Gold Team: Tempe Transportation

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Outline

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What's the problem?

Goal: 20 Minute Transit City but...

- In general, Tempe streets see between 35,000-45,000 cars daily & there are 60 cars per lane per mile.

- Buses have 15 minute intervals during rush hour & 30 minute intervals the rest of the day.

- More efficient & extended bus routes could fix this, but bus ridership is lacking and system is inefficient.

- Surrounding city residents hesitant to extend bus routes/transportation.
Riding the 81 Line

- Extends from Chandler Ave. to Raintree & is the major line to the 101.
- Headways are generally slow mid-day & slower during rush hour (over 40 min. mid-day).
- Fare is $2-$6 (extra $2 fee for on bus purchase).
- Stops include large shopping areas & neighborhoods.
- From interviews, riders prefer and like riding the bus!
- We received 82 surveys of riders at multiple times of the day.
- Routes are trackable through apps and texting but this is unreliable & not accessible to all.
- Frequent stops & no pull- aways.

How often do you ride the bus?

Age

- 1-18: 31.7%
- 19-30: 13.4%
- 31-50: 9.8%
- 51+: 45.1%
“How long do you wait?”

How long do you wait at the bus stop?

- 50%: less than 5 minutes
- 19.2%: 5-10
- 11.5%: 10-15
- 16.7%: 15-20
- 20%: 20+

What general Chandler neighborhood stops look like, we waited up to 50 minutes for this bus!
- When there is connectivity, there is an increase in ridership.

~15 Weekday Riders

~80 Weekday Riders

~20 Weekday Riders
“What would you change?”

How comfortable is the 81?

- Yes: 45.1%
- No: 19.5%
- Somewhat: 35.4%

Are routes confusing?

- Yes: 63.4%
- No: 22%
- Somewhat: 14.6%

What needs improvement?

- free
- longer
- connections
- transfers
- people
- coordination
- again
- somehow
- Maybe
- tracking
- kids
- disabled
- cleaner
- transit
- routes
- accessible
- make
- stop
- chart
- wait
- bus stops
- wait
- all
- pull
- run
- night
- services
- school
- driver
- accessible
- extension
- next
- middle
- scheduled
- needs
- app
- only
- Connectivity
- app
- only
- north/south
- water
- time
- comfortable
- fast
Commuter Interviews

What riders are saying about the 81: Generally people like the bus & want more fellow riders!

- Routes are poorly connected to other routes/transit & there is no communication between other drivers.
- Fare is inexpensive but long or unpredictable wait times.
- Frequent harassment on busses and at stops: While some feel comfortable, women feel unsafe & insecure.
- Do not run late enough - resort to Lyft or Uber
- Buses and stops are not handicap friendly spaces.

“Where's the bus?” Personal reflections…

- Easy to navigate & inclusive.
- Harassment is noticeable.
- Generally inexpensive fair.
- Long wait times!
- Not easily accessible.
- Stops are not matched/ coordinated to connecting routes & transit.
- Stops are frequent but not friendly.
If I could tell the commission”...

What riders want the planning commission to know:

- Buses need more equitable accessibility and service staff for disabled riders.
- There must be communication between drivers and busses rather than at terminals to increase headways.
- Stops and bus environments are unsafe.
- Some riders feel like their needs are not met.
- Drivers need control but also need to balance rider’s needs.
- Bus routes are uncoordinated with other routes and forms of transit for not seamless transit connectivity.
Looking at N.Y.C.’s SBS

Pros
- Off-board fare payment & low-floor, three-door buses
- Transit signal priority & wider stop spacing
- 10-12% ridership growth in first year & 19% reduced travel time
- Added city benefits: Pedestrian safety islands, bicycle paths and lanes, & additional sidewalk space (New York City Department of Transportation)

Cons
- Right-turning vehicles are allowed to turn from the bus lane
- No GPS to track real time
- Lanes not centered (Young, 2013).
Pros

- 70% commuter ridership, 90 second headways, & unlimited transfers.
- Traffic lights & dispatch control are centralized at terminals (Algulhun et al, 2015)
- Includes radial routes (direct and express), feeder services, & inter-neighborhood services (Lindau et al, 2010).
- Platforms are raised & easily accessible.
- Areas are zoned to be higher density/ integrated to limit congestion & increase inclusion (Algulhun et al, 2015; Lindao et al, 2010).

Cons

- Riders complain of poor weather protection & temperature control.
- Mobility is still an issue (Reed, 2015).
General Challenges & Major Concerns

- Property values increase along rapid transit systems (Deng et al., 2016).

- Rapid transit system increase the level of “vibration transmitted to buildings in close proximity” and degrade the acoustics of urban areas (Kassomenos et al., 2016).

- Higher income households are more likely to use rapid transit (Barton & Gibbons, 2015).

- Rapid transit system locations can result in the gentrification of lower-income residents (Stokenberga, 2014).

Transition Strategies & Recommendations

- Design transportation stops to deter criminal behavior and increase safety & increase security (Pearlstein & Wachs, 1982; Guerro, 2002).
- Expand affordable housing options & zone for high density (Cavers & Patterson, 2014)
- Design transit systems to reduce their impacts on urban acoustics (Kassomenos et al., 2016)
- Adopt & embrace complete streets through transit coordination, bikeways, & walkability (Reed, 2015).
- Center bus lanes, off-board fare, and raise boarding platforms.
- Insure GPS real tracking systems and have available real time information for riders.
- Curitiba system adopted a gradual implementation process and a Mobility Integrated System for centralized management (Lindau et al, 2010).
References


Thank You