"Equity in Active Vehicle Transportation Programs and Projects - the need to measure and do it well"
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P.E. (Colombia, AZ)
CPM (2020)
MS, MEP, MPA
Agenda:

• Equity - meaning?
• Why active Transportation vehicles?
• Objectives
• Method
• Result
• Conclusion (working)
• Study cases (AZ)
• Future
Agenda:

• Equity - meaning?
Equity: fairness with which impacts (benefits and costs) are distributed
The Importance of evaluating equity, especially when evaluating the net benefits and the success of public transportation, is the evaluation of the impact that transportation planning decisions has on quality of life.

QOL: Equity affects, and is affected by

- Economic & Social Oppt
- Policies Licenses Codes
- Transportation expenses (external and internal)
- Availability of public resources
- Development location
Agenda:

• Equity - meaning?
• Why active Transportation vehicles?
ATV programs are a response to short trips not covered in public transportation.

- gaps
- short commuting
- convenience trips

Most of the research to date categorize the economic impacts associated with this type of transportation program as: Core, Operational and Geographical.

Not included above is equity.

What about Equity???
Update (April 17, 2019): NACTO’s Newest Report, Shared Micromobility in the U.S.: 2018, updates these figures with 2018 ridership numbers, including those of e-scooter systems.

The Number of Systems Continues to Grow

55 SYSTEMS
42,000 TOTAL BIKES

88 MILLION TRIPS SINCE 2010

Source: NACTO
Very few professionals can be involved in the beginning of a new thinking manner involving an old mode of transportation.

Income-Based Subsidized Passes are Becoming More Common

![Income-based Subsidy in US Bike Share Systems](map)

Goal: All markets should have an “Equity-based” program

Why must we include equity? Simply, we need to balance the finite resources of any transportation system, and the balancing act should be fair and equitable.
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Objectives:

1. Identify the perception on what the users see as important and identify the tradeoffs that are part of their decision process.
2. Determine (through survey) if an ATV program should be equitable and the definition of what this means.
3. Determine if the results represent what program managers, ATV vendors, and public transportation officials measure when determining if their program is equitable and if these measures are used to define the success of their program.
4. Finally, determine if an equity measure is needed and recommend a methodology for measuring equity.
Agenda:

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- Why active Transportation vehicles?
- Objectives
- Background & Method
Background:

- One of the first community bicycle projects in the United States was started in Portland, Oregon in 1994 by civic and environmental activists Tom O'Keefe, Joe Keating and Steve Gunther.
  - **Approach:** of simply releasing several bicycles to the streets for unrestricted use.

- While Portland's Yellow Bike Project was successful in terms of publicity, it proved unsustainable due to theft and vandalism of the bicycles.

- The Yellow Bike Project was eventually terminated and replaced with the **Create A Commuter (CAC) program**, which provides free secondhand bicycles to certain preselected low-income and disadvantaged people who need a bicycle to get to work or attend job training courses.

- **FUTURE:** Community & convenient programs.
Methods:

- Summarize on-going research, conducted between 2017 through 2020 identifying the tradeoffs and measures important for those using or managing ATV programs.

- The research team used platforms of social media to distribute an 8-question survey (all: vendors, government staff, users, researchers, etc).

- https://www.surveymonkey.com/r/5RWKSQG
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The responses obtained identified that two units of measurement should be used when measuring equity:

1. Unit per capita (per adult, per commuter, per peak period of travel, per household) and
2. Per unit of travel (per vehicle-mile/km, per commute trip, etc.

Over ninety-two percent of those surveyed judge that an ATV program should be equitable and that is best to include a variety of issues and perspectives.

The planning and implementation processes must include the community’s equity concerns and priorities therefore public involvements is important for equity planning.
Important – Hear from the user-
As public agency (we do not own, but we need to regulate, define a policy/procedure) what can we do?

Planning: Bikes at convenient locations & provide safe route (1 mile from Light rail, fixed bus routes, school/university, special events) - look for economic development opportunities

Set the staging areas – access, parking, retrieval policy and Use – only in roads with bike lanes? +18 yrs, helmet?, not sidewalk, SUP
  • Easy: Access and return
  • Geofencing – provide map with no barriers (involve community of users, residents, advocates)

User cost: Permit/License & Cost effective – discount programs/busy public transportation/transit corridors
  Fees/fares, $ time, $ trip by similar modes (transit, walking), app, pre-paid, other

Regulation & Enforcement

ATV are using PUBLIC ROADS/FACILITIES:
We are all pedestrians!!!!

Look out for others

And

ourselves
Identify what is important for users of ATV programs alike and what tradeoffs are part of their decision process.

When evaluating equity, we are looking at how trade-offs are balanced (benefits and costs) and whether this is fair and appropriate. Please let us know what impact is most important to you? Scale 1 to 5 (1-high; 5-low)

<table>
<thead>
<tr>
<th>Impact</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Facilities and Services: facility planning and design, funding, road space allocation, public</td>
<td>28.95%</td>
<td>16.79%</td>
<td>28.95%</td>
<td>14.47%</td>
<td>11.84%</td>
<td>76</td>
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<tr>
<td>User Costs and Benefits: Mobility and accessibility, taxes, fees and fares</td>
<td>29.73%</td>
<td>18.92%</td>
<td>17.57%</td>
<td>20.27%</td>
<td>13.51%</td>
<td>74</td>
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<tr>
<td>External Impacts: Congestion, crash risk, pollution, barrier effects, aesthetic, community cohesion</td>
<td>23.39%</td>
<td>31.17%</td>
<td>18.18%</td>
<td>20.78%</td>
<td>6.49%</td>
<td>77</td>
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<tr>
<td>Economic Impacts: Economic opportunities/development/activity</td>
<td>9.66%</td>
<td>16.05%</td>
<td>20.99%</td>
<td>25.93%</td>
<td>27.16%</td>
<td>81</td>
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<tr>
<td>Regulation and Enforcement: Traffic regulation, codes, special risks</td>
<td>8.43%</td>
<td>16.07%</td>
<td>14.46%</td>
<td>21.69%</td>
<td>37.35%</td>
<td>63</td>
</tr>
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</table>
When categorizing the group served by the ATV program what is an important characteristic that should be part of a public transportation decision? Please checkmark all those that apply.

Answered: 83  Skipped: 1

- Demographics: Age, household...
- Income class: Quintiles,...
- Ability: people with...
- Location: Jurisdiction...
- Mode: Pedestrian,...
- Trip type: Emergency,...
- Other (please specify)
Do you agree with these sentences: Because there is no single correct methodology, it is generally best to consider a variety of issues and perspectives. A planning process should reflect each community’s equity concerns and priorities therefore public involvement is important for transportation equity planning.”

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<tr>
<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
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<tr>
<td>Yes</td>
<td>92.77%</td>
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<tr>
<td>No</td>
<td>7.23%</td>
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<tr>
<td>TOTAL</td>
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</table>
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Results show that when selecting the **total cost expresses as percentage of (daily) average income by user per vehicle mile per commute trip**, we are able to include an equity measure as different social groups have different “total costs perceived” per vehicle mile per commute trip. This measure works for both the users as well as for program managers, ATV vendors, and public transportation officials.
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Micromobility in Tempe and Phoenix

Annual Average

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<tr>
<th></th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
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<tbody>
<tr>
<td>Trips per Month</td>
<td>2.6K</td>
<td>4K</td>
<td>1.7K</td>
</tr>
<tr>
<td>Miles per Month</td>
<td>5K</td>
<td>7K</td>
<td>3K</td>
</tr>
<tr>
<td>Minutes per Trip</td>
<td>25</td>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td>Miles per Trip</td>
<td>1.9</td>
<td>1.8</td>
<td>1.7</td>
</tr>
</tbody>
</table>

Arizona Map

GRiD

- Tempe launched in May 2017
- Tempe, Phoenix, Mesa
- 900 bikes (300 in Tempe)
- 120 stations (32 in Tempe)
- Hybrid docked system

Several companies operating in Tempe

- Bikes arrived in December 2017
- E-scooters arrived in May 2018
- E-bikes arrived January 2019

GRiD Performance in Tempe
Community concerns
- Blocking sidewalks
- Unsightly
- Needs regulations
- Too many bikes
- No restaging necessary
- Support concept

City Ordinance
- Chapter 7 – Bicycles and Light Motorized Vehicles
  - Eliminated from code and combined with Chapter 19
- Chapter 19 – Motor Vehicles and Traffic
  - Pedestrian and Human Powered Vehicles
  - Bicycles, E-Bicycles, and Non-Human Powered Vehicles
  - Electric Personal Assistive Mobility Devices (Segways)

Enforcement begins with Education

Dockless Bikes / e-Bikes

City Strategy – Ordinance and License

Bikes, e-bikes and scooters...
- Use a bike lane when one is provided
- Ride in the street when the speed limit is 25 mph or below
- Allowed on the sidewalk when there are no bike lanes available and the speed limit is greater than 25 mph. Exception for minors and parents/guardians accompanying minor.
- Ride with the flow of traffic
- Yield the right-of-way to pedestrians; slow down to 5 mph; and give audible signal before passing
- Riders must be over the age of 16 to operate all non-human powered vehicles (scooters and other electric mobility devices)
- Riders under the age of 18 are required to wear a helmet

Obey all local and state laws.
SATV ROW Use License

- Safety
  - Insurance and liability
  - Federal, state and local laws
- Operations
  - Customer service information
- Data Sharing
  - Real-time API
  - Mobility Data Specifications (MDS)
  - Monthly report
- Fees
  - Annual fee
  - Relocation fee
  - ROW use fee (per SATV per day)

Future Considerations

- Staging
  - ADA compliance
  - Acceptable and unacceptable locations
    - Bus stops
    - Mill Avenue
    - Single-family residential property
  - 24-hour restaging requirement
  - Relocation process
- Operations and Parking Education Plan

www.tempe.gov/satv

Source: NACTO, "Curb Appeal"
Initial Pilot Program Overview

- Three permits issued
- Program launch: September 16, 2019
- Six-month pilot
- Sidewalk riding prohibited
- No ride zones and boundary limits
- Nightly scooter pick-up requirement
- Designated parking location requirement
Ridership and Micro Mobility Demand

- 5-month data
  - +/- 4,000 trips / week
  - 2 trips / scooter / day
  - 8 minutes / scooter trip
  - 1 mile / trip

Public & Stakeholder Comments

- Dedicated email account, phone number & webpage
- 30 emails / phone calls received
- Most frequent comments
  - Parking related
  - Abandoned scooters
  - Sidewalk riding

Lessons Learned

- To be transparent with stakeholders
- Developing working groups with diverse skill sets
- Determine “geofence” delineations and limits
- Provide a accountability plan
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Survey – now we need to hear from you!!!

https://www.surveymonkey.com/r/BN283LF
Equity the need to measure & do it well:

- Equity-based program
- Codes, Ordinances
- Permits, Licenses
- Social Contract
- Public Relations & Outreach
Questions?

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(480) 644-2845
Thank you

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The Arizona ITE board