and Location: **District Department of Transportation (DDOT)** (Washington, DC)
   - Partner’s Contribution to the Project: In-kind support (access to signal timing and other field-related-data; traffic control for the safety of students and field technicians during data collection efforts)
   - Project: **Howard University Research Projects**

18. Organization Name and Location: **Institute of Transportation Engineers (ITE)** (San Francisco Bay Area Chapter)
   - Partner’s Contribution to the Project: In-kind sharing of information
   - Project: **Connect for Your Career: An Introduction to Professional Associations in Transportation**

19. Organization Name and Location: **Intelligent Transportation Society of California (ITS California)** (Northern California)
   - Partner’s Contribution to the Project: In-kind sharing of information
   - Project: **Connect for Your Career: An Introduction to Professional Associations in Transportation**

20. Organization Name and Location: **Latinos in Transit (LiT)** (San Francisco Bay Area Chapter)
   - Partner’s Contribution to the Project: In-kind sharing of information
   - Project: **Connect for Your Career: An Introduction to Professional Associations in Transportation**

21. Organization Name and Location: **Lucas College of Business at San José State University** (San José, CA)
   - Partner’s Contribution to the Project: In-kind sharing of information
   - Project: **Combating Human Trafficking in Transportation, Exploring the Use of Public Transportation Among Older Adults During the COVID-19 Pandemic: A National Survey**

22. Organization Name and Location: **Morningbird Foundation**
   - Partner’s Contribution to the Project: In-kind sharing of information
- Project: Navajo Technical University Workforce Development Components

23. Organization Name and Location: North Carolina Department of Transportation (NCDOT: Raleigh, NC)
   - Partner’s Contribution to the Project: In-kind support (project-related data)
   - Project: UNCC Research Projects

24. Organization Name and Location: Santa Clara County Office of Education (Santa Clara, CA)
   - Partner’s Contribution to the Project: In-kind support facilitating Environmental Literacy Summit
   - Project: Environmental Literacy Summit

25. Organization Name and Location: Santa Clara Valley Transportation Authority (VTA) (Santa Clara, CA)
   - Partner’s Contribution to the Project: In-kind sharing of information
   - Project: Combating Human Trafficking in Transportation

26. Organization Name and Location: Spatial Analytics and Visualization Institute (SAVi) at San José State University (San José, CA)
   - Partner’s Contribution to the Project: In-kind support of event promotion and competition judges
   - Project: National GIS Day 2022

27. Organization Name and Location: SYSTRA USA (New York, NY)
   - Partner’s Contribution to the Project: In-kind sharing of information
   - Project: When Women Lead: Strategies to Advance Equity

28. Organization Name and Location: T-SCORE University Transportation Center (Atlanta, GA)
   - Partner’s Contribution to the Project: In-kind support
   - Project: Research to Practice Transit Symposium

29. Organization Name and Location: Toyota
   - Partner’s Contribution to the Project: Hybrid Car Trainer
   - Project: Navajo Technical University Workforce Development Components

30. Organization Name and Location: University of Florida Transportation Institute (Gainesville, GL)
   - Partner’s Contribution to the Project: In-kind support
   - Project: Research to Practice Transit Symposium

31. Organization Name and Location: US Department of Labor – Wage and Hour Division (Los Angeles, CA)
- Partner’s Contribution to the Project: In-kind sharing of information
- Project: Combating Human Trafficking in Transportation

32. Organization Name and Location: **US Department of Transportation** (Washington, DC)
- Partner’s Contribution to the Project: In-kind sharing of information
- Project: **When Women Lead: Strategies to Advance Equity**

33. Organization Name and Location: **Washington Area Bicyclist Association (WABA)** (Washington, DC)
- Partner’s Contribution to the Project: In-kind technical support, AVL data, and other transit-related data
- Project: **Howard University Research Projects**

34. Organization Name and Location: **Washington Metropolitan Area Transit Authority (WMATA)** (Washington, DC)
- Partner’s Contribution to the Project: WABA partnered with HUTRC to create a bicycle near-miss tracker (website) for D.C.’s young bike users and pedestrians. The pilot website will be first used for students in Wards 7 and 8 of the District and will be expanded for citywide usage after incorporating feedback.
- Project: **Howard University Research Projects**

35. Organization Name and Location: **WTS-SF Bay Area** (San Francisco, CA)
- Partner’s Contribution to the Project: In-kind support
- Project: **Connect for Your Career: An Introduction to Professional Associations in Transportation**

### Have Other Collaborators or Contacts Been Involved?
MTI collaborates with a wide range of departments/programs on campus at SJSU. Additionally, several organizations have participated as experts in MCTM summits, conferences and events.

#### 3. Output

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<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Number of completed research reports, including two-page research briefs</td>
<td>4</td>
<td>18</td>
<td>15</td>
<td>19</td>
<td>16</td>
<td>8</td>
</tr>
</tbody>
</table>

*Target goal: 12 reports, including research briefs, annually*

| Number of research presentations at professional meetings and conferences | 15     | 88   | 79   | 117  | 107  | 53   |

*Target goal: 35 presentations annually*
Number of downloads of research reports as tracked through Google Analytics (GA) and ScholarWorks (SW) annually (see Figure 1 below for geographic distribution)

<table>
<thead>
<tr>
<th></th>
<th>GA</th>
<th>GA</th>
<th>SW</th>
<th>SW</th>
<th>SW</th>
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<th>SW</th>
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<tbody>
<tr>
<td></td>
<td>5,259</td>
<td>14,248</td>
<td>17,939</td>
<td>15,380</td>
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<td>(GA)</td>
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<tr>
<td></td>
<td>5,500</td>
<td>12,955</td>
<td>18,307</td>
<td>8,782</td>
<td>6,198</td>
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</tbody>
</table>

Target goal: 3,000 downloads annually

* Number reported through March 31, 2023

Figure 1 Distribution of MTI Report Readers via ScholarWorks, January 1, 2018-March 31, 2023 [67,325 downloads from 3,800 Institutions in 168 countries]

Published Research Reports

During this period of performance, ten research reports featuring the results of MTI-funded research, were published on the MCTM website. All reports are peer-reviewed prior to publication.


Publications, Conference Papers, and Presentations
During this period of performance, 30 academic and professional presentations/briefing featuring MCTM-federal or match funded research and researchers. Three additional presentations occurred in a prior reporting period but had not been included in that report. A selection follows:

<table>
<thead>
<tr>
<th>Academic Presentations</th>
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<tbody>
<tr>
<td>Presentation Title</td>
</tr>
<tr>
<td>1. Planning for Vertiports</td>
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<tr>
<td>2. Briefing on Implementation Strategies and Rate Setting for Road User Charges in California</td>
</tr>
<tr>
<td>3. Data Processing and Visualization to Assess Spatial and Temporal Variations in Operational Performance after Implementing Projects within the Airport Vicinity</td>
</tr>
<tr>
<td>4. A Social Media Analysis of the Prevalence of COVID-19 on Public Transit Ridership in the United States</td>
</tr>
<tr>
<td>5. Decoding the Vertiport: Ground Planning for Urban Air Mobility</td>
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<tr>
<td>7. Aligning the Transit Industry and Their Vendors in the Face of</td>
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</table>

* No federal funding was used to support international travel.
During this period of performance, 3 conference proceedings were published.


Journal Publications

During this period of performance, 7 journal articles were published or are in press.


Books or other non-periodical, one-time publications

MCTM documents 12 publications in this category during this period of performance.

2. Disman, A. (December 2022). *Improving Rail Vehicle Reliability by Performing Component Overhauls at Los Angeles County Metropolitan Transportation Authority* (MTI Perspective)


9. Park, M. (February 2023) *Launching a Transit Revolution: Addressing Barriers Preventing Youth from using Public Transportation to Get to and from School* (MTI Perspective)


**Website(s) or other Internet site(s)**
- An MCTM website is maintained at [http://transweb.sjsu.edu/mctm/index.html](http://transweb.sjsu.edu/mctm/index.html)
- An MCTM presence has been established, and continues to grow, in conjunction with the existing MTI Facebook page - [https://www.facebook.com/MinetaTransportation/](https://www.facebook.com/MinetaTransportation/) and Twitter feed - [www.twitter.com](http://www.twitter.com) - “@MinetaTrans”
- A Howard University led Bike Tracker Website at [https://waba.org/crashtracker/](https://waba.org/crashtracker/)

**Technologies or Techniques:** Nothing to report

**Inventions, Patent Applications, and/or Licenses:** Nothing to report

**Other Products**
- Videobook, “*Investigating the Future of Transportation*”
### 4. Outcomes

#### Performance Measures for Research Outcomes

<table>
<thead>
<tr>
<th>Performance Measures for Research Outcomes</th>
<th>2023</th>
<th>2022</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of technology transfer events (workshops, seminars, webinars, etc.)&lt;sup&gt;a&lt;/sup&gt;</td>
<td>10</td>
<td>31</td>
<td>29</td>
<td>29</td>
</tr>
<tr>
<td>Target goal: 12 annually</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of technology transfer event participants</td>
<td>939</td>
<td>6,860</td>
<td>2,668</td>
<td>2,382</td>
</tr>
<tr>
<td>Target goal: 500 participants annually</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 5. Impacts

#### Performance Measures for Research Impacts

<table>
<thead>
<tr>
<th>Performance Measures for Research Impacts</th>
<th>2023&lt;sup&gt;a&lt;/sup&gt;</th>
<th>2022</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of instances of research influencing policy or practice</td>
<td>7</td>
<td>7</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Target goal: 3 annually</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evidence of impact and exposure based on number of media articles covering MCTM activities</td>
<td>255</td>
<td>1,304</td>
<td>399</td>
<td>334</td>
</tr>
<tr>
<td>Target goal: 50 annually</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evidence of impact on transportation workforce development based on number trained and/or educated individuals (K-12 level)</td>
<td>88</td>
<td>133</td>
<td>1162</td>
<td>1,063</td>
</tr>
<tr>
<td>Target goal: 50 K-12 students annually</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evidence of impact on transportation workforce development based on number trained and/or educated individuals (college level/working professionals)</td>
<td>888</td>
<td>6,727</td>
<td>1,542</td>
<td>1,417</td>
</tr>
<tr>
<td>Target goal: 75 college students and/or working professionals annually</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent of surveyed participants attending MCTM technology transfer events and training programs reporting that MCTM research and training is useful, effective, and impactful</td>
<td>76%</td>
<td>76%</td>
<td>76%</td>
<td>90%</td>
</tr>
</tbody>
</table>

<sup>a</sup>Number reported through September 30, 2022
MCTM documents the following instances of research influencing policy or practice during the current period of performance (October 1, 2022 – March 33, 2023):

1. MTI’s Dr. Asha W. Agrawal was asked to brief Transportation California at the recommendation of the California State Senate Transportation Committee on a potential replacement for the gas tax. [October 2022]

2. Kelsey Burdick, Senior Analyst with the U.S. Government Accountability Office (GAO) contacted MTI’s Brian Michael Jenkins for a briefing related to the security threats facing surface transportation to inform a GAO Report. [November 2022]

3. MTI’s Deputy Executive Director, Dr. Hilary Nixon, and MTI Research Associate Carol Kachadoorian briefed Consumer Product Safety Commission Mary Boyle’s staff on safety issues related to e-bikes. [January 2023]

4. MTI’s Dr. Kezban Yagci Sokat was a featured speaker on human trafficking for the Department of Homeland Security. [January 2023]

5. MTI’s Dr. Serena Alexander, currently serving as a Visiting Scholar of Climate Policy and Infrastructure Resilience at USDOT, was a main contributor to the U.S. National Blueprint for Transportation Decarbonization released in January 2023. Findings from Dr. Alexander’s MTI-funded research were used to inform freight strategies in this report.

6. Senate Bill 381 was introduced in February 2023 and directs MTI to conduct research and submit it to the Legislature, providing evidence-based recommendations for future laws or regulatory changes governing the use of e-bikes, manufacturing data, mandatory safety accessories, and rules of the road.

7. MTI’s research on vehicle ramming attacks was included as part of a security briefing update issued by the Public Transportation Information Sharing & Analysis Center (PT-ISAC) in February 2023.

8. California State Senate Transportation Committee staff contacted MTI noting that our research on transit and homelessness was “heavily quoted” in a committee background paper on this topic. [March 2023]

9. WMATA is using AVL data to increase accuracy of bus prediction models as a result of research conducted by Howard University through MCTM. [March 2023]

**What is the Impact on the Effectiveness of the Transportation System?** Nothing to report

**What is the Impact on the Adoption of New Practices, or Instances Where Research Outcomes Have Led to the Initiation of a Start-up Company?** Nothing to report

**What is the Impact on the Body of Scientific Knowledge?** Collectively MCTM partners are impacting the body of scientific knowledge through the publication of reports, journal articles, conference presentations, technical advising, and other activities. As visually depicted in Figure
1, from January 1, 2018 to March 31, 2023 MCTM reports were downloaded 67,325 times from 3,800 Institutions in 168 countries from the SJSU ScholarWorks archive and there were 84,264 downloads from the MTI website.

What is the Impact on Transportation Workforce Development?

- Graduate student research assistant, Likhitha Yelamanchili, won first place in the graduate student paper competition as part of the Australian Conference on Industrial Engineering and Operations Management. This research was supported by MTI. [December 2022]
- Graduate student research assistant, Tam Tran, was selected as a finalist in the 2023 SJSU Research and Scholarly and Creative Activities (RSCP) Competition. Her research focuses on the challenge of food access for individuals without a car in San José [March 2023]
- A team of Navajo Technical University (NTU) Electrical Engineering students and faculty traveled to Seattle, Washington during the week of October 9 to compete in the American Society for Precision Engineering (ASPE) Collegiate Hardware/Software Design Challenge.
- NTU student, Christopher Wesley, participated in the 2022 Specialty Equipment Market Association (SEMA) Show Student Program, November 1-4, in Las Vegas Nevada.

Additional Successes of Note

MCTM is regularly contacted by academics, practitioners, elected officials, government entities, transit agencies and others to provide information, insight, and briefings on high priority transportation initiatives. The following are of note but do not fit neatly into any of the prior categories, as such this new section has been implemented.

- Peter Romine, MCTM partner lead at Navajo Technical University was asked to participate in a two-day planning meeting in Window Rock, Arizona (Capital of the Navajo Nation) to develop a plan for Navajo Nation Economic Revitalization. The meeting was led by the office of the new Navajo Nation President, Dr. Buu Nygren and representatives of the White House, Department of the Interior, and the Dep. of Energy.

Changes/Problems

- Changes in Approach and Reasons for Change: Nothing to report
- Actual/Anticipated Problems or Delays Encountered: Nothing to report
- Changes that Have a Significant Impact on Expenditures: Nothing to report
- Significant Changes in Use or Care of Human Subjects, Vertebrate Animals, and/or Biohazards: Nothing to report
- Change of Primary Performance Site Location from that Originally Proposed: Nothing to report