



goMARTI



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### Tammy Meehan Russell, MBA/MIM President & Chief Catalyst



A CATALYST FOR CHANGE IN NEW MOBILITY AND SMART COMMUNITIES Innovator | Connector | Tech Geek | Strategist | Servant Leader | Equity Advocate

#### **Select Professional Experience**

**BM** 

GLOBAL BUSINESS DEVELOPMENT LEADER, 3M CONNECTED VEHICLES GLOBAL ECOSYSTEM MANAGER, 3M CONNECTED ROADS 2012 – 2019

CO-CHAIR MN CAV INNOVATION ALLIANCE, WORKFORCE COMMITTEE

CO-CHAIR TX CAV TASK FORCE, WORKFORCE & ECONOMIC DEVELOPMENT COMMITTEE

#### Education

UNIVERSITY OF ST. THOMAS, ST. PAUL, MINNESOTA Master of Business Administration in International Management, Spanish Language Focus: opportunity thinking

UNIVERSITY OF MINNESOTA, TWIN CITIES AND DULUTH, MINNESOTA Bachelor of Arts in Spanish and Business Management, Math Minor Study abroad Seville, Spain

#### Memberships

Consumer Tech Association

Society of Automotive Engineers (SAE)

September 2019 - present

Intelligent Transportation Systems (ITS) America and Minnesota and California chapter





#### Certifications • Certified Scrumma • Certified New Pro

- Certified Scrummaster and Product Owner by Scrum Alliance
- Certified New Product Development Professional by PDMA
- LEAN Stack Coach and Opportunity Thinking Coach







## Justin Johnson Director of Technology

Blending Technical Expertise with Strategic Business Development and Communication

A big picture thinker with a 20 year prolific invention history in R&D for Fortune 100 companies. He is equally equipped to facilitate front end innovation efforts as he is lead a panel discussion at a conference, and has presented globally at CAV and infrastructure related conferences.

#### SELECT PROFESSIONAL EXPERIENCE



OmniAir Director : Board of Directors **2017 – 2021** 



R&D Leader | Product Owner <sup>Life.</sup> 3M Corporate R&D Labs 2004–2022



SAE Connected Vehicle Tech. Committees Voting Member

2015-Present

#### **EDUCATION**

UNIVERSITY OF MINNESOTA -INSTITUTE OF TECHNOLOGY -Honors Program

**BS Electrical Engineering - Honors** 

Minor - Mathematics, Management

#### **ADDITIONAL INFORMATION**

Certified Scrum Master, Scrum Inc.

Certified Scrum Product Owner, Scrum Inc.

28 Patents Granted or Pending

Professional Memberships: IEEE APS, ITS America, SAE,

Boy Scout : Eagle Scout



## Agenda

- The PLUM Catalyst intro
- goMARTI project summary
  - o Goals
  - Stats and figures
  - Lessons learned so far
- Next steps





#### THE PLUM CATALYST

## About Us

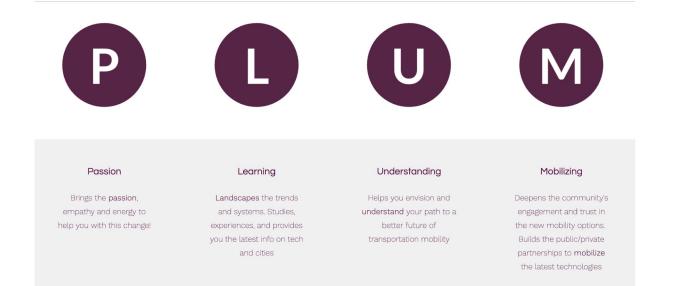
We are a catalyst for change; connecting the new transportation & mobility technology providers with government initiatives. We like to inspire the most valuable ideas and energize teams to make big changes.

We collaborate. We communicate. We lead and implement innovative solutions while bringing out-of-the box thinking in this everchanging marketplace.

Oh, and we have a lot of fun doing it.

## the PLUM approach

Providing the <u>P</u>assion, <u>L</u>earning, <u>U</u>nderstanding, and <u>M</u>obilization



We focus on advancing research and deployment of the emerging transportation technologies that: save lives, improve mobility, promote sustainability, and grow our future workforce

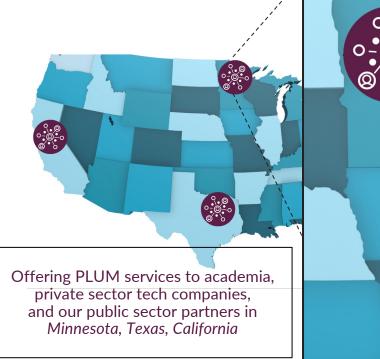
THE PLUM CATALYS

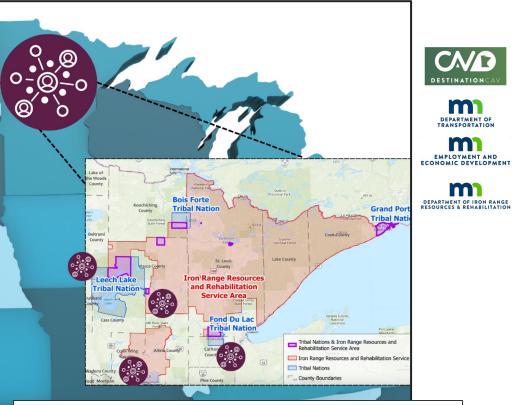


 Connected &<br/>Automated Vehicles
 EV Charging
 Transit Tech
 Workforce<br/>Development

Automated vehicles

& Digital Infrastructure





With programs, demonstrations, and deployment projects throughout Northern Minnesota



the future starts today



#### **Community Development**

Workforce Strategy | Career Pathways | Startups

Engagement

Community | Students



Connected & Automated Vehicles & Digital Infrastructure





EV Charging



Transit Transit

## Meet goMARTI

Minnesota's Autonomous Rural Transit Initiative

Autonomous vehicle pilot program that is operational in rural Grand Rapids, Minnesota.

Tammy Meehan Russell, The PLUM Catalyst goMARTI Project Manager

Justin Johnson, The PLUM Catalyst goMARTI Deputy Project Manager

## **Project Partners**





## **Project Snapshot** Minnesota's Autonomous Rural Transit Initiative





- 18 months of shuttle operations (through March 2024)
- 5 shuttles operating in 16.5-mile area
- Shuttles are requested on demand through the May Mobility app or by calling the First Call 211 service
- Approximately 70 stops programmed around the pilot zone
- 3 shuttles are wheelchair accessible
- Autonomous Vehicle Operator onboard and always engaged
- Rides are free during the pilot
- First rural large-scale launch of a public autonomous shuttle pilot

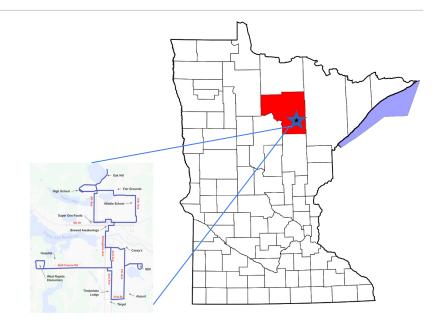




## goMARTI Pilot Zone



- Grand Rapids is in Itasca County (45,180 ppl)
- City Population is 11,280
- Age 65+ is 24.6%
- Minority population 4.3%
- Household income \$48,247
- Persons in poverty 18.2%



goMARTI's pilot zone: 5 shuttles in 16.5 mile area of Grand Rapids











Advance and inform the technology in rural and winter conditions

Engage with the local community and build trust in self-driving shuttles



Accessible mobility options



Workforce & Economic development



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## **Project Stats...**





## 4,275+ riders

87% repeat riders 97,650 miles 34% wheelchair riders



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## goMARTI In Action









Engagement & Outreach





## **Community Listening Sessions**





Category	Life Points of Interest	goMARTI Shuttle Stops					
Entertainment	<ul> <li>YMCA, Rapids Brewing, Cinema, Klockow, Brewed Awakening, Anytime Fitness, Reif Center, Fairgrounds</li> </ul>						
Grocery	- Super One, Aldi						
Grocery/Shopping	<ul> <li>Ace Hardware, Walgreens, L&amp;M Fleet Supply</li> </ul>						
Church	- St. Andrews, Alliance Church, Church of God,	Monday Closed Tuesday 2:00-10:00					
Services	<ul> <li>Hospital, IRC, Library, Schools, DMV, Post Office, Central Square Mall, Courthouse, Civic Center</li> </ul>	Wednesday 2:00-10:00 Thursday 2:00- 10:00 Friday 2:00-10:00 Saturday 10:00-10:00					
Residential and Other	<ul> <li>Lakeshore, River Grand, River South, Pillars, Lakewood Heights</li> </ul>	Saturday 10:00-10:00 Sunday 8:00-2:00 (complementing existing transit options)					



## **Community Engagement examples**

Community Listening Sessions (April 2022)



Emergency Responder Training (August 2022)



Student Tech Showcase & Weekend of Wheels (July 2022)



Community Connect (September 2022 and 2023)



Tall Timber Days (August 2022 and 2023)



Media Launch Day (Oct 5<sup>th</sup>, 2022)





## **Community Engagement examples (continued)**

#### Song Contest (December 2022)



Children First (April 2023)

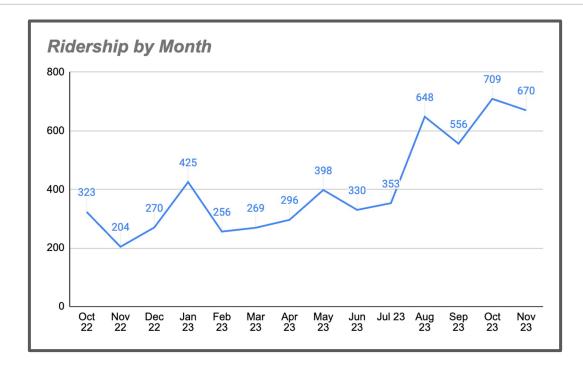


First Call 211 Local informational overviews (Multiple dates)





## **Project Stats...**



On-demand microtransit option needs time to grow ridership in a rural community



## Micro Event Outreach & Route Enhancements

### Route Enhancements

#### Door service is now available for the following

- Communities:
  - Majestic Pines
  - ➤ The Pillars
  - River Grand
  - Lakeshore Place
  - Lakewood Heights
- Healthcare facilities
  - ➢ Essentia Clinic
  - ➢ Grand Itasca Hospital
- Grocery and Shopping centers
  - ➤ Target
  - > Super One North



### Sandwich Boards & App Notifications

Date		Event	Category
9/29	7:00 PM	Homecoming - Varsity Football Vs. Rock Ridge	Football
9/30	9:00 AM	Homecoming - Victory Day - Sat Events	Homecoming
9/30	7:00 PM	An Evening with Riders in the Sky	Reif
10/2	2:00 PM	The Drifters	Reif
10/6	7:00 PM	The High 48s	Reif
10/6		First Friday - October	First Friday
10/7	11:00 AM	The Reif Film Festival	Reif
10/13	7:00 PM	Varsity Football Vs Duluth East	Football
10/13	6:00 PM	Giraffes Can't Dance	Reif
10/14	7:00 PM	Takin' it to the limit (Eagles Trib)	Reif
10/24	7:00 PM	Varsity Football Sections	Football
10/28	2:00 PM	Varsity Football Section-Semi Finals	Football
11/3		First Friday - November	First Friday
11/4	7:00 PM	I am He Said (Neil Diamond Trib)	Reif
11/7	6:00 PM	Daniel Tiger's Neighborhood Live	Reif
11/22		Hockey can start	Hockey
12/1		First Friday - December	First Friday
3/24		Hockey must end	Hockey





# Accessibility focus







## What does accessibility mean for goMARTI?

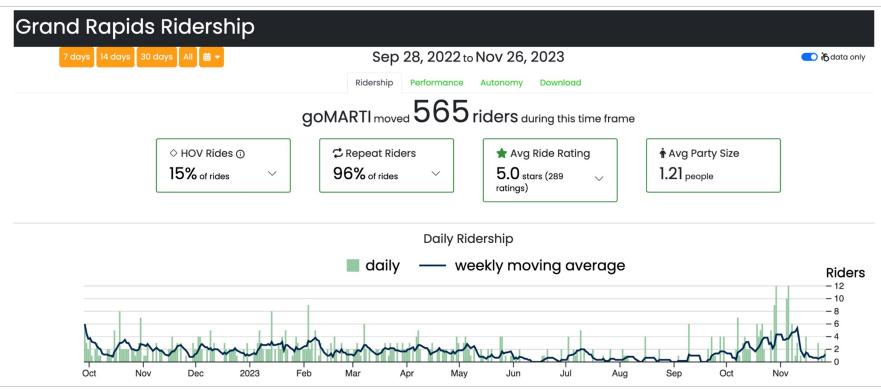
Getting to the shuttle	<ul> <li>Quantifying Access to stop locations</li> <li>Identifying optimal locations for ease of use</li> <li>Investigating App-based tools for IDD users</li> </ul>
Loading and Unloading	<ul> <li>ADA Wheelchair Accessible Shuttle</li> <li>Pickups close to points of interest</li> <li>AVO assist with securing wheelchairs</li> </ul>
Booking a Ride	<ul> <li>Call Center for phone booking</li> <li>Community led training on App install &amp; use</li> <li>24-hour local support for community</li> </ul>

Thesis: Providing accessible transportation requires different capabilities depending on individual needs.

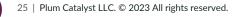




## Wheelchair Ridership Details







# Rural & Winter







## Rural Winter AV Operations Study



#### Winter 1 Snapshot

Baseline winter AV capabilities Snapshot collected

#### Summer 1 Snapshot

Summer AV snapshot collected as normalization data

#### **Improvement Analysis**

Proposal for improvement opportunities for winter weather AV operation

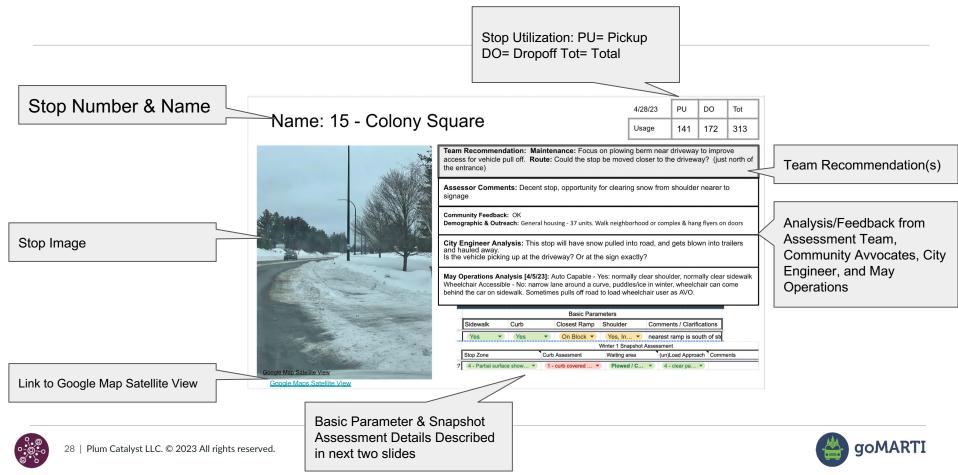
#### Winter 2 Snapshot

Capture final data to understand the impact of improvements





## Shuttle Stop Snapshot Assessment



## Environmental Data Collection

#### Name: 15 - Colony Square



#### 4/28/23 PU DO Tot Usage 141 172 313

Team Recommendation: Maintenance: Focus on plowing berm near driveway to improve access for vehicle pull off. Route: Could the stop be moved closer to the driveway? (just north of the entrance)

Assessor Comments: Decent stop, opportunity for clearing snow from shoulder nearer to signage

Community Feedback: OK Demographic & Outreach: General housing - 37 units. Walk neighborhood or complex & hang flyers on doors

City Engineer Analysis: This stop will have snow pulled into road, and gets blown into trailers and hauled away. Is the vehicle picking up at the driveway? Or at the sign exactly?

May Operations Analysis [4/5/23]: Auto Capable - Yes: normally clear shoulder, normally clear sidewalk Wheelchair Accessible - No: narrow lane around a curve, puddels/ice in winter, wheelchair can come behind the car on sidewalk. Sometimes publis of froad to load wheelchair user as AVO.

Sidewalk Curb		Closest Ramp	Shoulder	Comments / Clarifications			
Yes	• Yes	On Block	Yes, In 🔻	nearest ramp is south of ste			
			Winter 1 Snapshot	Assessment			
Stop Zone		Curb Assesment	Waiting area	(un)Load Approach Comment			

	A	8	С	D	E	F	G		н		1	J	к	L	м	N
1	MAP =	Ŧ	Name/Loca	tion Data 👳	Ŧ			Basic Parameters								
2	Stop #	Stop Name	Direction	Lat	Lon		Sidewalk		Curb		Closest Ramp	Shoulder	Comments / Clarifications		Date	Stop Zone C
3	1	Elementary School	EB	47.223725	-93.565562		No	*	Yes	*	At Inte 💌	No, stops in r 💌	the entrance to the school i			4 - Partial surface s *
4	2	Pillars	NB	47.223512	-93.561585		No	*	Yes	*	At Inte *	No, stops in r 💌				4 - Partial surface s *
5	3	Elementary School	SB	47.221965	-93.561945		Yes	*	Yes	*	At Stop 💌	Yes, Inadequate *				4 - Partial surface s *
6	4	Hospital	WB	47.223086	-93.554332		Yes	*	No	*	At Stop 🔻	Yes, Adequate 💌	sign is "mobile" but didnt se			5 - Dry Road Surface 🔹
7	5	Essentia Clinic	EB	47.2198245	-93.5526245			*		*	•	•				•
8	6	Lakewood Apartme	EB	47.2206077	-93.5500848			•		-	-	•				•
9	7	SW 9th St & SW 6th	EB	47.22254	-93.53709		No	*	Unkno.		At Stop 🔻	No, stops in r 💌				4 - Partial surface s *
10	8	Anytime Fitness	EB	47.221163	-93.531118		Yes	*	Yes		At Stop 💌	Yes, Inadequate *				4 - Partial surface s *
11	9	Klockow/Walgreens	SB	47.220358	-93.527304		No	*	No	*	N/A (E *	No, stops in r *	stop is on a commerical ros			2 - compacted snow ·
12	10	Rocking Round the	WB	47.220185	-93.526687		No	*	Yes	*	N/A (E 👻	No, stops in r 💌	no ramp at or near stop wit			4 - Partial surface s *
13	11	IRC	SB	47.218796	-93.525074		Yes	*	Yes	*	At Inte 👻	Yes, Inadequate *				5 - Dry Road Surface 🔹
14	12	Aldi	SB	47.217919	-93.525233		No	*	Unkno.		On Block -	Yes, Inadequate *	this stop is on a snowmobil			5 - Dry Road Surface 🔹
15	13	2nd & 16th	NB	47.21528	-93.525219		Yes	*	Yes	*	At Stop 💌	Yes, Adequate *				4 - Partial surface s *
16	14	SE 17th St & SE 4th	WB	47.21393	-93.523318		Yes	*	Yes		On Block *	No, stops in r 💌				4 - Partial surface s *
17	15	Colony Square	NB	47.211675	-93.525299		Yes	*	Yes	*	On Block 👻	Yes, Inadequate 💌	nearest ramp is south of sta		2/27	4 - Partial surface s *
18		Beacon Hill	WB	47.210299	-93.522633		Yes	*	Yes	*	At Stop 💌	No, stops in r 💌				4 - Partial surface s *
19	17	River Hill	EB	47.210333	-93.519172		Yes	*	Yes	*	At Stop 💌	Yes, Inadequate 💌				5 - Dry Road Surface 🔹
20	18	SE 17th St & SE 5th	EB	47.213814	-93.520565		Yes	*	Yes	*	At Stop 💌	Yes, Inadequate 💌				3 - Plowed / hardpa *
21	19	Under Construction	SB	47.217529	-93.5183814											

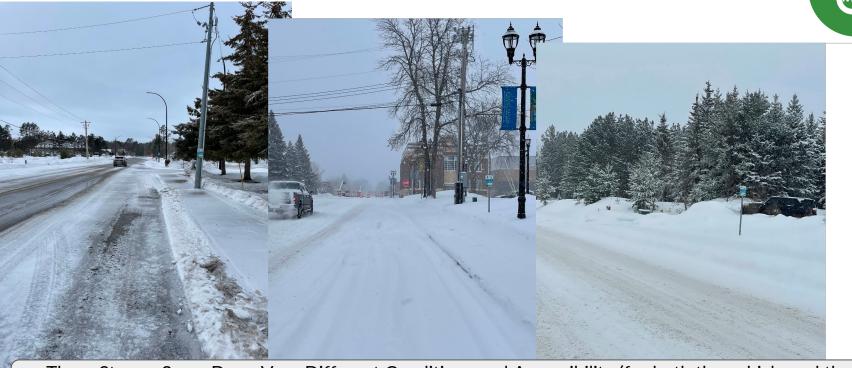


**goMARTI** 



Vehicle data will be collected from May Mobility's Fleet API, labels will be provided by AVO's at each visit to a stop

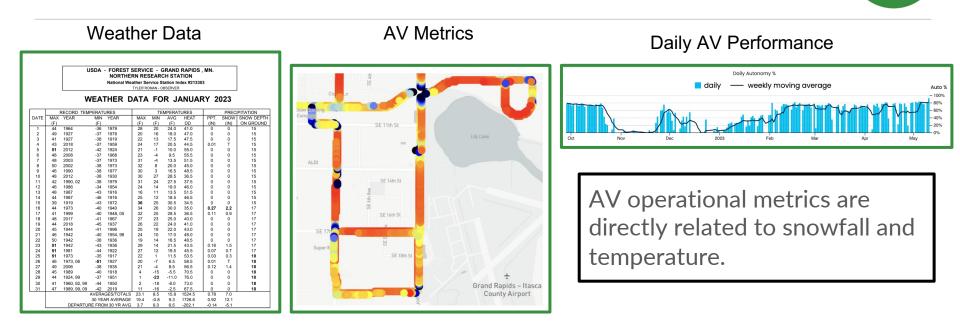
#### Opportunities for Assessing and Understanding Stop Accessibility



Three Stops - Same Day - Very Different Conditions and Accessibility (for both the vehicle and the rider)



## Rural, Winter AV Operational Metrics





## Economic & Workforce Development





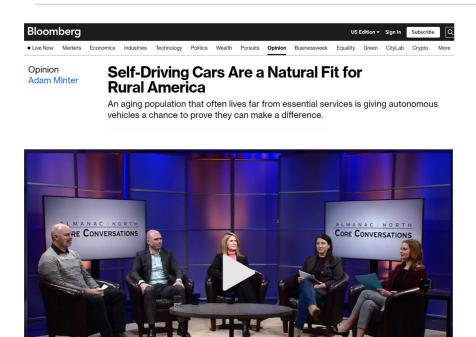
## Career Pathways & Senator Klobuchar @ GoMARTI Launch!

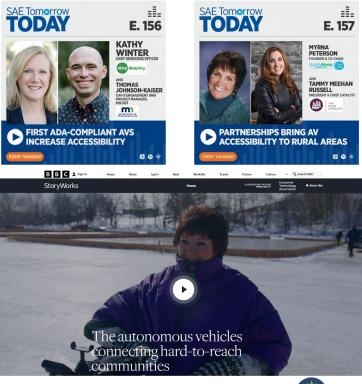






## Media







## Smart Rural Seminar Summary September 21 and October 26 in Grand Rapids, Minnesota

#### THE PLUM CATALYST

September 21st: October 26th:

47 Registered attendees / 24 speakers 55 Registered attendees / 25 speakers (all but 4 were new speakers!)

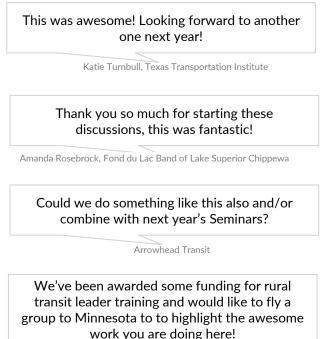
#### Venue:



#### **Topics discussed:**

- Driving Equity in Rural Communities
- Workforce Innovations in Rural
- Future-Proofing Your Rural Community
- Rural Transportation Innovations
- Resources for Rural Transportation
- Creating Technology Ecosystems
- Electrification and Rural Recharge





## Lessons Learned (so far)

**Open, realistic and clear communication** Keep it simple in plain language and set clear expectations for the technology and project Bring the technology to them Acceptance and passion increases when experience technology first hand

#### It takes a VILLAGE

We need the deep community engagement and a community driven project – with an entire coalition to help make this happen

**Continued, proactive outreach to skeptics** *Winning over skeptics goes a long way*  Leadership support

Champions and community leaders can make or break a project

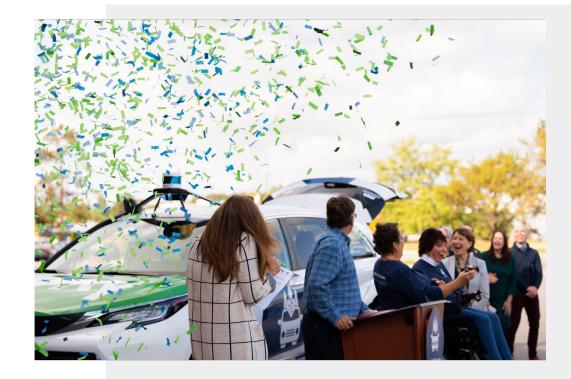
Make it LOCAL

Give local community ownership





## www.gomarti.com





## Questions





#### Tammy Meehan Russell

Chief Catalyst Project Manager goMARTI Cell: 612-999-5670 Email: tammy@theplumcatalyst.com LinkedIn: tammymeehan



#### Justin Johnson

Director of Technology Deputy Project Manager goMARTI Cell: 612-220-8233 Email: justin@theplumcatalyst.com LinkedIn: justinmarkjohnson



## **History of Engagement**



## Blandin Foundation \*\*

STRENGTHENING RURAL MINNESOTA

## New Challenge to Guinness World Record

f 🔽 🖂 🕂



Lee Isaacs and Myrna Peterson

#### UPDATE — Myrna Lee Mania "Come Roll With Us" smashes world record.

The formation of the world's largest moving wheelchair line was a success! Peterson and Isaacs shattered the previous Guinness World Record of 193 wheelchairs in motion by 157 chairs — for a total of 350 rolling "wheelers". Bystanders jumped in when pushers were required and moved barricades back when more room was needed.





## **Engagement Plan**

- · Goals and objectives
- Target audiences
- Key messages
- Engagement tactics
- Defining success

#### goMARTI

#### goMARTI Engagement Plan

July 2022

#### GOAL

To engage with the community on several key components in advance of the launch and installation of an <u>10 month</u> self-driving shuttle pilot in coordination with partners MnDOT, May Mobility, the City of Grand Rapids, Itasca County, the Iron Range Resources & Rehabilitation (IRRR) and Mobility Mania.

#### KEY PROJECT FACTS

- 5 shuttles in a 17+ square mile area
- 70+ stops
- Shuttles will be requested on demand via the May Mobility app or by calling 211
- Art fixtures created by local high school students were developed to help shuttles geolocate
- Additional art opportunities will be developed with the project and will include community
  engagement and participation to highlight local talent and reflect the region
- The pilot will run from fall 2022 through spring/summer 2024

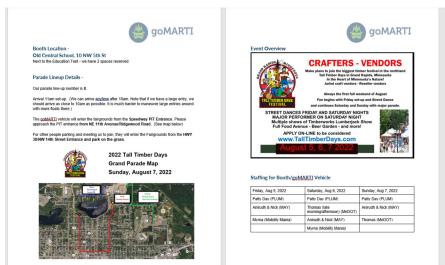
#### PROJECT LOCATION





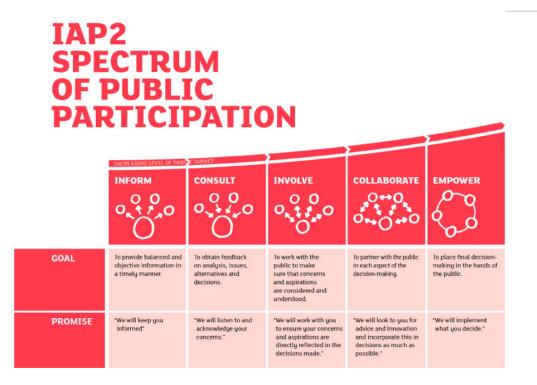
## **Engagement Process**

- Detailed plan for each event
- Partnerships working with community champions to build trust and understand key events
- Meet them where they are at physically and mentally
- Keep it simple





## IAP2



Each level of the Spectrum: Inform, Consult, Involve, Collaborate, and Empower has value; no one is "better" than the other. When selecting the level of public participation, it is important to assess your public participation goals, public and internal expectations, and the needs of the sponsoring organisation. By thoughtfully selecting the level of participation, expectations are managed across all stakeholders, reducing the risk of conflict.

https://blog.placespeak.com/top-5-publicparticipation-tips-from-iap2/



