PUBLIC MEETING AGENDA

Transportation Commission

MEETING DATE
Tuesday, September 8, 2020 at 7:30 a.m.

MEETING LOCATION
Join Via Cisco Webex Meeting – link below
https://tempe.webex.com/tempe/onstage/g.php?MTID=ec3fca897ac37b13ea41405b0f937aa96
Event password: KtTxdSbp392
United States Toll+1-408-418-9388
Access code: 146 410 2562

AGENDA ITEM	PRESENTER	ACTION or INFORMATION
1. Public Appearances The Transportation Commission welcomes public comment for items listed on this agenda. There is a three-minute time limit per citizen.	Brian Fellows, Commission Chair	Information
2. Approval of Meeting Minutes The Commission will be asked to review and approve the August 18, 2020 meeting minutes.	Brian Fellows, Commission Chair	Action
3. Transit Service Reduction Plan Staff will present the proposed plan for gathering feedback from the public regarding transit service reductions as part of the budget saving process.	Eric Iwersen, Engineering & Transportation Department	Information and Possible Action
4. GRID Bike Share System A presentation will be made to review the current operational status of the system and future system considerations.	Vanessa Spartan, Engineering & Transportation Department	Information and Possible Action
5. Traffic Mitigation Strategies Staff will review the current policies and procedures for gathering neighborhood consensus and implementation of traffic mitigation strategies.	Cathy Hollow, Engineering & Transportation Department	Information and Possible Action
6. Open Streets Staff will provide a verbal update about Open Street designs in Tempe.	Vanessa Spartan, Engineering & Transportation Department	Information and Possible Action
7. Department & Regional Transportation Updates Staff will provide updates and current issues being discussed at regional transportation and transit agencies.	Engineering & Transportation Department Staff	Information
8. Future Agenda Items Commission may request future agenda items.	Brian Fellows, Commission Chair	Information and Possible Action

According to the Arizona Open Meeting Law, the Transportation Commission may only discuss matters listed on the agenda. The city of Tempe endeavors to make all public meetings accessible to persons with disabilities. With 48 hours advance notice, special assistance is available at public meetings for sight and/or hearing-impaired persons. Please call 350-4311 (voice) or for Relay Users: 711 to request an accommodation to participate in a public meeting.

Minutes
City of Tempe Meeting of the Transportation Commission
August 18, 2020

Minutes of the meeting of Tempe Transportation Commission held on Tuesday, August 18, 2020, 7:30 a.m. via Cisco Webex.

(MEMBERS) Present:

Susan Conklu
JC Porter
John Kissinger
Ryan Guzy
David A. King
Paul Hubbell
Christina Pucci
John Federico
Peter Schelstraete
Brian Fellows
Jeremy Browning
John Christoph
Lloyd Thomas
Mary Harriman

(MEMBERS) Absent:

Pam Goronkin

City Staff Present:

Marilyn DeRosa, Engineering & Transportation Director
Shelly Seyler, Deputy Engineering & Transportation Director
Robert Yabes, Principal Planner
Chase Walman, Planner II
Vanessa Spartan, Planner II
Julian Dresang, Deputy Engineering & Transportation Dir.
Sam Stevenson, Senior Transportation Planner
Shar Johnson, Senior Civil Engineer
Mark Day, Municipal Budget Director
Sue Taaffe, Senior Management Assistant
TaiAnna Yee, Public Information Officer
Laura Kajfez, Neighborhood Services Specialist
Amanda Nelson, Public Information Officer
Bonnie Richardson, Principal Planner
Tony Belleau, Streetcar Project Manager
Trent Luckow, Sergeant
Eric Iwersen, Transit Manager

Guests Present:

None

Commission Chair Brian Fellows called the meeting to order at 7:32 a.m.

Agenda Item 1 – Public Appearances

None

Agenda Item 2 – Minutes

Brian Fellows introduced the minutes of June 23, 2020 meeting of the Transportation Commission and asked for a motion for approval.

Motion: Commissioner David King
Second: Commissioner JC Porter

Decision: Approved by Commissioners

Susan Conklu	John Federico
JC Porter	Peter Schelstraete
John Kissinger	Brian Fellows
Ryan Guzy	Jeremy Browning
David A. King	John Christoph
Paul Hubbell	Lloyd Thomas
Christina Pucci	Mary Harriman

Agenda Item 3 – Operating Budget & Capital Improvement Program (CIP) Budget Update
Mark Day provided an update on the Highway User Revenue Fund (HURF) and Transit Fund. Discussion topics included:

- Overview
- COVID-19 impacts
- Budget adjustment strategies
- Revenues and expenditures
- Next steps

Discussion included the effects the reduction in revenue will have on projects that are federally funded, ADA/minor concrete projects, rail studies and Prop 400e submittals.

Agenda Item 4 – Transit Shelter Design
Bonnie Richardson presented information on the proposed transit shelter design. Discussion topics included:

- History
- Purpose
- Steering Committee
- Public involvement
- Public feedback
- Concept development
    - Lighting
    - Colors
    - Sizes
- Shelter prioritization
- Fabrication
- Next steps

Discussion included wheelchair accessibility, shade, maintenance and durability, cooling mechanisms, and the ability to add technology in the future.

A motion was made to support the proposed design concept.

Motion: Commissioner John Christoph
Second: Commissioner David King

Decision: Approved by Commissioners

Susan Conklu	John Federico
JC Porter	Peter Schelstraete
John Kissinger	Brian Fellows
Ryan Guzy	Jeremy Browning
David A. King	John Christoph
Paul Hubbell	Lloyd Thomas
Christina Pucci	Mary Harriman

Agenda Item 5 – Transit System Security Update
Trent Luckow presented information about transit security for fiscal year 19/20. Discussion topics included:

- History
- Transit security
    - Light rail
    - Bus
- Fare enforcement
- Respect the Ride
- Boardings
- COVID-19 effects

Agenda Item 6 – Union Pacific Railroad Bridge Impacts to Traffic/Alternative Modes
Shelly Seyler provided a verbal update regarding the train derailment that occurred on July 29, 2020. Staff is working with UPRR to restore city property. Discussion topics included the effects the derailment has on future rail projects, detour signage for bikes and peds and the NTSB findings.

Agenda Item 7 – Department & Regional Transportation Updates
None

Agenda Item 8 - Future Agenda Items
Commissioner John Christoph requested the following agenda items be added:

- MAG Commuter Rail Plan
- AZ State Rail Plan
- AZDOT Phoenix-Tucson Corridor Plan

The following future agenda items have been previously identified by the Commission or staff:

- September 8
    - Annual Report
    - Bike Share
    - Transit Service Reduction Plan
    - Traffic Mitigation Strategies
- October 13
    - Annual Report
    - Priest Drive Bicycle Lane Design Assistance Project
    - BRT Study

  - Ash and University Intersection
- November 10
  - Scottsdale Road Bike Lanes
  - Entitled Development Projects
  - Transportation Demand Management Association
  - Mobility Hubs
- December 8
  - 20 Minute City Market Research Results
  - 2020 Transit Satisfaction Survey Results
- January 12
  - Transit Service Reduction Plan
  - Country Club Way Streetscape
  - Commission Business
  - Vision Zero Update
- February 9
  - Cool Pavement Treatment
  - Personal Delivery Devices
  - Outreach Plan for I-10 Corridor Construction
- TBD: North/South Rail Spur MUP
- TBD: Commuter Rail Study
- TBD: Open Streets

The next meeting is scheduled for September 8, 2020.

The meeting was adjourned at approximately 9:08 a.m.

Prepared by: Sue Taaffe
Reviewed by: Shelly Seyler

MEMORANDUM

TO: Transportation Commission

FROM: Shelly Seyler, Deputy Engineering & Transportation Director (480-350-8854)
Eric Iwersen, Transit Manager (480-350-8810)
Sam Stevenson, Senior Transportation Planner (480-858-7765)

DATE: September 8, 2020

SUBJECT: Long-Term Transit Fund Plan

AGENDA ITEM #: 3

PURPOSE

The purpose of this memo is to provide the Commission with an update on the Transit Tax Fund and provide a plan to address the existing concerns about the long-term structural health of the fund.

CITY COUNCIL STRATEGIC PRIORITY

- Quality of Life 3.26: Achieve a multimodal transportation system (20-minute city) where residents can walk, bicycle, or use public transit to meet all basic daily, non-work needs.
- Quality of Life 3.29: Achieve ratings of "Very Satisfied" or "Satisfied" with the "Overall Satisfaction with Transit System in Tempe" greater than or equal to 80% as measured by the City of Tempe Transit Survey.

BACKGROUND

The Tempe Transit Tax passed in 1996 and provided an ongoing source of funds for all Tempe bus, rail and Orbit service, paratransit service, bicycle and pedestrian enhancements, and a variety of other mobility options for Tempe visitors and residents. This half-cent (on every sales tax dollar), non-sunsetting fund provides upwards of $43 million dollars annually depending on how the local economy performs.

In the last 24 years, the City Council has advanced a strong program that has built major capital projects including 40 miles of multi-use paths, the East Valley Bus Operations and Maintenance Facility, multiple transformative streetscape projects and the Transportation Center. Throughout the years, Tempe has expanded bus and rail service to fully cover the city (no transit "deserts") that includes fixed route/major arterial service, the Orbit neighborhood circulator system, light rail and the upcoming Tempe Streetcar. It should be noted that as the City has expanded transit service and completed the majority of the capital projects promised in the tax initiative, the fund has become largely an operating expenses fund. Transit service is operated through a partnership with Valley Metro, is coordinated with neighboring cities and has been generally considered successful for Tempe and in the state of Arizona. Tempe also has the highest per capita transit ridership in the region.

The cost to the Transit Fund to operate Tempe transit service (bus and light rail operations) in fiscal year 2021 is expected to total approximately $45 million. This amount is offset by sources of revenue like federal grants, regional Public Transit Funds / Prop 400 (PTF) money, real estate holdings and transit ticket sales (farebox recovery). In late Spring 2020 the federal government passed the Coronavirus Aid, Relief, and Economic Securities Act that included one-time funding for transit agencies across the country. This CARES money is distributed to Valley Metro and offsets the costs for transit service in Fiscal Year 2021, our current year. This significantly relieves the burden of the Tempe Transit Fund annual transit operations costs. The Tempe share of this CARES money totals approximately $21 million for the FY21, allowing Tempe to focus on the process and a slower timeline for addressing the long-term structural health of the Transit Fund.

As the global pandemic persists and the subsequent impact to the world economy continues, Tempe too is experiencing a declining economic condition and more specifically, a reduction in sales tax collections. Transportation and Engineering, Budget and Finance staff have been watching the performance of the local economy and it has been determined that the Transit Fund will need to prepare for expenditure reductions. Essentially there is less sales tax revenue coming in than the long-term expenditures will require. Based upon this projected long-term fund shortfall, it has been identified that the fund will need to institute cuts to the recurring costs of up to $9.5 million. This is a significant number and the following information is the proposed approach to achieve this Transit Fund reduction to ensure the long-term health of the fund, and its ability to provide City-wide transit, bicycle and pedestrian services.

SERVICE REDUCTION & OPTIMIZATION PROPOSED PLAN

Staff proposes a multi-year process to address the long term structural issue with the transit fund that will include data-based decision making, broad and detailed public involvement with an adherence to equity requirements, maximization of revenue sources, careful reduction of transit service and ongoing maintenance costs, and exploration of optimization and efficiency efforts. Staff will work closely with Valley Metro and our neighboring cities to determine and propose all necessary service reductions. The overall philosophy of this plan is to minimize the transit rider impact and loss of service to valuable programs in Tempe. The following items highlight some points to the proposed approach.

- Tempe and Valley Metro staff will review the performance of all of Tempe's six Orbit routes, one Flash route, Tempe Streetcar, three Express bus routes, light rail and all 16 fixed route bus routes. This will include looking at:
    - Cost per boarding – correlation between ridership and costs of providing the service
    - Ridership by hour
    - Ridership by route
    - Review of operating arrangements with Valley Metro and subcontractors to explore opportunities to reduce annual operating costs through efficiencies. The current bus service contract is due to expire in 2023.
- Public Involvement will be conducted in concert with the bi-annual regional service change schedule and will include both the Valley Metro outreach process and the standard Tempe public and resident engagement activities, board and commission process and all other stakeholder outreach.
- Explore technological or industry changes that can bring a cost savings while supporting public mobility options.
- Careful attention to federal and regional requirements like Title VI and ensuring equity with all decision making.
- Continued commitment to the original language in the Transit Tax ballot language (see attached).
- Maintain staffing levels but explore personnel efficiencies particularly when vacancies occur.
- Maximize lesser financial obligations in the Transit Fund that can be reduced or eliminated including landscape and pathway maintenance costs, special events, giveaways, collateral materials, staff travel, training and conferences.
    - Eliminate Tour de Tempe (hold virtually like Tour de Fat)
    - Modify Bike to Work Day
- Maximize revenue generation
    - Ensure local and regional ticket sales are compliant to reduce fare evasion and reduced fare abuse, verifying all riders have purchased tickets
    - Explore and promote real estate and lease agreements that reimburse the Transit Fund
    - Explore possible advertising on buses, Streetcar and bus shelters
    - Explore partnering with other transit service partners like Flixbus
    - Continue federal and regional funding like Prop 400/PTF
    - Explore increasing fares system-wide
    - Explore charging a fare for Orbit

The following public Involvement tools will be used to notify the public of the proposed reductions.

- Tempe Today
- Social media
- Email blasts
- Advertising at major bus stops, Transportation Center
- On-board surveys (when allowed)
- Values mapping survey to determine community needs
- Dedicated web page (tempe.gov/TransitChanges)

Other Factors

- It is important to note that the Transit Tax has been in place nearly 25 years and has built and implemented a majority of what the ballot language indicated. The fund and service are already at nearly a maximum operations, and to further maintain and enhance the system would require additional other funding sources or City investment beyond what the tax generates.
- Prop 400 expires December 31, 2025 and if there is no continuation of it through Prop400E, there will be significantly more reductions in Tempe and regional service.

The extended process for addressing the structural health of the Transit Fund will enable staff, the Council and our residents and visitors to adjust as needed to the economic conditions, to ensure a more holistic approach to how the program is reviewed and to institute the less dramatic reductions earlier in the process and the more dramatic later, allowing more time to work through the proposals.

RECOMMENDATION OR DIRECTION REQUESTED

Receive Commission direction on proposed plan to address the existing concerns about the long-term structural health of the Transit Fund.

TIMELINE/NEXT STEPS

- Sept. 8, 2020: Transportation Commission
- Sept. 17, 2020: Council support for timeline & framework for decision making
- Sept. 24 & 26, 2020: Virtual public meetings (tempe.gov/TransitChanges)
- Fall 2020: Valley Metro service change public process
- Fall 2020: Sustainability Commission, Neighborhood Advisory Commission, Commission on Disability Concerns, Mayor's Youth Advisory Commission
- Dec. 1, 2020: Transportation Commission
- Dec. 3, 2020: Council Direction for April 2020
- April 2021: First round of service reductions and fund changes
- Summer, Spring 2021: Public & Council review process
- October 2021: 2nd round of reductions and fund changes
- Fall/Winter 2021/2022: Public & Council review process, as needed
- April & October 2022: 3rd & 4th round of reductions and fund changes, as needed

FISCAL IMPACT or IMPACT TO CURRENT RESOURCES

Approximately $9.5 million which will be applied over time. CARES Act provides sufficient funding for transit service operations for FY21. Transit Fund expenditure reductions for transit operations will begin in April 2020 and continue, as needed, into FY23 to achieve structural balance to the Transit Fund. Base line budget adjustments including landscape and pathway maintenance, special events, staff travel, giveaways, collateral materials, training and conferences will begin immediately.

ATTACHMENTS

1. PowerPoint
2. Transit Tax Ballot Language
3. Public Involvement Plan

Transit Fund Balancing & Service Changes 2021

Transportation Commission
September 8, 2020

Tempe

City Council Strategic Priority Performance Measures

Quality of Life 3.26

Achieve a multimodal transportation system (20-minute city) where residents can walk, bicycle, or use public transit to meet all basic daily, non-work needs.

Quality of Life 3.29

Achieve ratings of “Very Satisfied” or “Satisfied” with the “Overall Satisfaction with Transit System in Tempe” greater than or equal to 80% as measured by the City of Tempe Transit Survey.

Agenda

- Transit program history
- Transit fund status & COVID-19 impacts
- Long-term structural health of fund
- Proposed transit service reductions

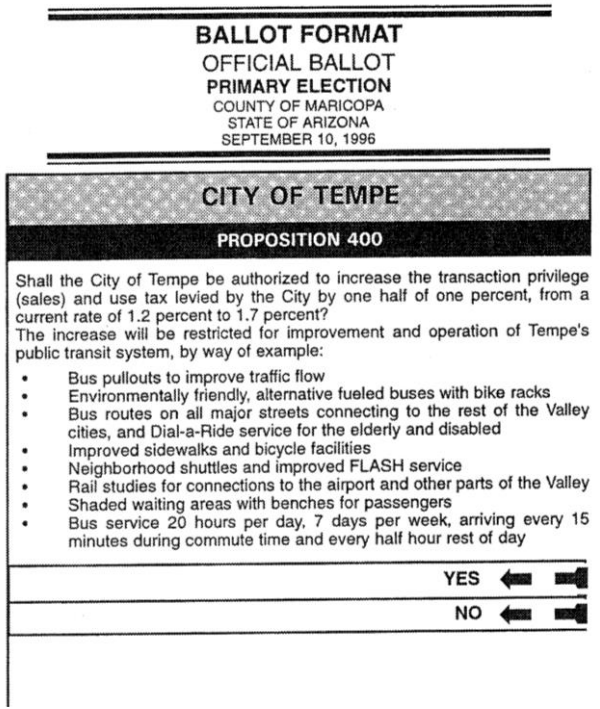
Direction:

- Timeline
- Decision-making framework & process

Background

- Transit Tax 1996
- Half-cent non-sunset sales tax
- Dedicated funding for public transit, bike & pedestrian
- Leveraged with federal and regional (Prop 400) funds

- At that time:
  - Limited & low frequency public transit service (6 routes)
  - No multi-use paths & less than 20 miles of bike lanes
  - No bus pullouts



BALLOT FORMAT
OFFICIAL BALLOT
PRIMARY ELECTION
COUNTY OF MARICOPA
STATE OF ARIZONA
SEPTEMBER 10, 1996

CITY OF TEMPE

PROPOSITION 400

Shall the City of Tempe be authorized to increase the transaction privilege (sales) and use tax levied by the City by one half of one percent, from a current rate of 1.2 percent to 1.7 percent?
The increase will be restricted for improvement and operation of Tempe's public transit system, by way of example:

- Bus pullouts to improve traffic flow
- Environmentally friendly, alternative fueled buses with bike racks
- Bus routes on all major streets connecting to the rest of the Valley cities, and Dial-a-Ride service for the elderly and disabled
- Improved sidewalks and bicycle facilities
- Neighborhood shuttles and improved FLASH service
- Rail studies for connections to the airport and other parts of the Valley
- Shaded waiting areas with benches for passengers
- Bus service 20 hours per day, 7 days per week, arriving every 15 minutes during commute time and every half hour rest of day

YES
NO

Transit Fund & Transportation Today

16 arterial bus routes

6 Orbit routes & FLASH

3 Express bus routes

Paratransit

6 miles of light rail with 9 stations

Streetcar

Transit Fund & Transportation Today

GRiD bike share

38 miles of shared use paths

Multi-modal friendly streetscapes

177 +/- miles of bike lanes

Transit Fund & Transportation Today

- East Valley Bus Operations & Maintenance Facility, Tempe Transportation Center
- Free youth transit passes & promotional events
- 800+ bus stops, 340+/- shelters, 89 bus pullouts
- 124 buses, 95% alternatively fueled
- Bus service operated by Tempe 1996-2013, Valley Metro 2013-2023
- Highest bike commute % in region & per capita transit ridership in region

- **Built-out system, largely an O&M fund**

Public Transportation & COVID-19 Impact

- Time Magazine: “Covid-19 has been apocalyptic for public transit.”
- Smithsonian Magazine: “Financial losses from low ridership & unexpectedly low sales tax revenue threaten the future of public transportation.”
- ITS International: Ridership is way down & the government is urged to find more money to help.”

Public transit is a part of the economic recovery & provides transportation for all.

Transit Fund & COVID-19 Impact

Revenues

- Transit Tax
- Prop 400 (expires 12-31-25) & Federal grants
- Real estate
- Farebox recovery
- CARES Act (One-time $21M, FY 21), possible additional federal aid?

Expenditures

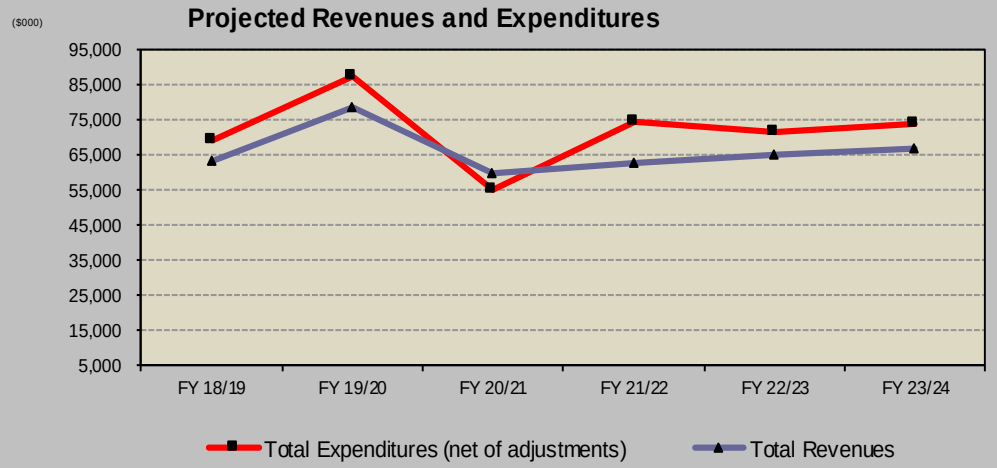
- Valley Metro rail & bus operating contracts (escalating costs in recent years); $45M FY 21
- O & M for all facilities, personnel & programs, capital investments

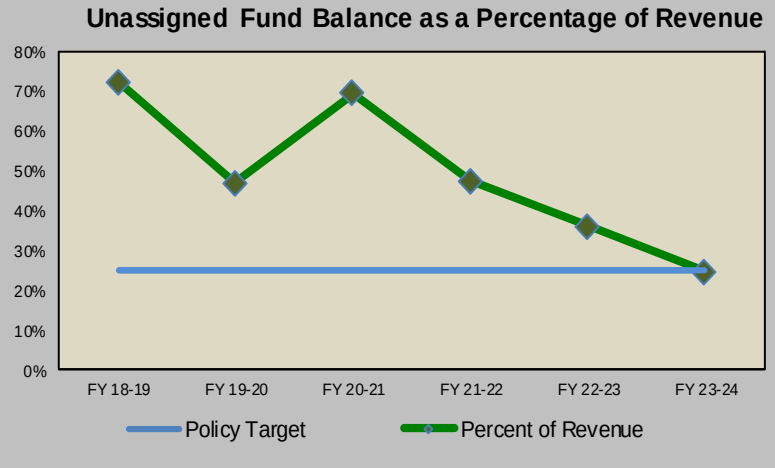
Challenge & Input

- COVID related economic impact: 15% reduction in revenues anticipated ($9.5M estimate)
- **Show revenues exceeding expenditures in 5-year forecast & utilize 3 FY's to do so**

Transit Fund 5-year Forecast

Transit Fund Forecast - Impact of CARES Act Adjustments + Future Adjustments





Current Reductions FY 21

- Complete only federally-funded streetscape & pathway projects underway
- Reduce baseline operations & identify efficiencies (staff training, travel, consultants, giveaways)
- Modify Bike to Work Day & Eliminate Tour de Tempe (possibly virtual FY21)
- Terminate ad agency contract (completed)
- Complete Council-priority bus bays, slow the program & partner with developers
- Build lower cost transit shelter design options
- Conduct vacancy reviews

Transit Service Reduction Plan Metrics

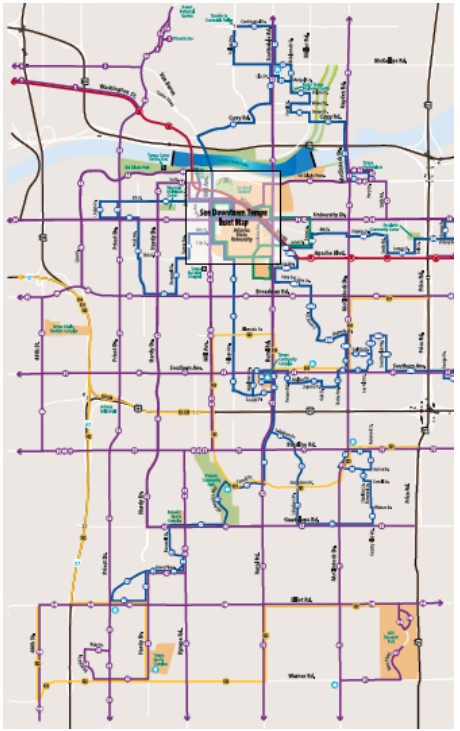
- Develop operating budget reductions based on:
  - Public involvement process
  - Data-driven recommendations
    - Ridership by route and time of day
    - Operating costs and cost per passenger
  - Equity considerations
  - Fulfillment of Transit Tax ballot language
  - Regional coordination and support
  - Council direction

April 2021 Near-Term Service Reduction Proposals

- Bus service optimization
  - Local route 72
  - Express routes 521 and 522
- Bus service route changes
  - Local routes 32 and 40
  - Express route 520 (consolidate)
- LRT frequency (15-minute frequency)
- Streetcar (15-minute frequency)
- Explore regional/VM service adjustments

Possible Long-Term Reduction Strategies / Revenues

- Route eliminations
- Modify frequency & span of service
- Work with Valley Metro to reduce costs
- Improve farebox recovery, minimize reduced fare abuse
- Explore bus shelter, Streetcar & exterior bus advertising
- Transit system optimization
- Explore implementing Orbit fare
- Explore regional fare increases
- Explore real estate & lease agreements that reimburse the Transit Fund
- Explore partnering with other transit service partners like Flixbus
- Review service contract (expires June 30, 2023), RFP in late 21, 22



Public Involvement

- Valley Metro regional service changes (Spring & Fall, 21, 22 & 23)
- Tempe public/virtual meetings
- Tempe Today
- Social media
- Email blasts
- Advertising at major bus stops, Transportation Center
- On-board surveys (when allowed)
- Online comments
- Web page (tempe.gov/TransitChanges)
- Values mapping survey to determine community needs

Next Steps

- Sept. 8, 2020: Transportation Commission
- Sept. 17, 2020: Council support for timeline & framework for decision making
- Sept. 24 & 26, 2020: Virtual public meetings
- Fall 2020: Valley Metro service change public process
- Fall 2020: Sustainability, Neighborhoods, Commission on Disability Concerns, Mayor's Youth Advisory Commission
- Dec. 1, 2020: Transportation Commission
- Dec. 3, 2020: Council Direction
  - Repeat process twice annually until fund is structurally balanced

Direction Requested & Feedback

- Receive direction on phased 3-year timeline & decision-making framework & process
  - Staff will continue to review & adjust timeline & recommendations based upon current economy
- Feedback

BALLOT FORMAT

OFFICIAL BALLOT

PRIMARY ELECTION

COUNTY OF MARICOPA
STATE OF ARIZONA
SEPTEMBER 10, 1996

CITY OF TEMPE

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- Improved sidewalks and bicycle facilities
- Neighborhood shuttles and improved FLASH service
- Rail studies for connections to the airport and other parts of the Valley
- Shaded waiting areas with benches for passengers
- Bus service 20 hours per day, 7 days per week, arriving every 15 minutes during commute time and every half hour rest of day

YES ⬅ ▬

NO ⬅ ▬

1. PROJECT DESCRIPTION/BACKGROUND

Due to the coronavirus pandemic and anticipated lower Transit Tax revenue, Tempe is exploring cost-saving transit service reductions that will strive to minimize service impacts and still provide equitable transit service. It is anticipated that reductions will occur over the next two years using a phased approach and that outreach will take place every six months during this timeframe. The use of data and equity metrics as well as public input will be integral to developing a framework for how reductions will be structured.

2. PUBLIC INVOLVEMENT OBJECTIVES

The City of Tempe values public input and believes that community members should be engaged early on in decisions that affect them. The purpose of the Public Involvement Program (PIP) is to create an open and transparent process to help our current customers understand the changes being made. The scope of the PIP is to:

- Provide objective information to Tempe transit users and all residents regarding the decision-making framework being proposed.
- Seek and encourage the involvement of all community members.
- Provide a variety of opportunities for the public to contribute ideas and provide feedback through all phases of the process.
- Make the process accessible and engaging to all interested community members.

3. STAKEHOLDER ANALYSIS

An early step in the Public Involvement Program is to identify the internal and external community members that have an interest in the process.

Internal

- Mayor and Council
- City Departments
- Transportation Commission
- Sustainability Commission
- Neighborhoods Advisory Commission
- Commission on Disability Concerns
- Mayor's Youth Advisory Commission

External

- Residents, businesses, and property owners with an emphasis on those that are transit users
- Valley Metro
- Arizona State University
- Tempe Elementary, Kyrene, and Tempe Union High School District Administrations

4. INVOLVEMENT TECHNIQUES & COMMUNICATION APPROACH

Public involvement and communication techniques may vary depending on the phase of the planning efforts. The approach will be to facilitate working directly with the public throughout the process to ensure that the public's issues and concerns are consistently noted, understood, and considered.

While traditional methods (meetings, presentations, etc.) will play an important role in public engagement, social media and electronic participation and communication tools will also be extensively used to disseminate information and broaden outreach. In the near-term, meetings will be held via WebEx until such time as in-person meetings can be held. Meetings will be recorded and posted on the website for viewing.

The following dedicated websites, online URLs and social media handles will be used to share information and to collect feedback throughout the process:

Website	tempe.gov/TransitChanges
E-mail	neighborhoods@tempe.gov
Facebook	facebook.com/cityoftempe
Twitter	@tempegov
Newsroom	tempe.gov/newsroom
Comments	tempe.gov/TransitChanges

The following methods will also be used to achieve broad and continuous public participation:

- **Postcards** mailed to households in high ridership areas as well as areas with limited access to the internet advertising meetings and the opportunity to provide feedback online..
- **Values mapping online survey** seeking input will be posted on the Tempe Forum September 24-October 25, 2020.
- **Onboard surveys** when allowed.
- **Posters on Orbit buses** advertising meetings and the opportunity to provide feedback online.
- **Posters at high ridership bus stops** and Tempe Transportation Center advertising meetings and the opportunity to provide feedback online.
- **Car cards (if possible)** with information regarding meetings and the opportunity to provide feedback online available on buses for riders.
- All related **documents posted** on the project website.
- Articles and meeting announcements in **Tempe Today waterbill newsletter.**
- Meeting announcements and other information sent to **Transportation and Neighborhoods Listservs.**
- **Information provided to community partners** for inclusion in their enewsletters (Chamber of Commerce, Downtown Tempe Authority, Tempe Tourism Bureau, school districts).
- Meeting announcements in the City's bi-weekly coronavirus newsletter.

- Comment forms available onboard Orbit buses (if possible) and at the public meetings (when in-person is an option) and online throughout the duration of the project.

- Presentations to the
  - Transportation Commission
  - Sustainability Commission
  - Neighborhood Advisory Commission
  - Mayor's Youth Advisory Commission
  - Commission on Disability Concerns

The communication methods used will include:

- Tempe 11
- Press release
- Social media
- City online calendar
- Digital screen announcements at City facilities regarding meetings
- Project website

5. PROJECT TIMELINE

Sept. 8, 2020: Transportation Commission
Sept. 17, 2020: Council support for timeline & framework for decision making
Sept. 24 & 26, 2020: Virtual public meetings
Fall 2020: Valley Metro service change public process
Fall 2020: Sustainability Commission, Neighborhood Advisory Commission, Commission on Disability Concerns, Mayor's Youth Advisory Commission
Dec. 1, 2020: Transportation Commission
Dec. 3, 2020: Council direction

6. PUBLIC and STAKEHOLDER MEETING SCHEDULING & ACCESS

Online meetings will be held on September 24 and 26, 2020 to present the process for determining reductions and seeking input as to what types of changes are most palatable going forward.

Special assistance is offered for persons with sight and/or hearing impairments. (48-hour advance notice) A Spanish language interpreter will be available at the meetings to provide oral translation. The fact sheet and meeting materials will be available in Spanish, and a bilingual phone number for information was also provided (480) 350-4311. The meeting presentation will be recorded and posted on the City's website 48 hours after the meeting.

Environmental justice principles and procedures are followed to improve all levels of transportation decision-making.

7. RESPONSIBLE DOCUMENTATION

Documentation of all phases of the process exists for future use and understanding of how the program worked, what comments were received and how the results of the public involvement were used in proposing service reductions.

Documentation will include:

- The Public Involvement Program
- List and samples of outreach and communication documents
- Database of participant contact information
- All public comments made
- Survey results

8. PROCESS EVALUATION & CONCLUSION

The City of Tempe seeks continual improvement of all of its activities. An evaluation will be performed throughout the public involvement process to ensure the PIP is meeting participation requirements mandated by state law. Feedback opportunities related to public involvement techniques will be provided through the website and meetings and continuously reviewed.

This Public Involvement Plan may change as conditions change or additional resources become available. The most current information about upcoming meetings and comment opportunities will be available on the dedicated website.

For further information about the process, please contact the following City of Tempe staff:

Sam Stevenson
Senior Planner
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Sam_Stevenson@tempe.gov

Laura Kajfez
Neighborhood Services Specialist
480-350-2840
laura_kajfez@tempe.gov

MEMORANDUM

TO: Tempe Transportation Commission

FROM: Vanessa Spartan, Transportation Planner, 480-350-2897
Robert Yabes, Principal Planner, 480-350-2734

DATE: September 8, 2020

SUBJECT: GRID Bike Share

ITEM #: 4

PURPOSE:
To provide the Commission with an update on GRID Bike Share and to receive commission recommendation on how to proceed.

RECOMMENDATION OR DIRECTION REQUESTED:
For information and possible action.

CITY COUNCIL STRATEGIC PRIORITY:

- Quality of Life - 3.26: Achieve a multimodal transportation system (20-minute city) where residents can walk, bicycle, or use public transit to meet all basic daily, non-work needs.

BACKGROUND INFORMATION:
Bicycle sharing (bike share) is a for-rent public bike program in urban environments where land use is higher density, bicycle trips are common and transit connections are strong. Bike share programs encourage alternative modes of travel by providing easy access to additional sustainable travel modes. They are meant to support greater access to more sustainable transportation and further reduce dependency on automobiles. Bike share expands the reach of the transit system by providing access to destinations beyond the traditional ¼-mile reached by walking to/from bus routes.

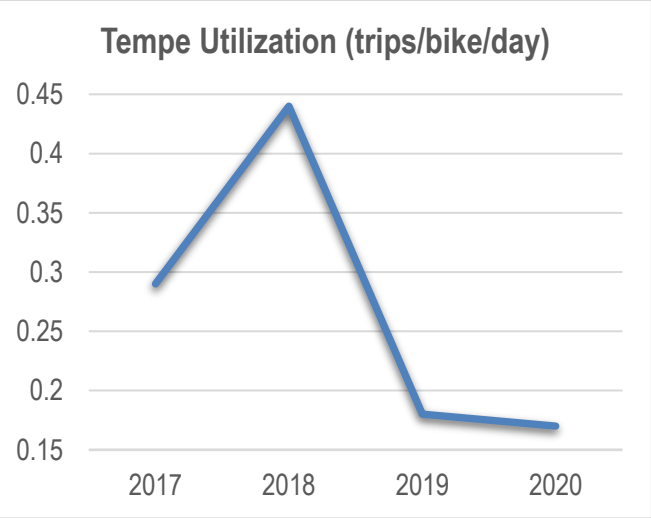
In May 2017, Tempe joined the regional GRID bike share program with 300 bikes, 425 racks and 30 stations (now at 450 racks and 32 stations). The City secured a federal grant of $1.1million with a local match of $67,632 for the initial Tempe bike share system. The regional GRID bike share system included the cities of Tempe, Mesa and Phoenix.

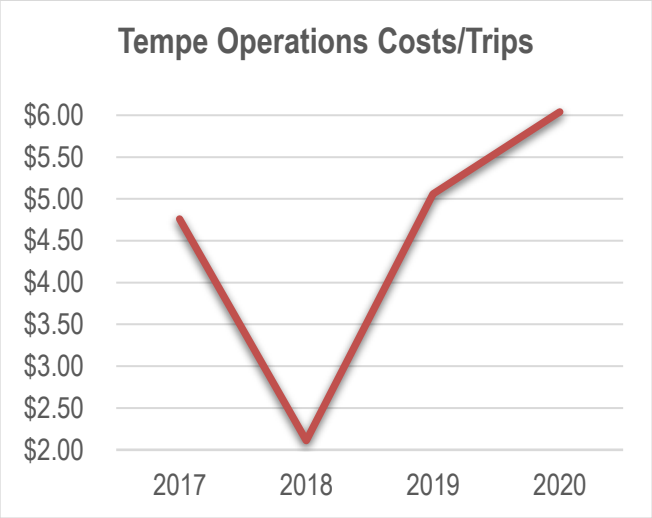
Tempe has a contract with bike share operator, CycleHop, to manage the city's GRID bike share system. Unlike the cities of Phoenix and Mesa, which allow advertising to cover operating costs, City regulations prohibit advertising in the right-of-way and on City facilities and assets. Therefore, Tempe and ASU pay a total of $100,000 annually to CycleHop for the operations of the GRID bike share system. The City has an annually renewable intergovernmental agreement with ASU, through which the university and the City each pay half of the operating costs ($50,000). The Tempe-ASU agreement is renewed each year in July. The contract with CycleHop will expire September 8, 2021.

Between May 2017 and April 2020, there were 93,552 trips on the GRID bike share system in Tempe, with 291,226 trips occurring in the region since the system launched in Phoenix in January 2016. High performing bike share locations in Tempe include the downtown, ASU, and Town Lake. The total number of annual trips made on the regional GRID system has been diminishing since 2018, as illustrated in the figures below. The first line graph illustrates the average utilization of the Tempe bike share fleet, calculated as trips per bike per day. The second line graph divides the average number of trips per month by the average monthly operating cost.

Monthly Average	2017	2018	2019	2020*
Tempe Utilization	0.29	0.44	0.18	0.17
Tempe Trips	2,622	3,943	1,644	1,381
Operations Costs/Trips	$ 4.76	$ 2.11	$ 5.06	$ 6.04
Active Bikes Regionally	854	876	749	716

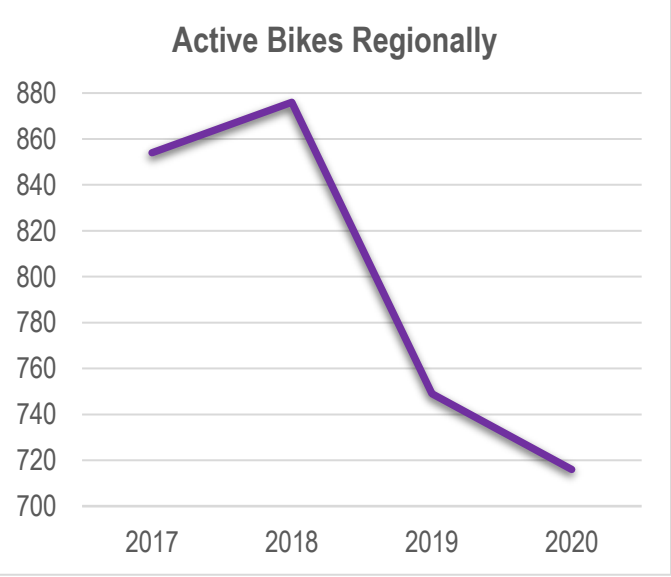
** As of May 2020.*





CONTRACTOR PERFORMANCE

The Tempe fleet and equipment (bicycles, bike racks, and back end software) are proprietary assets purchased by the City that were fulfilled by CycleHop's subcontractor, Social Bicycles. In April 2018, Social Bicycles sold the controlling stake of its business to Jump (dba Uber). Both Jump and Social Bicycles were sold by Uber to Lime in May 2020. In early 2019, CycleHop indicated that the bicycle controllers were outdated and not receiving hardware and software updates, which impacted bicycle availability and the overall rider experience. The outdated bike share system has resulted in the system not being fully operational since at least February 2019. Updating the equipment would require investing in a new system. In August 2019, CycleHop and Social Bicycles mutually agreed to a gradual transition from the Social Bicycles system. The line graph below illustrates the decrease in active bikes available regionally.



In conducting research, Tempe has learned that there are other providers using Social Bicycles technology that are divesting from operating bike rental programs, as the technology is cumbersome and prone to failure. While the operating system can be upgraded to a more reliable system, there are now new modal alternatives available that are inexpensive to users and cost approximately the same as renting bikes. The proliferation of electric scooters is also contributing to the declining patronage of the bike share program. While very durable, the bikes cannot be retrofitted for upgrade to e-bikes to make the mode more competitive with the electric scooters.

CycleHop subsequently approached the cities of Tempe, Mesa and Phoenix and proposed a solution to continue the

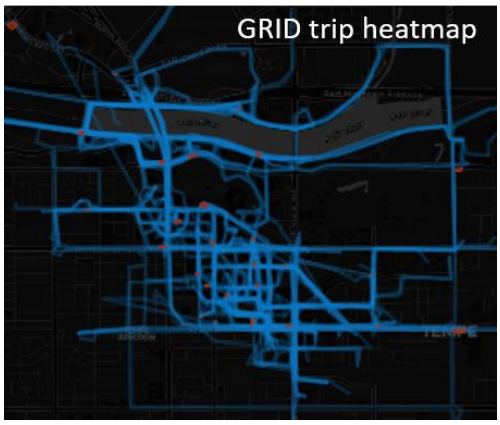
bike share operation with a system relaunch, including new software and hardware. On October 28, 2019, the City of Tempe replied to the CycleHop proposal, agreeing to the bike share fleet conversion. The system relaunch proposal would require the cities of Mesa and Phoenix to change their contract terms to include operations payments similar to Tempe's. In exchange, CycleHop would upgrade the outdated fleet, convert to CycleHop's proprietary software system, and make the system fully operational. Both Mesa and Phoenix did not agree to the proposed change of contract terms including increased operations payments. This resulted in the closure of the City of Mesa bike share system. The future of the City of Phoenix bike share system is still unknown. In the meantime, Tempe continues to make operations payments even though the system has not been updated, and the bike share system lacks the regional consistency as originally envisioned.

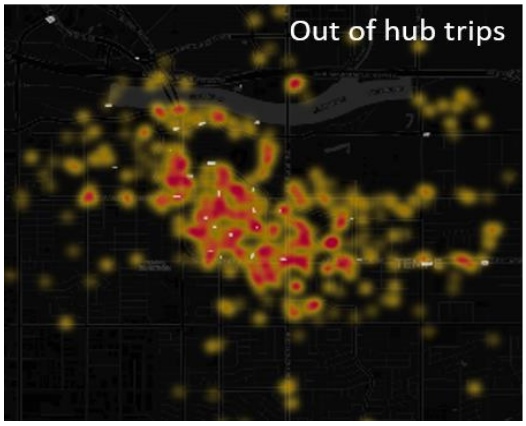
As mentioned above, each year, ASU has entered into an agreement with Tempe to pay half of the GRID operations costs. Due to a lack of confidence in CycleHop, on June 9, 2020 ASU informed the City of Tempe they will not extend the agreement for another year. This results in Tempe paying the full operations costs for the bike share system.

It should also be noted that since the beginning of the Tempe/CycleHop contract, Tempe staff have informed CycleHop of their failure to perform under the contract terms on numerous occasions. Tempe has sent a total of six Demand of Assurance letters to CycleHop regarding various concerns related to the terms of the contract.

MARKET DEMAND FOR BIKE RENTAL SERVICE

Declining headways and reduced capacity of transit service due to COVID-19 are now requiring additional modal strategies to accommodate the underserved travel demand. Based on previous performance of the GRID bike share system, the program provides service both near GRID hubs as well as outside of the GRID hub areas. The figures below illustrate where GRID bike trips commonly occur in Tempe. The out of hub trips map indicates trips where users paid additional fees to end their trip away form a GRID hub.





In addition to the equipment failures, CycleHop's inability to continue providing operational bicycles contributed to the demise of the GRID bike share operation. Based on previous demand for bike share service and the reduction of transit service, the potential demand for a shared mobility solution is increased and likely to be high.

Changes in technology also affected the rental bike market. Electric scooters flooded the micromobility market, replacing the bike share programs overnight. In view of the overall reduction of transit service, there is a market for bike share, but not in its current form. With recent research, it has been shown that electric bikes can provide the response to limiting transit access due to COVID-19 social distancing requirements and provide a more comfortable alternative to electric scooters for longer trips.

CURRENT OPERATING MICROMOBILITY PROGRAMS IN TEMPE

There are currently six applicants for operating electric scooters in Tempe, with three active operators that have deployed scooters in the City. An annual license fee is charged when the company applies for an operating permit. Beginning in 2019, each scooter located in the City is charged $1.09 daily; the daily rate is adjusted each year based on the Consumer Price

Index. Unlike the GRID bike share program, the companies participating in the Shared Active Transportation Vehicle Right-of-Way License program do not require any financial contribution from the City. All assets are owned by the individual companies, and the program generates revenue for the City.

POTENTIAL APPROACHES / OPTIONS

The original launch of the bike share system was envisioned as a hub-based system to provide first-mile / last-mile connections to the transit system. The need for the program has not changed although the demand for recreational trips is higher than anticipated. Staff feels that some type of bike rental program is still needed to bridge the first-mile / last-mile to transit and other destinations. Over the last two years, rapid developments in the micromobility industry and technology advancements toward motorized conveyances have changed customer expectations regarding pricing as well as increasing expectations to begin and end trips as close to the destination as possible.

In collaboration with our partners Phoenix, Mesa, and ASU, Tempe staff discussed and evaluated possible alternatives for addressing the challenges with the GRID bike share system, including researching how other cities – both nationally and internationally – are evolving their bike share systems. Provided below are three approaches that would allow the City to continue providing a bike share program:

1. **Continue with the current contract and increase City operations budget.** Under this approach, the City would continue the contract with CycleHop and assume the full payment for operations, resulting in a $50,000 annual increase, from $50,000 per year to $100,000 per year. ASU's preference is to terminate the program and invest in other mobility programs that generate better results. The unresolved issues with CycleHop's performance and necessary equipment upgrades would need to happen immediately, before any remaining customer support is lost.
2. **Dissolve existing GRID bike share system and allow private companies to provide the service.** Under this alternative, the City would terminate the CycleHop contract and leave bike share offerings to the private market to fulfill via the Shared Active Transportation Vehicle Right-of-Way License. While Tempe has a licensing system in place for bike share providers, the City does not currently have any bike providers utilizing that licensing structure. Due to the volatility of the micromobility market, this alternative could leave riders without service. Lastly, under the licensing structure the City may have less ability to determine operational considerations to fulfill community needs. However, the City licensing system could be re-structured to provide incentives for including the less lucrative bike share devices.
3. **Issue new RFQ for micromobility service.** The City would terminate the CycleHop contract and issue a new RFQ for micromobility services, contracting with any providers that meet the City's qualifications. By doing so, the City would update contract terms to better meet user needs and to reduce or eliminate annual operating costs to the City. The RFQ can be jointly issued with ASU or other willing regional partners.
4. **Terminate the Bike Share Program.** Under this alternative, the City would terminate the CycleHop contract and not adjust the Shared Active Transportation Vehicle Right-of-Way licensing program.

STAFF SUMMARY OF FINDINGS

For a successful Tempe micromobility program, the following service goals must be achieved:

- Eliminate or minimize asset investments and recurring operating expenses.
- Provide a diversity of fleet offerings to possibly include recycling/repurposing of existing bikes; electric bikes; mobility-assist devices; and other existing or future micromobility devices.
- Allow for a new operations model, including hybrid dockless operation, geofenced, and locations identified by the City to improve first-mile / last-mile service.
- Adjust fees and pricing to allow for an equity category and to provide discounted rates for transit pass holders.
- Allow for flexible trip pricing that can be adapted to fit changing market conditions.
- Eliminate or minimize investment in equipment that may become quickly outdated.
- Provide regional consistency, if feasible.

Approach 1 would place increased financial burden on the City and would preclude changes to the devices, fees, and operations of the existing program. Both Approach 2 and Approach 3 could potentially meet Tempe's micromobility service objectives and goals. Staff recommends that Approach 2 and 3 be reviewed more thoroughly to understand the benefits and reliability for users while also minimizing or eliminating costs and risks to the City.

Any of the potential approaches identified will not be available immediately. All approaches will require time to implement.

FISCAL IMPACT or IMPACT TO CURRENT RESOURCES:
Up to $100,000 annual operations costs for bike share.

ATTACHMENTS:
1. PowerPoint

GRID Bike Share

Transportation Commission
September 8, 2020

Tempe

Council Strategic Priorities

Quality of Life

3.26: Achieve a multimodal transportation system (20-minute city) where residents can walk, bicycle, or use public transit to meet all basic daily, non-work needs.

GRID Bikeshare

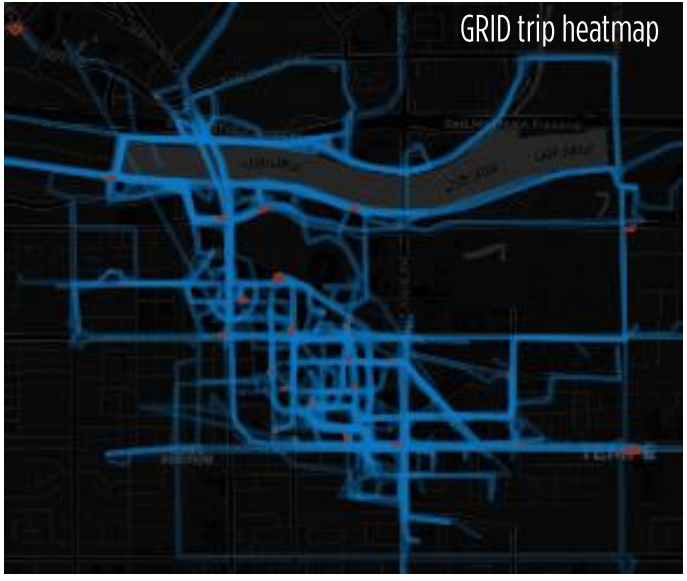
- Staff is seeking recommendation regarding Tempe's GRID bike share system.
- Presentation
  - Existing conditions of the program
  - Summary of City actions instituted against CycleHop
  - Options/alternatives available to the Commission

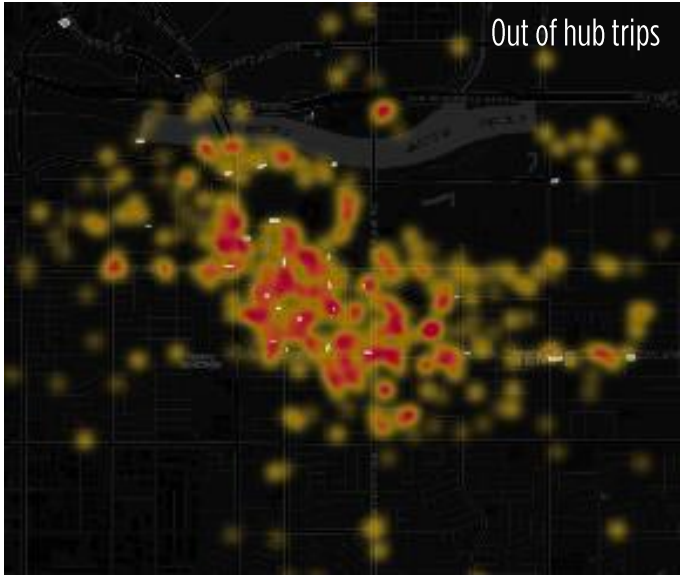
GRID Background

- Tempe system launched in May 2017
  - Docked bike share system for recreational and first-mile/last-mile service
  - $1.1M Federal CMAQ grant. $67,632 City match.
- Originally a Multi-Agency System – Tempe, Phoenix, Mesa, ASU
  - 300 bikes in Tempe (900 bikes regionally)
  - 32 stations (450 racks) in Tempe
  - MOU between Tempe, Phoenix and Mesa
  - IGA with ASU for half of operations costs (approval required annually)
- CycleHop is responsible for bike share operations and maintenance
  - Contract ends September 8, 2021
  - Subcontractor Social Bicycles is no longer providing software updates or selling hardware (bicycles, computers, etc.)

GRID Performance

- 93,552 Trips in Tempe since launch (May 2017 to April 2020)
- 291,226 Trips in Region since Phoenix launched in January 2016
- Highest performing Tempe hubs are in Downtown, ASU, and Town Lake
- GRID trip paths and destinations

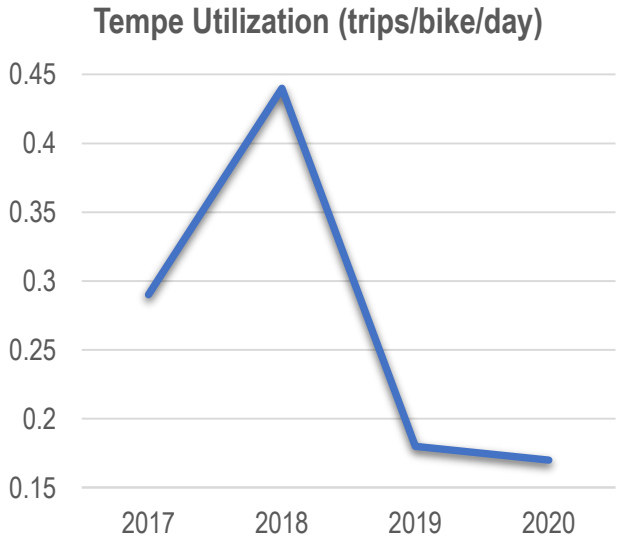


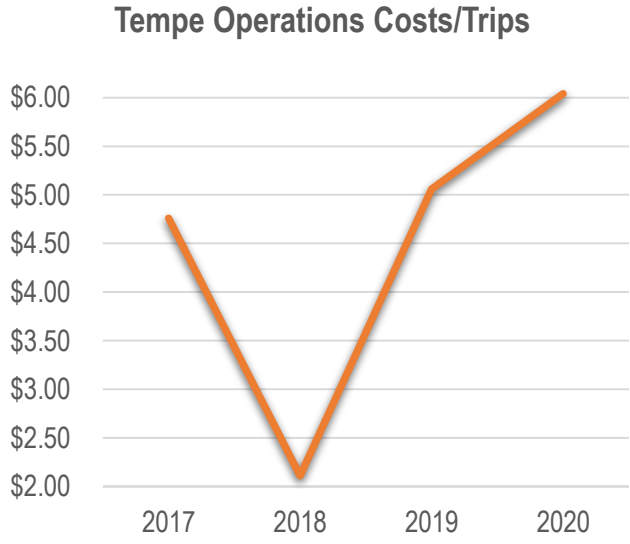


GRID Performance

- System utilization has been declining since 2018
- Riders expect door to door trips, different vehicle types, and a different pricing structure

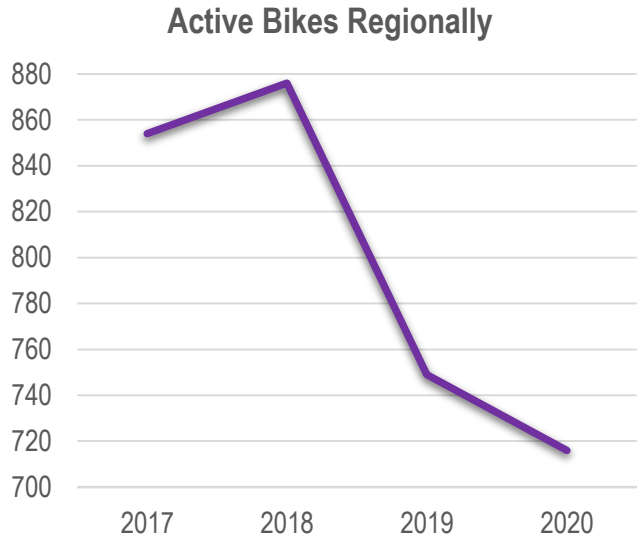
Monthly Average	2017	2018	2019	2020
Tempe Utilization	0.29	0.44	0.18	0.17
Tempe Trips	2,622	3,943	1,644	1,381
Operations Costs/Trips	$ 4.76	$ 2.11	$ 5.06	$ 6.04
Active Bikes Regionally	854	876	749	716





GRID Update

- Subcontractor (Social Bicycles) software/hardware is obsolete
- CycleHop proposed a solution and Tempe agreed on 10/28/2019; situation has not been remedied
- City of Mesa ended contract with CycleHop
- City of Phoenix is in discussions with CycleHop
- ASU is reluctant to renew the joint funding agreement with Tempe, due July 2020, until operations and equipment upgrades
- Tempe sent six Demands of Assurance letters to CycleHop regarding contract performance since the contract began in September 2016
- Partners (Phoenix, Mesa, ASU) expressed interest in exploring an inter-agency service provider(s)



Approaches/Options

- 1: City to continue contract with CycleHop
  - Without significant operational and hardware changes from CycleHop, ASU will likely terminate support for the program
  - Increase City annual operating costs from $50,000 to $100,000
- 2: City terminates CycleHop contract – Leverage licensed City operators
  - Utilizing private market- by encouraging existing Shared Active Transportation Vehicle license with revised terms to incentivize bike share
- 3: City terminates CycleHop contract – Issue an RFQ with operating requirements
  - City can proceed independently or potentially partner with ASU and other cities in securing a joint service provider by issuing an RFQ with requirements for a citywide or regional micromobility service provider.
- 4: City terminates GRID bike share program

Requirements

- Eliminate or minimize asset investments and recurring operating expenses.
- Provide a diversity of fleet offerings to possibly include recycling/repurposing of existing bikes; electric bikes; mobility-assist devices; and other existing or future micromobility devices.
- Allow for a mix of micromobility devices new operations model, including hybrid dockless operation, geofenced, and to locations identified by the City to improve first-mile / last-mile service.
- Adjust fees and pricing to allow for an equity category and to provide discounted rates for transit pass holders.
- Allow for flexible trip pricing that can be adapted to fit changing market conditions.
- Eliminate or minimize investment in equipment that may become quickly outdated.
- Provide regional consistency, if feasible.

Summary of Findings/Recommendations

- Terminate the contract with CycleHop.
- Pursue Approach 2 or Approach 3 which would require providers to meet Tempe's micromobility service objectives and goals as identified previously.
- Staff recommends to review and compare benefits, potential costs and risks to the City as well as reliability for users between Approach 2 or 3.
- Approaches will require time to pursue, including the potential shutdown of the GRID bike share program while searching for new provider(s).

Commission Direction

- Staff is seeking Transportation Commission recommendation on the GRID bike share system

- Next Step:
  - Staff will present to City Council the recommendation endorsed by the Transportation Commission

Questions

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480-350-2734

Tempe

MEMORANDUM

TO: Transportation Commission

FROM: Cathy Hollow, Traffic Engineer (480-350-8445)
Shelly Seyler, Deputy Engineering and Transportation Director (480-350-8854)

DATE: September 8, 2020

SUBJECT: Traffic Mitigation Strategies

AGENDA ITEM: 5

PURPOSE:
The purpose of this memo is to provide the Commission with information on the City's Streetscape and Transportation Enhancement Program.

RECOMMENDATION OR DIRECTION REQUESTED:
Staff seeks feedback from the Commission.

CITY COUNCIL STRATEGIC PRIORITY:
- Safe & Secure Communities – 1.08: Achieve a reduction in the number of fatal and serious injury crashes to zero.
- Quality of Life - 3.26: Achieve a multimodal transportation system (20-minute city) where residents can walk, bicycle, or use public transit to meet all basic daily, non-work needs.

BACKGROUND INFORMATION:
The City's Neighborhood Traffic Management Program (NTMP) launched in the late 1990's, primarily as a speed hump program, with the first speed humps installed in 1999. In 2006, the City recognized that tools beyond speed humps had been introduced as effective ways to calm traffic in neighborhoods and a multi-departmental team led by a consultant was created to update the program and conduct peer city analysis.

Updates to the program and process included the following:
- Process to include property owners
- Improved notification process for stakeholders
- Expanded opportunities for public comment
- Defined level of support needed to test proposed traffic measures
- Defined how comments are tallied
- Provided options for larger neighborhoods to determine consensus including small-scale and large-scale traffic calming alternatives
    - Small scale traffic calming projects implemented within the budgetary authority of the Engineering and Transportation Director (formerly the Public Works Manager)
    - Large scale projects required City Council action for budgeting

From January to March of 2007, public meetings were held, and the updated program was presented to City Commissions as well as Council Committees. A survey was also completed to gauge awareness of the former NTMP. The program was renamed the Streetscape and Transportation Enhancement Program (STEP) and the program and manual were adopted by Council resolution in March of 2008.

STREETSCAPE AND TRANSPORTATION ENHANCEMENT PROGRAM:
The updated program provides a variety of tools that can be used in combination or singularly to address concerns brought forward by residents. The tools are generally split into two categories; however, there is opportunity for including other options in small-scale projects and staff has seen an increase in these requests through the Neighborhood Grant Program.

Examples of Small-Scale Traffic Calming Alternatives

- Speed Cushions
- Speed Tables
- Striping
- Signage (Stop, Yield, Speed Limits, No Parking, Permit Parking)
- Enforcement

Examples of Large-Scale Traffic Calming Alternatives

- Traffic Circles
- Road Closures
- Semi-Diverters
- Star Diverters
- Cul-de-sacs
- Diagonal Diverters
- Chokers
- Right-turn Diverters
- Chicanes
- Traffic Footballs

The manual also outlines the process for requesting traffic calming. Projects are initiated by residents filling out the request form describing their concerns. In order to ensure effectiveness and success of the project, staff reviews the request and collects necessary data to document the concerns.

STEP Process for implementing Traffic Calming

- Stakeholder submits a STEP request form
    - Name
    - Written narrative of traffic concern
    - Any document that provides evidence of concerns
- Stakeholder support form
- City staff reviews application and if needed
    - Conduct surveys, counts or research
- City staff responds to the requestor
- Decisions made on whether to proceed with the project

From there the decision to proceed with a small-scale or large-scale project is made and the process for each path is provided to the residents.

For small scale projects, given the implementation falls within the budgetary authority of the Engineering and Transportation Director (formerly the Public Works Manager), the requestor is asked to gain consensus and support (via petition) from their neighbors. Staff has been asked in the past why the residents are required to carry the petition and it has been shown that success of reaching consensus is greater when a resident is able to describe to neighbors their concerns and experiences. If consensus is received, implementation proceeds based on budget availability. The current process for construction of speed cushions is through a JOC and the average cost per speed hump recently has ranged between $5,000 and $7,000. Consensus includes the following support:

- All, or 100% of stakeholders whose access is affected and who live immediately adjacent
- Most all, or 75% of stakeholders whose primary street would be affected
- A majority, or 51% of the remaining stakeholders who may be affected

For large scale projects, given the larger area of impact and the need for Council action for budgeting, the process is more involved. It should be noted that due to the recession in FY 2008/09 and elimination of funding. The City has received only one

request for a large-scale project, which was for the Daley Park neighborhood. After going through the process, consensus was not reach by the residents therefore the project was never built.

The first step in the process is for City staff to hold a public meeting. The purpose of the public meeting is to provide the affected stakeholders with a summary of the identified problem, the applicable tools to address the problem, available funding to address the problem, and the process for moving ahead. At the public meeting, City staff will also notify the stakeholders of the need for an Action Team and will request volunteers to participate on the Action Team.

The Action Team is made up of five to 10 stakeholder representatives, including the requestor and includes a geographically equitable distribution of stakeholders with a diversity of opinions related to the problem. If possible, a representative of an affected Homeowner's Association or Neighborhood Association formally recognized by the City is appointed to the Action Team.

The Action team then works together to develop a plan to address the problems outlined by the residents. Following the development of the plan, a second public meeting is held where the Action Team presents the Draft Action Plan and records comments. This is typically followed by a 30-day comment period so those not able to attend the public meeting are able to comment. In order to ensure effectiveness of the plan, testing of the measures is recommended and the group seeks support to test for 30 to 90-day period. The consensus for testing includes support from fifty-one or more percent of the households in the project area. During the test phase, staff again compiles comments from residents and determines if consensus for permanent installation is possible. Permanent traffic calming measure installation approvals consist of:

- All, or 100%, of the stakeholders whose street access is affected and who live immediately adjacent to the traffic management measure, agree with the measure.
- Most all, or 75%, of the stakeholders whose primary street would be affected by the traffic management measure agree with the implementation of the measure.
- A majority, or 51%, of the remaining stakeholders whose access is affected by the traffic management measure agree with the implementation of the measure.

Upon approval of implementation, the Draft Action Plan is presented to the Transportation Commission. If support is received, the project would be submitted for prioritization in the Capital Improvement Program as a separate project if it does not fit within the City's budget line item for traffic calming (historically funded between $100,000 to $200,000 per year).

In order to provide Council with as much information as possible, the City also reached out to other cities in the valley to gain insight into programs offered. The following matrix provides a summary of those programs.

CITY	PROGRAM	FEATURES	APPROVALS	DATA REQUIREMENTS
Tempe	Streetscape and Transportation Enhancement Program	No resident contribution	51% in affected area, 75% primary street access, and 100% immediately adjacent	400 vpd* & 85th percentile speed = 6 over speed limit
Scottsdale	Neighborhood Traffic Calming	No resident contribution	70% in affected area and 100% adjacent	500 vpd* & 40% are 5 mph over speed limit and more than 20% are 10 mph over speed limit
Mesa	Speed Hump Policy	Residents pay for initial traffic counts	70% in affected (300') and 100% within in 50'	500 vpd* & 85th percentile speed = 8 miles over speed limit
Phoenix	Speed humps & Speed Cushions Policies	Residents contribute to construction costs	70% within boundary area 100% within 100'	No thresholds. Average speed used to determine resident contribution
Chandler	Traffic Calming Measures	Residents may have to contribute	75% in affected area 100% within 100'	85th percentile speed = 32 mph or more

Glendale	Neighborhood Traffic Mitigation	Residents pay for study and construction	70% in affected area and 100% adjacent	500 vpd* & Average speed above 30 mph & 15% of speeding vehicles over 35 mph

***= Vehicles per Day**

FUNDING:

When the program was first implemented, approximately $200,000 per year was dedicated for funding. As indicated above, the initial program was primarily speed humps and at that time the average cost per speed hump was approximately $2,000. With the level of funding and costs for implementation, the City was able to support many neighborhoods in calming traffic on their streets.

Unfortunately, in FY 2008/2009 funding was put on hold due to the recession and eventually eliminated until FY 2016/17 when funding for the program was reinstated in the CIP at $100,000 per year. During the period when the program was unfunded, staff created a wait list and over 100 residents placed their names on the list. Staff has been working since FY 2016/17 to install speed humps and cushions for those on the waitlist and there are currently 32 residents who remain on the list. With the reductions needed in the HURF program related to the COVID-19 pandemic, funding for FY 2020/21 has been eliminated.

Questions have been raised about the potential for using developer contributions for funding the program. It should be recognized that developers currently contribute funding through Development Impact Fees and a list of projects identified for funding was included in the recently approved Council resolution. For reference, a list of projects that have been identified as eligible for development impact fees is listed below:

Street Improvement Projects – North Service Area

Description	Total Cost	Other Funding	Remaining Cost	Growth Share[1]	Growth Cost
Rural Rd & University Dr Intersection Improvements[2]	$6,110,000	$209,996	$5,900,004	28%	$1,670,719
Light Rail Efficiency[2]	$575,000	$19,694	$555,306	10%	$55,056
East Valley Arterial Congestion[2]	$265,385	$9,090	$256,295	10%	$25,410
Fiber Optic Broadway Rio Salado[2]	$333,645	$11,428	$322,217	10%	$31,946
Roundabout: College Ave & McKellips Rd	$1,094,314	$0	$1,094,314	21%	$229,806
Pedestrian Separation Intersection - College & University	$5,500,000	$0	$5,500,000	35%	$1,930,337
Pedestrian Separation Intersection - Rural & Terrace	$5,500,000	$0	$5,500,000	13%	$728,724
Rural Rd & Rio Salado Intersection Improvements	$3,400,000	$0	$3,400,000	21%	$707,516
Downtown ITS	$1,200,000	$0	$1,200,000	21%	$252,000
Fiber Optic Installation: Downtown	$1,000,000	$0	$1,000,000	21%	$210,000
Total	$24,978,344	$250,208	$24,728,136	24%	$5,841,514

1. Determined by 10-year increase in person trips (21%) or CivTech traffic study.
2. Project from current IIP.

10-Year Person Trip Increase	165,754
Cost per Person Trip	$35.24

Street Improvement Projects – South Service Area

Description	Total Cost	Other Funding	Remaining Cost	Growth Share[1]	Growth Cost
Roundabout: Priest Dr & Grove Pkwy	$1,437,714	$0	$1,437,714	31%	$449,286
Baseline Rd and Rural Rd Intersection Improvements	$1,045,000	$0	$1,045,000	31%	$326,563
Rural Rd & Southern Ave Intersection Improvements[2]	$3,078,000	$892,298	$2,185,702	13%	$287,842
Fiber Optic Elliot Guad and Warner[2]	$565,798	$19,379	$546,419	10%	$54,175
Total	$6,126,512	$911,677	$5,214,835	21%	$1,117,866

1. Determined by additional capacity available to future development.

2. Project from current IIP.

10-Year Person Trip Increase	44,555
Cost per Person Trip	$25.09

NEXT STEPS:
Receive Commission feedback on the program.

FISCAL IMPACT or IMPACT TO CURRENT RESOURCES:
No fiscal impact.

ATTACHMENTS:
1. PowerPoint
2. STEP Manual

Traffic Mitigation Strategies

(Neighborhood Traffic Management)

Transportation Commission

September 8, 2020

Tempe

Performance Measure

Safe & Secure Communities

1.08: Achieve a reduction in the number of fatal and serious injury crashes to zero.

Quality of Life

3.26: Achieve a multimodal transportation system (20-minute city) where residents can walk, bicycle, or use public transit to meet all basic daily, non-work needs.

History of Implementation Traffic Mitigation Measures

How have we installed devices in neighborhoods in the past?

- Streetscape and Transportation Enhancement Program (formerly the Neighborhood Traffic Management program)
- Neighborhood Grant Program – limited to $15,000 per neighborhood

NTMP and STEP

Neighborhood Traffic Management Program (NTMP)

- Primarily Speed Hump Program
  - Locations tested to determine support and effectiveness
  - Program launched late 1990's with first speed humps installed 1999

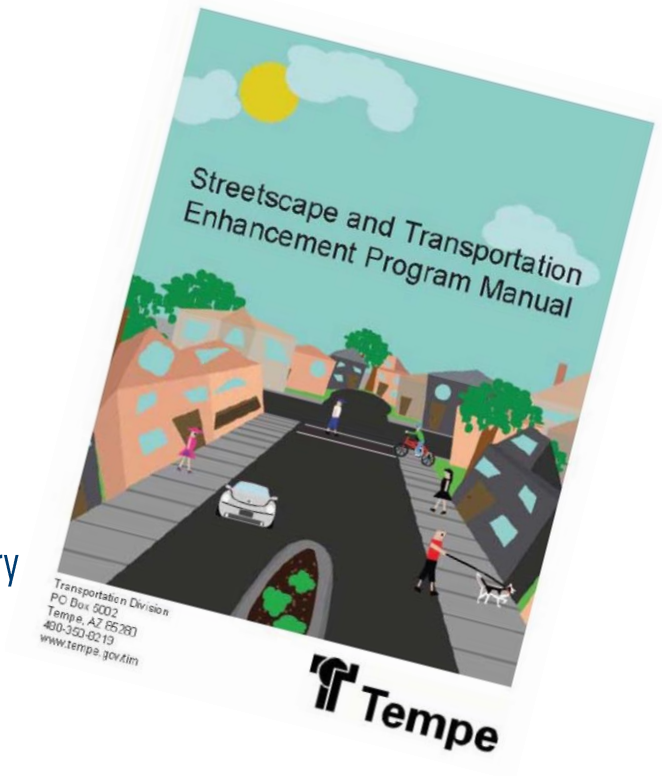
Streetscape and Transportation Enhancement Program (STEP)

- 2006: Multi-departmental team updated program & completed peer city analysis
- 2006: Council Issue Review Session
- 2007: Public meetings held and presented to Commissions and Council Committees
- 2007: Survey completed to gauge awareness of the former NTMP
- 2007: STEP Manual finalized
- 2008: Council Resolution revising the NTMP Manual and changing name to STEP

STEP Manual

Why was the Neighborhood program updated?

- Included property owners in the process
- Improved notification process
- Expanded opportunities for public comment
- Defined the level of support needed to test traffic measures
- Defined how comments are tallied
- Provided options for larger neighborhoods including small scale and large-scale alternatives
  - Small scale traffic calming projects implemented within the budgetary authority of the Engineering & Transportation Director
  - Large scale projects require City Council action for budgeting



What type of devices are available

Examples of Large-Scale Traffic Calming Alternatives

- Traffic Circles
- Road Closures
- Semi-Diverters
- Star Diverters
- Cul-de-sacs
- Diagonal Diverters
- Chokers
- Right-turn Diverters
- Chicanes
- Traffic Footballs

Examples of Small-Scale Traffic Calming Alternatives

- Speed Cushions (Humps)
- Speed Tables
- Signage (Stop, Yield, Speed Limits, No Parking, Permit Parking)
- Striping
- Enforcement

STEP Process for implementing Traffic Calming

- Stakeholder submits STEP request form
  - Name
  - Written narrative of traffic concern
  - Evidence of concerns
  - Stakeholder support form
- City staff review application and if needed
  - Conduct surveys, counts or research
- City staff respond to the requestor
- Decision to proceed with project

Implementing Traffic Calming – Small Scale

Small scale project process

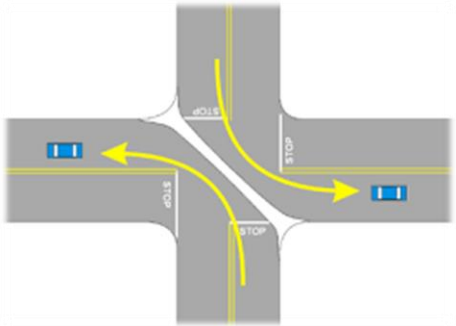
- Requestor works to gain consensus approval
- Petition provided by the city
  - 100% of stakeholders who access is affected and who live immediately adjacent
  - 75% of stakeholders whose primary street would be affected
  - 51% of the remaining stakeholders who may be affected
- If consensus received, implementation proceeds based on budget availability

Implementing Traffic Calming – Large Scale

Large Scale Project Process

- Public meetings held with affected stakeholders
- Action Team formed to develop draft Action Plan
- Community presentation for testing - second public meeting
- 30-day comment period
- Conditions for approval for testing
  - 51% of project area is in favor of testing
- Test period occurs and City takes comments
- Conditions for approval of implementation
  - 100% of stakeholders who access is affected and who live immediately adjacent
  - 75% of stakeholders whose primary street would be affected
  - 51% of the remaining stakeholders who may be affected
- Project selection and prioritization (submittal for CIP funding)

(Source: PennDOT Local Technical Assistance Program)



CITY	PROGRAM	FEATURES	APPROVALS	DATA REQUIREMENTS
Tempe	Streetscape and Transportation Enhancement Program	No resident contribution	51% in affected area, 75% primary street access, and 100% immediately adjacent	400 vpd* & 85th percentile speed = 6 mph over speed limit
Scottsdale	Neighborhood Traffic Calming	No resident contribution	70% in affected area and 100% adjacent	500 vpd* & 40% are 5 mph over speed limit and more than 20% are 10 mph over speed limit
Mesa	Speed Hump Policy	Residents pay for initial traffic counts	70% in affected (300') and 100% within in 50'	500 vpd* & 85th percentile speed = 8 mph over speed limit
Phoenix	Speed humps & Speed Cushions Policies	Residents contribute to construction costs	70% within boundary area 100% within 100'	No thresholds. Average speed used to determine resident contribution
Chandler	Traffic Calming Measures	Residents may have to contribute	75% in affected area 100% within 100'	85th percentile speed = 32 mph or more
Glendale	Neighborhood Traffic Mitigation	Residents pay for study and construction	70% in affected area and 100% adjacent	500 vpd* & Average speed above 30 mph & 15% of speeding vehicles over 35 mph

* Vehicles per Day

Funding

History of Funding

- Historical funding = $200,000/yr
- FY 08/09 funding put on hold due to the recession and eventually eliminated
  - Staff created a wait list while program was on hold
  - Over 100 residents' names on wait list
- FY 16/17 funding reinstated in CIP @ $100,000/yr
- FY 20/21 – Funding for program placed on hold
  - 32 locations remain on the list as of mid-August

Potential Funding Sources

- Capital Improvement Program
- Developer contributions through Development Agreement or Development Review Process

Commission Feedback

Receive Commission feedback on the STEP program.

Streetscape and Transportation Enhancement Program Manual

Transportation Division
PO Box 5002
Tempe, AZ 85280
480-350-8219
www.tempe.gov/tim

Tempe

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1 1.0 INTRODUCTION

Traffic is a concern for many Tempe residents. In order to provide safe and efficient traffic conditions on neighborhood streets, the City of Tempe Transportation Division has developed the Streetscape and Transportation Enhancement Program (STEP), which includes policies and guidelines to improve traffic conditions on Tempe streets.

Several objectives have been established to clearly define a program and process that may be implemented for large and small scale projects, including the current speed hump program, and other projects that may or may not be addressed through the City's existing Capital Improvement Program (CIP). The City of Tempe developed the STEP manual to outline a process that the City can use to prioritize projects and the steps necessary for initiation and implementation by residents and neighborhood groups.

Additionally, the City has emphasized the importance of broad-based resident participation in the STEP process, which is essential to the development of a safe, effective transportation system.

Through the development of the Comprehensive Transportation Plan, the City of Tempe established goals, policies, and measures to create the best environment for residents and guests to live, work, and play, through the integration of transportation and land use policies that will ensure the development and implementation of a safe, efficient, accessible, and balanced transportation system.

Additionally, the Transportation Element of the General Plan will incorporate the Comprehensive Transportation Plan and will identify City goals, policies, and objectives to provide a vibrant, safe, efficient, and balanced transportation system in Tempe. The predominant objective is to provide enhanced mobility, clean air, conservation of energy, neighborhood livability and enhanced quality of life.

Guiding principals and policies that provide the foundation for the City's Transportation goals as stated in the Comprehensive Transportation Plan include:

- The commitment to accommodating additional regional travel demand and capacity needs by enhancing transit and other modes as alternatives to widening.
- The application of regional funding to capital and operating expenses for traffic and transit investments to meet future and current travel needs and demands.
- Accommodating additional demand and optimizing the transportation network through the use of new technology or innovative approaches such as Intelligent Transportation Systems (ITS) and Travel Demand Management (TDM) programs.

The Comprehensive Transportation Plan will also serve as the Transportation Element of the General Plan. The general objectives of the Plan are outlined as:

- Developing a functional relationship between the diverse land uses in Tempe and the transportation system that serves them.
- Identifying strategies for strengthening cooperative land use, transportation planning and design efforts between the

1 1.0 INTRODUCTION

City of Tempe, Arizona State University, and other public and private stakeholders.

- Continuing to actively involve neighborhood and community representatives in on-going planning and design of transportation systems, facilities, and services.
- Working to ensure that transportation solutions preserve and enhance Tempe's neighborhoods, and that Tempe's zoning ordinances and relevant codes are consistent with transportation goals.
- Incorporating the provisions of the Comprehensive Transportation Plan as the Transportation Element of the General Plan.
- Establishing a strong visual identity and aesthetic for Tempe, its gateway entrances, and its neighborhoods.

Additionally, the City of Tempe has established measures of success as a benchmark to monitor progress and effectiveness of the Comprehensive Transportation Plan's recommended policies over time. The effectiveness of the implementation of the Plan will be monitored by several measures of success. These measures are as follows:

- The majority of Tempe residents feel that their community has an excellent transportation system that contributes to making Tempe the best place to live, work, and play. City codes and ordinances work together to balance transportation and land use, enhancing Tempe's quality of life and encouraging sustainable economic development.
- All Tempe neighborhoods have safe and convenient bicycle and pedestrian access to neighborhood schools, parks, shopping, and transit.
- Transportation improvements needed to implement neighborhood plans are in place by 2030.
- The rate per capita of single occupant vehicle miles traveled within Tempe is reduced by at least 20 percent by 2030.
- Transit trips as a percentage of all trips within Tempe at least double by 2030.
- All Tempe residents have access to fast and frequent (10- to 15-minute) transit service within a 5- to 10- minute walk from home.
- One third of attendees use transit, bike, or walk to special events in Tempe.
- A one-mile bikeway grid system is created.
- Air quality "hot spots" are reduced within Tempe and the City contributes to bringing overall regional air quality within attainable standards.

2 2.0 STEP GOALS AND POLICIES

The welfare of the City requires the safe, efficient and economical movement of persons and goods while maintaining livability and environmental quality. It is essential to develop and maintain a complete transportation system (freeways, major streets, public transit, bicycle, and pedestrian ways) adequate to accommodate public needs. The intensity of land development and the travel demand produced by it must be in balance with the planned capacity of the transportation system. If this balance is not maintained, the inevitable result is traffic intrusion onto residential, local and collector streets.

By implementing the STEP, the City of Tempe expects to:

- Protect neighborhoods from "unwanted" traffic
- Encourage broad-based resident participation
- Reduce the speed and/or volume of traffic on local and collector streets

GENERAL SCOPE

The City developed the STEP to reassess and introduce a clear process for handling traffic issues and to provide new alternatives to the existing traffic management program. The STEP process addresses both small and large scale traffic calming alternatives. A small scale traffic calming project is one that can be implemented within the budgetary authority of the Public Works Manager, while one that requires City Council action for budgeting, will be considered a large scale project. The STEP outlines a process that the City can use to prioritize projects and steps necessary for initiation and implementation by residents and neighborhood groups.

In the past, the primary tool used to address concerns about speeding and unwanted traffic was speed humps. However, requests for speed humps have declined over time and the development of a clear STEP protocol in which neighbors can be involved in larger scale changes has become necessary.

Traffic problems addressed by the STEP include:

- Speeding
- High-volume traffic
- Pedestrian and bicycle safety
- "Unwanted" traffic
- Sight-distance problems
- On-going traffic law violations

LARGE AND SMALL SCALE PROBLEMS

Large scale traffic problems, or problems necessitating solutions which require Council approval, typically involve failure to fully stop at multiple intersection signs, excessive speeding or large volumes of traffic that significantly impact residential streets, multiple intersections, or multiple street corridors within a particular area.

Resolution to large scale problems often requires an area-wide approach.

Examples of large scale traffic calming alternatives are:

- Traffic circles
- Road closures
- Semi-diverters
- Star diverters
- Cul-de-sacs
- Diagonal diverters
- Chokers

2 2.0 STEP GOALS AND POLICIES

- Right-turn diverters
- Chicanes
- Traffic footballs

Small scale traffic problems can be addressed through the use of one of the tools listed above, and/or a combination of several alternatives including signage, enforcement, striping, or public notification. City staff may determine that the traffic issue will effectively be solved through signage, enforcement, striping, or public notification, and can implement those options without a consensus of approval. Examples of small scale traffic problems are blocked views of traffic at intersections, failure to stop at intersection stop signs, motorists parking along curbs and blocking driveways, traffic volume not allowing pedestrians or motorists to cross streets, excessive traffic speeds along a segment of street less than one block long, or reoccurring traffic collisions.

Small scale projects typically include alternatives such as:

Signage

- Stop *
- Yield
- Speed Limits
- Stop Ahead
- No Parking
- Permit Parking **
- Loading Zones
- Handicap Parking Zones

*Note: The installation of stop signs must be consistent with the warrants established by the Manual of Uniform Traffic Control Devices (MUTCD) and City of Tempe.

**Note: The City of Tempe has an existing program for permit parking that should be deferred to if the permit parking option is being considered.

Striping/Pavement

- Street centerline
- Red curb
- Lane lines
- Crosswalks
- Stop bars
- Speed humps
- Yellow curb
- Parking areas
- Parking restrictions

Enforcement

- Increased police presence
- Selective Enforcement Motorcycle Squad

3 3.0 STEP GUIDELINES AND PROCESS

The STEP provides stakeholders a process to request that the City implement traffic calming devices or strategies in their neighborhoods. Stakeholders include both the property owner and the responsible individuals who reside in the home. A successful process includes reporting a problem, requesting a field evaluation from City staff, developing an Action Team, identifying possible solutions to neighborhood traffic conditions, conducting community meetings, achieving consensus for testing the measures and achieving consensus for implementing traffic mitigation solutions that are uniquely tailored to traffic problems in the neighborhood.

The process relies heavily on the involvement of the stakeholder making the request and an Action Team. City staff will provide technical assistance and identify base costs that the City would be responsible for and any costs for "betterments" that would be required by the affected mitigation area. Any "betterments," or additional construction such as landscaping in a median, would not be eligible for funding as a part of the STEP and would require funding from stakeholders with a consensus of approval and/or through application to the Neighborhood Grant Program.

Prior to submitting a Citizen Request Form for the review of a neighborhood traffic problem, it is highly suggested that the citizen utilize the Selective Enforcement Motorcycle Squad program offered by the City.

SELECTIVE ENFORCEMENT MOTORCYCLE SQUAD

The Selective Enforcement Motorcycle Squad (SEMS) is a traffic enforcement unit within the Police Department. The SEMS unit was created to work on neighborhood traffic safety concerns in cooperation with the City of Tempe Transportation and Neighborhood Services divisions. SEMS provides stronger enforcement measures including the use of radar to reduce vehicular speeding in neighborhoods and the presence of motorcycle officers to deter other issues. If you would like to notify the SEMS unit about an on-going traffic concern, you can:

- Call 480-858-7376
- Visit www.tempe.gov/police/trafficbureau/complaintform.html
- Visit the Tempe PD Station located at 120 E. 5th Street or the Tempe PD Substation located at 8201 S. Hardy Drive

Even if a stakeholder has chosen to utilize the Selective Enforcement Motorcycle Squad program offered by the City, they may choose to initiate the STEP process.

STAKEHOLDER SUBMITS A STEP REQUEST FORM

The stakeholder submits a STEP request form which includes the following information:

- Name and address
- Written narrative of the traffic concern
- Any documentation (photos, video, etc.) that provides evidence
- A stakeholder support form or letter by five additional households or property owners supporting the traffic concern

Once the request is submitted, the requests will be processed in the order in which they are received.

CITY STAFF REVIEW

Upon receipt of a completed request form, City staff will review the application and, if needed, conduct the applicable field surveys, traffic counts or data research necessary to determine the following:

- Is there a problem that justifies further action?
- What type of problem is it?

3 3.0 STEP GUIDELINES AND PROCESS

- What is the study area for the identified problem?
- What are the applicable tools from the toolbox to address the problem?

CITY STAFF RESPONSE

City staff will prepare an initial response to the requestor within 30 days outlining necessary studies, traffic counts or data research. After completion of the initial studies, staff will prepare a memorandum that verifies the recommendation for further action, details the problem, identifies the potential study area and lists the applicable tools that could be implemented to address the problem. Project area boundaries in which input will be sought will be determined by City staff based on the Traffic Engineer's assessment of how the proposed traffic calming measure will impact the surrounding area. Each tool will include the costs that are to be paid by the City and costs that would be required to be paid by stakeholders within the study area. Finally, the memorandum would outline the process and timeline for moving ahead.

If City staff indicates that the proposed problem does not justify further action, the requestor can choose to appeal to the Public Works Manager, who may reverse the decision.

DECISION TO PROCEED WITH SMALL SCALE PROJECTS

In response to the memorandum, the requestor may choose to proceed or end the process. If the recommended action is a small scale solution, then the project can move forward with the requestor working to gain consensus approval, defined as, petition approval by:

- All, or 100%, of the stakeholders whose street access is affected and who live immediately adjacent to the traffic management measure, agree with the measure.
- Most all, or 75%, of the stakeholders whose primary street would be affected by the traffic management measure agree with the implementation of the measure.
- A majority, or 51%, of the remaining stakeholders whose access is affected by the traffic management measure agree with the implementation of the measure.

The petition for approval will be provided by City staff.

A small scale project is typically defined as a project that:

- Can be implemented within the budgetary authority of the Public Works Manager
- Includes speed reduction measures such as speed humps or speed tables
- Includes signage, striping, enforcement, or other such changes to traffic circulation that do not require a wide area approach

DECISION TO PROCEED WITH LARGE SCALE PROJECTS

If the recommended action is a large scale project, and the requestor chooses to proceed, City staff will hold public meetings with the affected stakeholders to determine the appropriate actions.

STEP TEAM INFORMATIONAL MEETING

City staff will send notification to the affected neighborhood about the public meeting. Meetings will be held independently of other neighborhood meetings and the agenda will be set by the City, unless there is a neighborhood meeting in which City staff can facilitate

3 3.0 STEP GUIDELINES AND PROCESS

the discussion. A reasonable effort will be made to notify both the property owner and the person who lives at the address of the property in the project area, including multi-family housing. The purpose of the public meeting is to provide the affected stakeholders a summary of the identified problem, the applicable tools to address the problem, available funding to address the problem, and the process for moving ahead. Notification of public meetings will be sent via US mail and/or via doorhangers as determined by City staff. Additional methods could be used as determined by City staff. At the public meeting, City staff will also notify the stakeholers of the need for an Action Team and will request volunteers to participate on the Action Team.

FORM AN ACTION TEAM

The Action Team will be made up of five to 10 stakeholder representatives, including the requestor. The Action Team will include a geographically equitable distribution of stakeholders with a diversity of opinions related to the problem. If possible, a representative of an affected Homeowner's Association or Neighborhood Association formally recognized by the City will be appointed to the Action Team.

DEVELOP A DRAFT ACTION PLAN

The Action Team will determine meeting times and locations to develop a draft Action Plan. Working collaboratively with City staff, the team will develop an Action Plan that includes:

- A statement of the problem
- A statement or list of the objectives
- A map of the study area: including a boundary of the study area and adjoining area; private property lines; streets and the location of the proposed toolbox solutions
- A description and photograph of any of the traffic calming tools to be used
- A schedule for installing the traffic calming test measures(s)
- Identification of tools that may be installed on a temporary basis to further measure community support before permanent installation
- A summary of the project costs based on the City estimate for installation and the community commitment for funding betterments, if any
- Future monitoring of traffic conditions to ensure the effectiveness of the solutions

COMMUNITY PRESENTATION FOR TESTING

A second public meeting will be held to present the Draft Action Plan and record public comments. The City will make a reasonable effort to notify each household or property owner in the study area advertising the time, date, location and purpose of the meeting via mailing/doorhangers. Notification will include a link to the City website where the Draft Action Plan can be reviewed and downloaded. Those not able to attend the meeting will be provided the opportunity to comment via letter, telephone, email, or on the City's website. The public meeting will provide an opportunity for the Action Team, with the support of City staff, to present the recommendations that have been developed.

3 3.0 STEP GUIDELINES AND PROCESS

30-DAY COMMENT PERIOD

A 30-day comment period will be initiated after the public meeting. During the 30-day comment period, staff will compile and review the written comments submitted via letter, telephone, email, at the public meeting, or on the City website. The online comment form will be available for a one-month period. The stakeholders must provide their name and address in order for the comment to be included in the official public comment. After the 30-day comment period, City staff will prepare a tally of stakeholder input to confirm whether or not consensus for the proposed traffic calming measure was reached.

For the testing and implementation of traffic calming measures, multiple comments in favor or against the traffic calming measures from each single-family household will be counted as one comment. If comments from a single household conflict with each other, the comments will not be counted. It is up to each household to agree on their position. If the comments (in favor or against the proposed traffic calming measure) from the property owner and the renter are in disagreement, the property owner's comment will be counted toward the overall comment tally.

City staff will communicate the findings of the comment period to the neighborhood and determine the next steps.

If, based on stakeholder input, City staff believes it is possible to obtain consensus, City staff will work with the Action Team to obtain consensus as outlined in Conditions for Approval. If, based on stakeholder input, City staff determines that consensus is not possible, the findings will be referred back to the Action Team for further consideration.

CONDITIONS FOR APPROVAL OF TESTING

The consensus threshold for testing of proposed traffic calming measures is:

- Fifty-one or more percent of the households in the project area that comment on the proposed traffic calming measures must be in favor of testing of the measures prior to implementation of testing. Staff will determine if sufficient level of neighborhood participation has occurred prior to testing.

If consensus is reached to test the traffic calming measures, a minimum 30-day (90-day maximum) test period will occur. Staff will attempt to hold follow-up neighborhood meetings during the middle to end stages of the test phase.

During the test phase, staff will compile and review the written comments submitted via letter, telephone, email, at the public meeting, or on the City website. The online comment form will be available to determine the level of support of the test. The stakeholders must provide their name and address in order for the comment to be included in the official public comment. After the comment period, the City staff will prepare a tally of stakeholder input to confirm whether or not consensus for implementation can be reached.

CONDITIONS FOR APPROVAL OF IMPLEMENTATION

If consensus is possible, City staff will work with the Action Team to document final approval for implementation.

3 3.0 STEP GUIDELINES AND PROCESS

Permanent traffic calming measure installation approvals shall consist of:

- All, or 100%, of the stakeholders whose street access is affected and who live immediately adjacent to the traffic management measure, agree with the measure.
- Most all, or 75%, of the stakeholders whose primary street would be affected by the traffic management measure agree with the implementation of the measure.
- A majority, or 51%, of the remaining stakeholders whose access is affected by the traffic management measure agree with the implementation of the measure.

For project areas with 100 or more households, petition signatures must be collected for 100% of those stakeholders adjacent to the traffic calming measure, and 75% of those stakeholders on the same street as the traffic calming measure. Petition signatures may be collected for 51% of the stakeholders whose access is affected or the City will mail postage-paid ballots or use other methods to determine the level of support for these stakeholders.

Upon approval of implementation, the Draft Action Plan will be presented to the Transportation Commission. If the Draft Action Plan requires additional funding outside the established Capital Improvement Program (CIP), the Transportation Commission will provide a recommendation and forward the item to the City Council for approval. If the Draft Action Plan does not require additional funding outside the CIP, the presentation to the Transportation Commission is for information only.

IF APPROVAL IS NOT ACHIEVED

If the conditions for approval are not met, City staff will revise the Draft Action Plan to address the issues raised at the community meeting and expressed in the written feedback. The Action Team will then meet to review the revised Draft Action Plan and determine if the newly revised Draft should be presented at a public meeting. If so, the revised Draft Action Plan will be presented to the neighbors and the process of gathering stakeholder feedback will begin again (i.e., City staff will compile input from area stakeholders during a 30-day period).

PROJECT SELECTION AND PRIORITIZATION

Once a project has been selected and it has the necessary approval of the stakeholders as outlined above, it will be prioritized for funding. Small scale projects and speed humps are typically funded through a line item in the City budget for traffic management. However, large scale projects, depending on the estimate of their costs, may require a separate budget line item as a part of the City's CIP. Projects to be funded through the line item for traffic management will be prioritized by City staff on a first-come, first served basis. Large scale projects requiring other funding will be prioritized by City staff as a part of the City's annual budgeting process. Whether small or large, the ability of the City to implement projects in any given year may be limited by the availability of City funds for such purposes. The Neighborhood grant funds are available for Neighborhood and Homeowner's Associations registered within the City's Neighborhood Services Division. Traffic calming projects and enhancements are eligible for consideration in this competitive annual funding process.

A STEP "tool" is a mechanism (e.g., speed hump, traffic circle) or activity (e.g., police enforcement) that effectively changes the driving behavior of motorists.

4 4.0 STEP TOOLBOX

The STEP tools have been developed to address traffic calming through speed control, volume control, safety and effectiveness.

The toolbox of techniques is consistent with the Maricopa Association of Governments (MAG), Americans with Disabilities Act (ADA), American Association of State Highway and Transportation Officials (AASHTO), and City of Tempe design standards for vehicular, bicycle and pedestrian traffic. The toolbox will be available to residents and will take into consideration "green" principles.

Table 1 summarizes each of the tools which are further explained in this section.

Table 2 outlines the estimated construction costs for each tool.

IDENTIFY THE PROBLEM

Streets often have a single problem, or problems for which there is a single cause that requires tools designed to address the root cause of the problem. For example, unwanted traffic in a neighborhood may generate complaints about speeding. Implementing tools that reduce speeding may have a short term benefit, but may not address the larger concern, which is unwanted traffic. Therefore, City staff, through the analysis of the problem identified by a neighborhood, may recommend the use of tools that address the cause of the problem – unwanted traffic, rather than tools that simply address the affect – speeding.

MIXING/MATCHING

While there may be more than one tool appropriate for solving a traffic problem, the use of a variety of tools can have an unintended effect of increasing project costs and/or causing confusion for motorists which can also be a safety hazard. Therefore, consideration must be given as to the appropriate matching of tools, and their placement and spacing in such a manner that they do not have unintended consequences.

MULTI-MODAL CONSIDERATIONS

Streets serve many modes, including buses, bicycles and pedestrians. As a result, any tool used to affect the way that cars operate on a street may also affect transit buses, emergency vehicles, bicyclists and pedestrians.

In considering the tools to be applied, the potential affect on these other modes must be taken into consideration so that there are not unintended consequences of the action. In some cases, the implementation and/or placement of traffic management tools such as a speed hump, may restrict access or affect the response time of emergency vehicles.

The tools in the STEP toolbox identify the potential for impact to other modes to ensure the safety of others using the street. When designing the traffic calming tool, bicycle and pedestrian movement will be taken into consideration.

4 TABLE 1: IMPACTS OF TRAFFIC MANAGEMENT DEVICES

Traffic Device/Type	Traffic Reduction	Speed Reduction	Safety	Traffic Access Re-striction	Emergency Vehicle Access	Maintenance Problems	Level of Violation	Impact to Bicycles	Impact to Transit	Costs
Median	No	Yes	None	Some	No Problems	Vandalism	Low	Some	None	Moderate
One-way Choker	Likely	Yes	None	None	Some constraint	Yes	Moderate	Minor	Minor	Moderate
Two-way Choker	No	Minor	None	Non	No Problems	Yes	Low	Yes	Yes	Moderate
Bulb-Out	Unlikely	Minor	Improved for peds	None	Some constraint	Yes	Low	Yes	Yes	Moderate
Chicane	Unlikely	Likely	None	None	Some constraint	Vandalism	Moderate	Minor	Minor	Moderate
Star diverters	Yes	Yes	Unclear	Yes	Some constraints	Yes	Low	None	Yes	Moderate
Right-turn diverters	Yes	Likely	Unclear	Minor	Minor	Low	Low	None	Some	Moderate
Traffic Footballs	Unlikely	Likely	None	None	Likely	Likely	Low	Some	Some	High
Intersection Cul-de-sac	Yes	Likely	Improved	Total	Some constraint	Vandalism	Low	None	Totally restricted	HIgh
Traffic Circle	Possible	Likely	Unclear	None	Some constraints	Vandalism	Low	None	Restricted	Moderate
Median Barrier	Yes	None	Improved	Right turn only	Minor constraint	None	Low	Minor constraint	None	Moderate
Roundabouts	Possible	Likely	Unclear	None	None	Likely	Low	None	None	High
Speed Humps*	Unlikely	Minor	None	None	Minor	None	Low	Minor	Some	Low
Speed Tables	Unlikely	Minor	None	None	Minor	None	Low	Minor	Some	Moderate
Departure Choker	Yes	Minor	Improved	Yes	No Problems	None	Moderate	Minor	Some	Moderate
Entry Choker	Yes	Minor	Improved	Yes	Some constraint	None	Moderate	Minor	Possible	Moderate
Diverters	Yes	Likely	Improved	Yes	Some constraints	Yes	Low	Minor	Yes	Moderate
Semi-diverter (Type A)	Yes	Likely	Improved	One direction	Minor constraint	Vandalism	High	Some	Some	Moderate
Semi-diverter (Type B)	Yes	Likely	Improved	Yes	Some constraint	Yes	Low	None	Yes	Moderate
Stop Sign*	Unlikely	None	Unclear	None	No Problems	Vandalism	High	None	None	Low
No left/right Turn Signs	Yes	None	Improved	No turns	No Problems	Vandalism	High	None	No Turns	Low
One-Way Street	Unlikely	None	Improved	One direction	One direction	None	Low	One direction	One direction	Low
Chokers	Unlikely	Minor	Improved for peds	None	Some constraints	None	Low	Minor constraint	None	Moderate
Diagonal diverters	Yes	Likely	Improved	Thru Traffic	Some constraints	Vandalism	Low	Some	Some	Moderate
Right-turn diverters	Yes	Likely	Unclear	Minor	Minor	Low	Low	None	Some	Moderate
Permit Parking*	No	No	None	None	None	Low	Low	None	None	Low

*Existing Program

4 4.0 MEDIAN

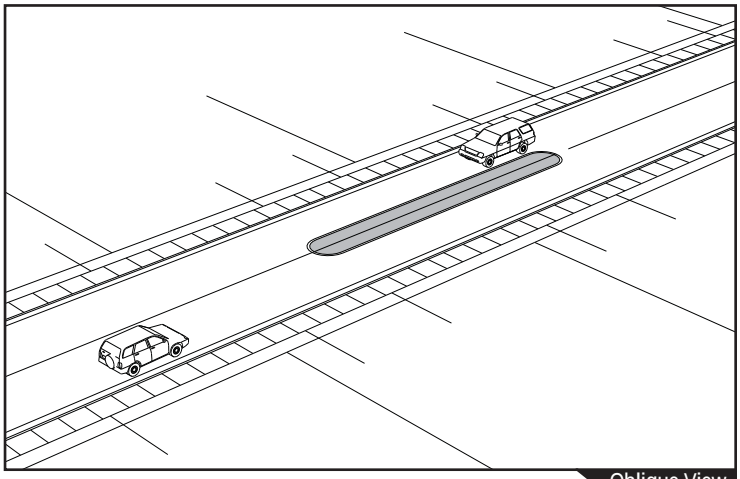
PURPOSE:
A median is a raised island near the centerline of a local street. The median narrows the traffic flow and serves as a "channel" to slow traffic.

DESIGN CONSIDERATIONS:
The construction of a median may be funded by the City of Tempe based on the budgetary authority of the Public Works Manager. Landscaping or other improvements beyond basic construction may increase the cost of the project and may require additional stakeholder participation in funding.

Depending on the type and location of the median, utilities may be impacted and require some level of relocation.

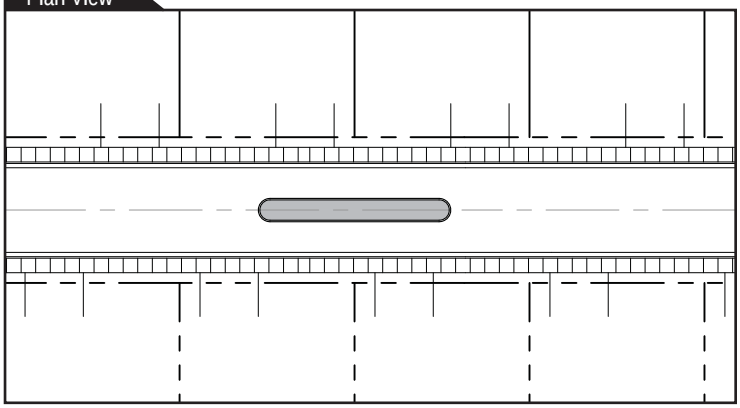
ADVANTAGES:
The implementation of a median for traffic calming will produce a speed reduction and may reduce traffic noise. Medians may be constructed on local, collector, or arterial streets.

DISADVANTAGES:
Medians do not reduce traffic or inherently improve safety and will require maintenance. The implementation of medians will, in most cases, limit on-street parking. Medians may also limit bicycle lanes and driveway access.



Oblique View

Plan View



Can be used on local street	Yes
Can be used on collector street	Maybe
Can be used on arterial street	Maybe
Reduces traffic	No
Reduces operating speed	Yes
Reduces noise	Maybe
Improves safety	No
Restricts traffic access	Maybe
Restricts and/or slows emergency response time	No
Requires maintenance due to vandalism	Yes
Level of violations	Low
Adversely impacts bicyclists	Maybe
Adversely impacts transit	No

Fast Facts

4 4.0 ONE-WAY CHOKER

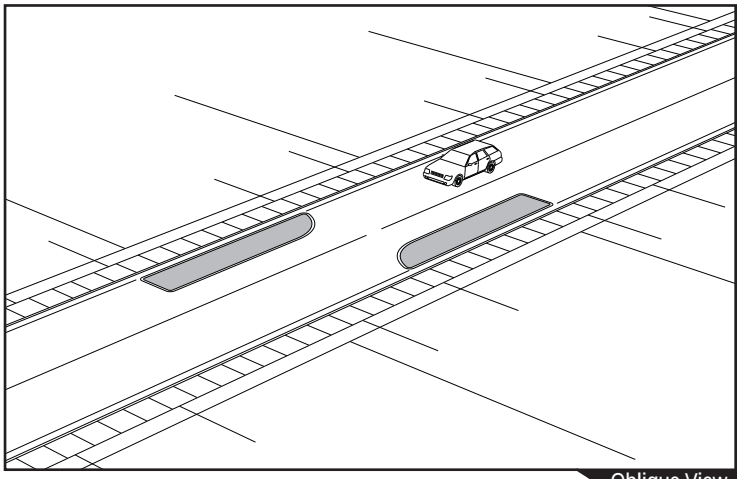
PURPOSE:
The one-way choker is a barrier on either side of the street that "channels" traffic at certain points on local streets. The one-way choker serves to reduce traffic speed, noise, and may reduce traffic volume.

DESIGN CONSIDERATIONS:
The construction of a one-way choker may be funded by the City of Tempe based on the budgetary authority of the Public Works Manager. Landscaping or other improvements beyond basic construction may increase the cost of the project and may require additional stakeholder participation in funding.

Depending on the type and location of the one-way choker, utilities may be impacted and require some level of relocation. Problems related to drainage may also result from the implementation of the one-way choker.

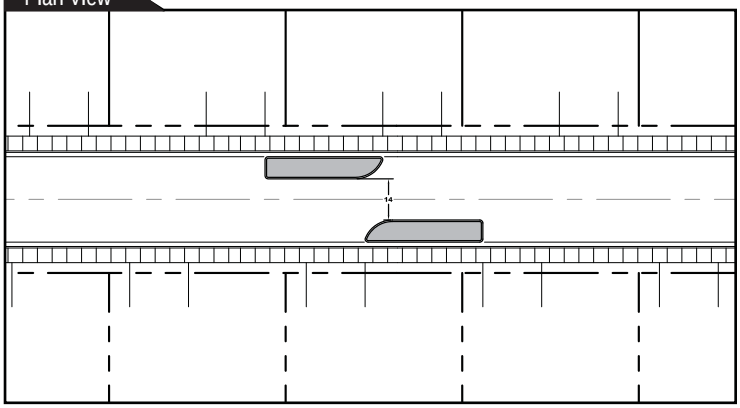
ADVANTAGES:
The one-way choker can be used on local streets and may reduce traffic volume as well as traffic speeds and traffic noise.

DISADVANTAGES:
The one-way choker is a higher cost alternative and may result in the development of new traffic patterns of travel. The one-way choker may restrict emergency vehicle access and access to driveways.



Oblique View

Plan View



Can be used on local street	Yes
Can be used on collector street	No
Can be used on arterial street	No
Reduces traffic	Maybe
Reduces operating speed	Yes
Reduces noise	Maybe
Improves safety	No
Restricts traffic access	No
Restricts and/or slows emergency response time	Yes
Requires maintenance due to vandalism	Yes
Level of violations	Moderate
Adversely impacts bicyclists	Minor
Adversely impacts transit	Minor

Fast Facts

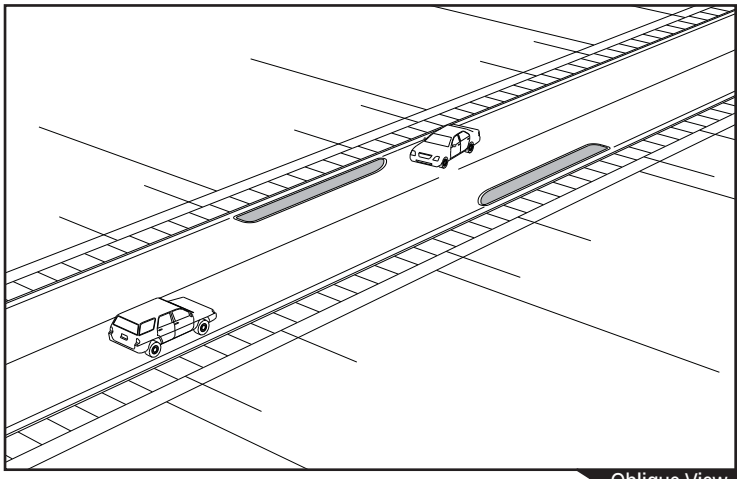
4 4.0 TWO-WAY CHOKER

PURPOSE:
The two-way choker is a barrier on either side of the street that narrows the local or collector street but allows traffic in both directions. The two-way choker is used primarily to reduce traffic speeds but may result in reduced traffic volumes and noise.

DESIGN CONSIDERATIONS:
The construction of a two-way choker may be funded by the City of Tempe based on the budgetary authority of the Public Works Manager. Landscaping or other improvements beyond basic construction may increase the cost of the project and may require additional stakeholder participation in funding.

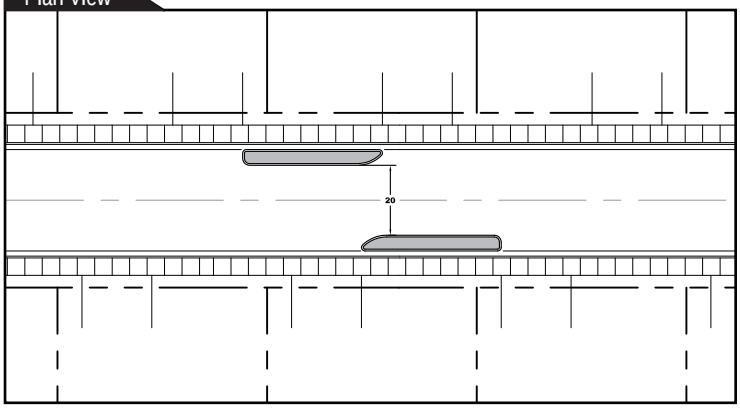
ADVANTAGES:
Compared to the one-way choker, the two-way choker does not as significantly restrict emergency vehicle access. The two-way choker allows traffic in both directions.

DISADVANTAGES:
A two-way choker often does not result in a marked reduction in traffic speed and noise and may require the loss of bicycle lanes. In many cases, the speed reduction of the two-way choker diminishes as drivers become accustomed to its presence. The two-way choker may also impede driveway access and may require regular maintenance due to vandalism.



Oblique View

Plan View



Can be used on local street	Yes
Can be used on collector street	Yes
Can be used on arterial street	No
Reduces traffic	No
Reduces operating speed	Minor
Reduces noise	No
Improves safety	No
Restricts traffic access	No
Restricts and/or slows emergency response time	No
Requires maintenance due to vandalism	Yes
Level of violations	Low
Adversely impacts bicyclists	Maybe
Adversely impacts transit	Minor

Fast Facts

4 4.0 BULB-OUT

PURPOSE:

A bulb-out is a barrier on both sides of the street intersection that narrows the street but allows traffic in both directions. The bulb-out is used primarily to reduce traffic speeds but may result in reduced traffic volumes and noise.

DESIGN CONSIDERATIONS:

The construction of a bulb-out may be funded by the City of Tempe based on the budgetary authority of the Public Works Manager. Landscaping or other improvements beyond basic construction may increase the cost of the project and may require additional stakeholder participation in funding.

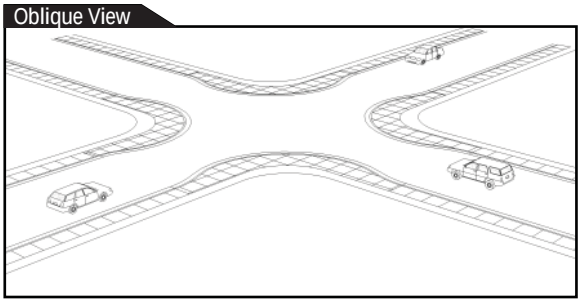
ADVANTAGES:

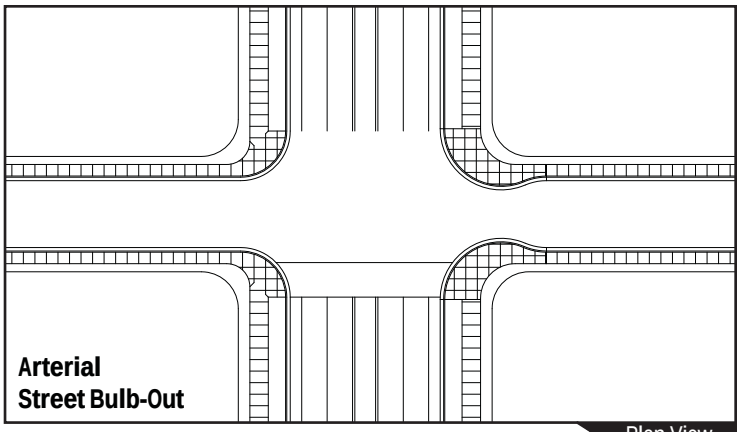
Bulb-outs do not significantly restrict emergency vehicle access except for large fire trucks making right turns. Bulb-outs may reduce the operating speed of traffic and may also reduce traffic volume and noise.

DISADVANTAGES:

Bulb-outs may not result in marked reduction in traffic speed and noise and may require the loss of bicycle lanes. In many cases, speed reduction of the bulb-outs diminishes as drivers become accustomed to their presence. Bulb-outs may also require regular maintenance due to vandalism.

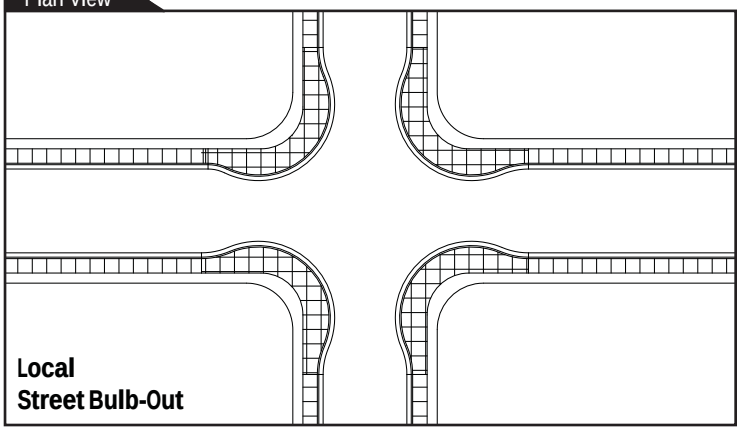
Oblique View





Plan View

Plan View



Can be used on local street	Yes
Can be used on collector street	Yes
Can be used on arterial street	Yes
Reduces traffic	No
Reduces operating speed	Minor
Reduces noise	No
Improves safety	No
Restricts traffic access	No
Restricts and/or slows emergency response time	Unclear
Requires maintenance due to vandalism	Yes
Level of violations	Low
Adversely impacts bicyclists	Maybe
Adversely impacts transit	Minor

Fast Facts

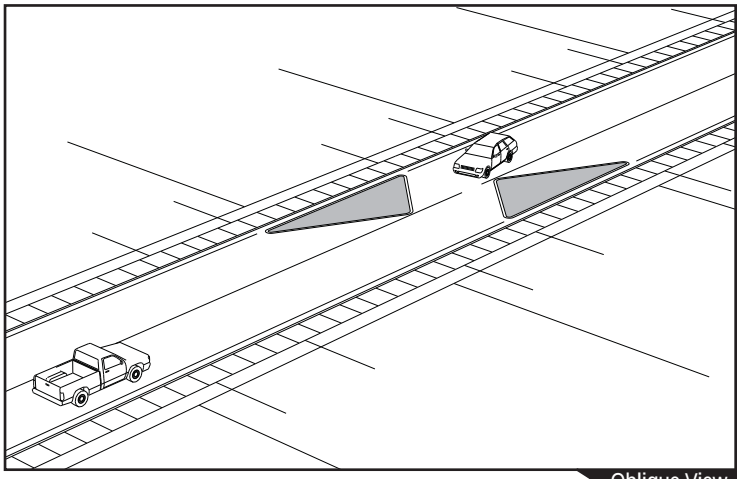
4 4.0 CHICANE

PURPOSE:
The chicane is a series of curb extensions on alternating sides of a local street which narrow the roadway to one lane and require the driver to steer from one side of the road to the other. The chicane serves to reduce traffic speed and may reduce traffic volume.

DESIGN CONSIDERATIONS:
The construction of a chicane may be funded by the City of Tempe based on the budgetary authority of the Public Works Manager. Landscaping or other improvements beyond basic construction may increase the cost of the project and may require additional neighborhood participation in funding.

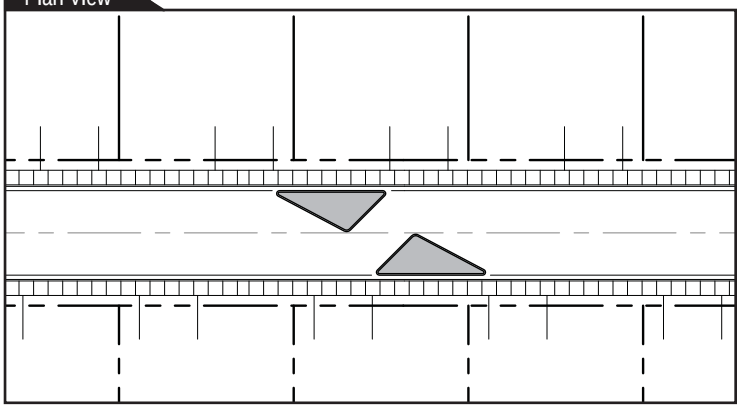
ADVANTAGES:
The chicane reduces traffic speed and noise. The chicane may also reduce traffic volume and would restrict "straight through" movement of traffic.

DISADVANTAGES:
With no other traffic present, drivers would be able to accelerate through the chicane which may result in increased travel speed and acceleration noise. The chicane looses its effectiveness when a low volume of traffic is present.



Oblique View

Plan View



Can be used on local street	Yes
Can be used on collector street	No
Can be used on arterial street	No
Reduces traffic	No
Reduces operating speed	Yes
Reduces noise	Yes
Improves safety	No
Restricts traffic access	No
Restricts and/or slows emergency response time	Yes
Requires maintenance due to vandalism	Yes
Level of violations	Moderate
Adversely impacts bicyclists	Minor
Adversely impacts transit	Minor

Fast Facts

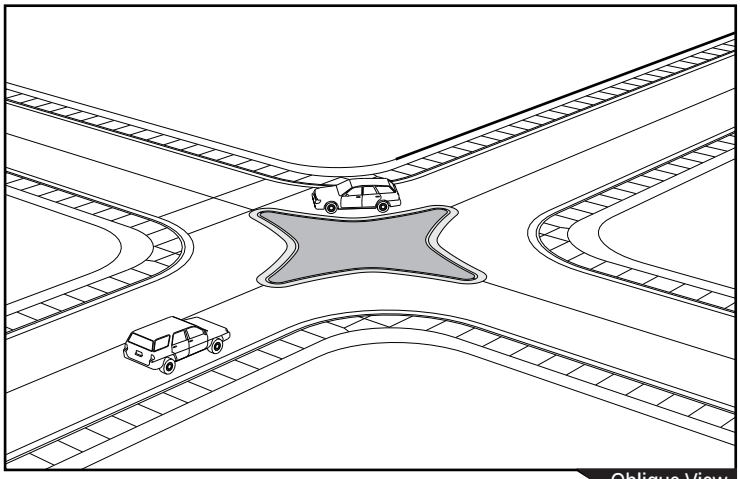
4 4.0 STAR DIVERTER

PURPOSE:
The star diverter is a raised barrier placed in the intersection that allows traffic to make only right turns and prevents traffic from proceeding through the intersection.

DESIGN CONSIDERATIONS:
The construction of a star diverter may be funded by the City of Tempe based on the budgetary authority of the Public Works Manager. Landscaping or other improvements beyond basic construction may increase the cost of the project and may require additional neighborhood participation in funding.

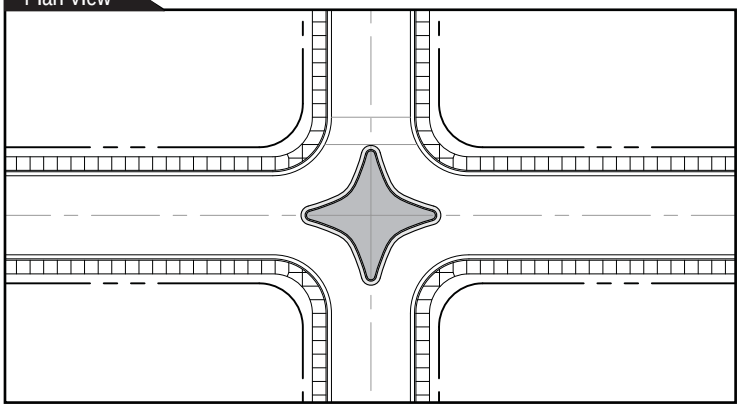
ADVANTAGES:
The star diverter can be installed within the existing intersection and right-of-way. The star diverter may reduce traffic volume and restrict "straight through" movement of traffic.

DISADVANTAGES:
The star diverter eliminates all left turns and through traffic and would change local traffic circulation patterns.



Oblique View

Plan View



Can be used on local street	Yes
Can be used on collector street	Yes
Can be used on arterial street	No
Reduces traffic	Yes
Reduces operating speed	Yes
Reduces noise	Yes
Improves safety	Unclear
Restricts traffic access	Yes
Restricts and/or slows emergency response time	Yes
Requires maintenance due to vandalism	Yes
Level of violations	Low
Adversely impacts bicyclists	Maybe
Adversely impacts transit	Yes

Fast Facts

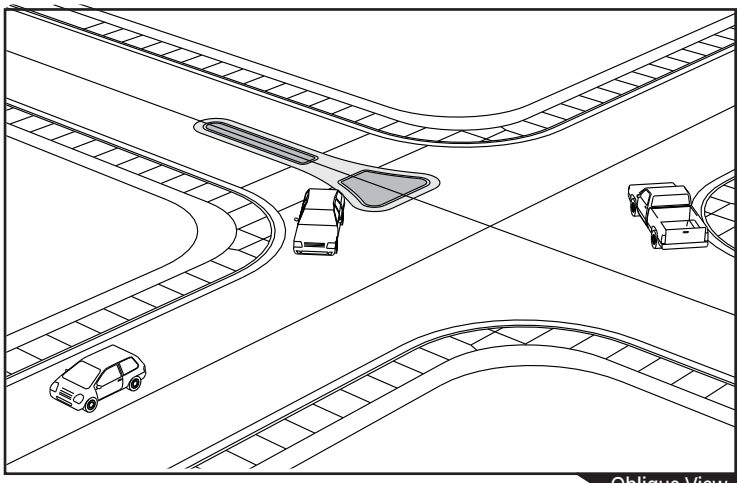
4 4.0 RIGHT TURN DIVERTER

PURPOSE:
The right-turn diverter is a raised barrier that prevents cut-through traffic and forces right turns by prohibiting traffic to proceed through the intersection.

DESIGN CONSIDERATIONS:
The construction of a right-turn diverter may be funded by the City of Tempe based on the budgetary authority of the Public Works Manager. Landscaping or other improvements beyond basic construction may increase the cost of the project and may require additional stakeholder participation in funding.

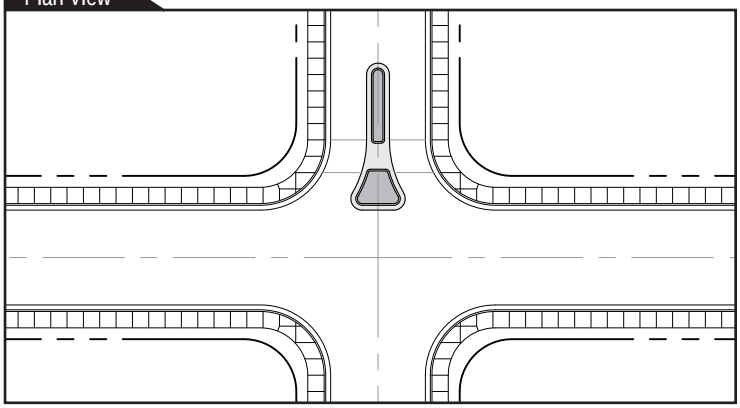
ADVANTAGES:
The right-turn diverter prevents cut-through traffic and reduces traffic volume on local and collector streets.

DISADVANTAGES:
The right-turn diverter is ineffective if implemented in places where traffic can use driveways to bypass the diverter. The right-turn diverter may also redirect traffic to low volume streets causing additional impact to residents. Before being implemented, traffic circulation patterns must be reviewed to ensure that restricting through traffic and permitting only right turns will not be detrimental to efficient circulation. This traffic calming tool must be supplemented by regulatory turn restrictions.



Oblique View

Plan View



Can be used on local street	Yes
Can be used on collector street	Yes
Can be used on arterial street	No
Reduces traffic	Yes
Reduces operating speed	Maybe
Reduces noise	Yes
Improves safety	Unclear
Restricts traffic access	Minor
Restricts and/or slows emergency response time	Minor
Requires maintenance due to vandalism	Low
Level of violations	Low
Adversely impacts bicyclists	No
Adversely impacts transit	Maybe

Fast Facts

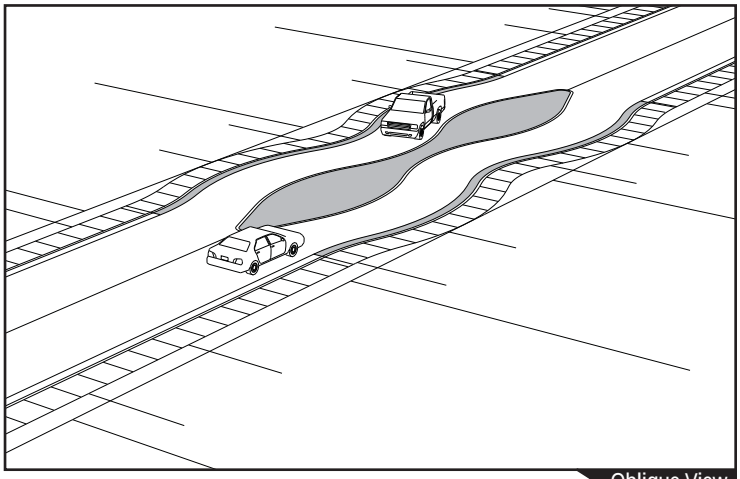
4 4.0 TRAFFIC FOOTBALLS

PURPOSE:
Traffic footballs are raised curvilinear medians in the roadway that require drivers to steer around the curves. When several are used consecutively, traffic footballs serve to slow traffic on local or collector streets by guiding traffic.

DESIGN CONSIDERATIONS:
The construction of traffic footballs may be funded by the City of Tempe based on the budgetary authority of the Public Works Manager. Landscaping or other improvements beyond basic construction may increase the cost of the project and may require additional stakeholder participation in funding.

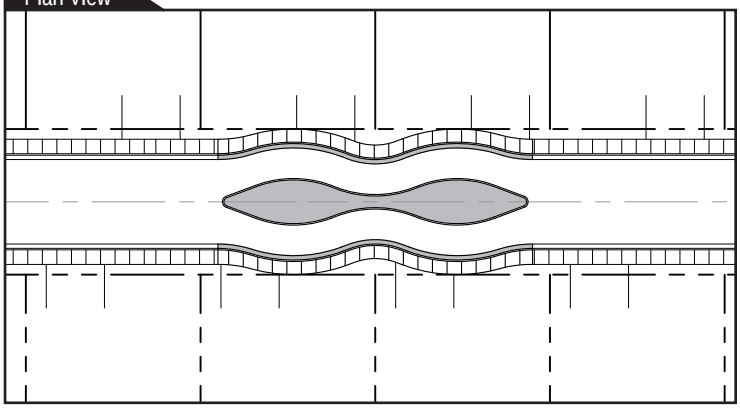
ADVANTAGES:
When implemented correctly, traffic footballs are effective means of slowing traffic.

DISADVANTAGES:
Creating a curvature in the roadway may have an adverse impact on bicycle lanes, on-street parking and emergency vehicle access.



Oblique View

Plan View



Can be used on local street	Yes
Can be used on collector street	Yes
Can be used on arterial street	No
Reduces traffic	No
Reduces operating speed	Yes
Reduces noise	Maybe
Improves safety	No
Restricts traffic access	No
Restricts and/or slows emergency response time	Maybe
Requires maintenance due to vandalism	Low
Level of violations	Low
Adversely impacts bicyclists	Maybe
Adversely impacts transit	Maybe

Fast Facts

4 4.0 INTERSECTION CUL-DE-SAC

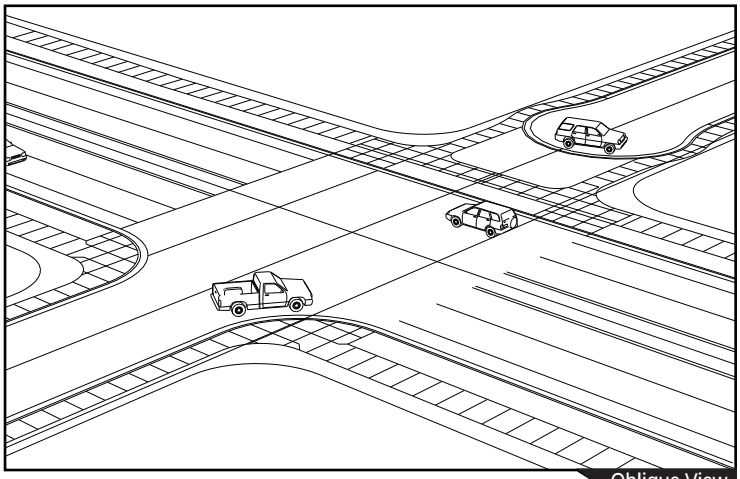
PURPOSE:
The intersection cul-de-sac prevents cut-through traffic by blockading a road prior to an intersection.

DESIGN CONSIDERATIONS:
The construction of an intersection cul-de-sac may be funded by the City of Tempe based on the budgetary authority of the Public Works Manager. Landscaping or other improvements beyond basic construction may increase the cost of the project and may require additional stakeholder participation in funding.

The implementation of an intersection cul-de-sac would also require approval from the fire and sanitation departments as it impacts access.

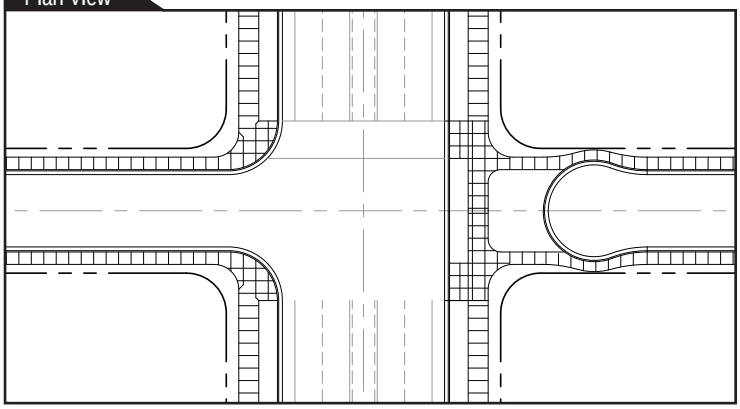
ADVANTAGES:
An intersection cul-de-sac will effectively block cut-through traffic and slow traffic speeds.

DISADVANTAGES:
Speed reduction occurs only on the street that is closed. Cul-de-sacs have a high cost of implementation and may impact utilities and access. Intersection cul-de-sacs can only be implemented on local streets. Transit, emergency service, and sanitation routes may also be impacted by prohibiting through traffic.



Oblique View

Plan View



Can be used on local street	Yes
Can be used on collector street	Yes
Can be used on arterial street	No
Reduces traffic	Yes
Reduces operating speed	Maybe
Reduces noise	Yes
Improves safety	Unclear
Restricts traffic access	Minor
Restricts and/or slows emergency response time	Minor
Requires maintenance due to vandalism	Low
Level of violations	Low
Adversely impacts bicyclists	No
Adversely impacts transit	Maybe

Fast Facts

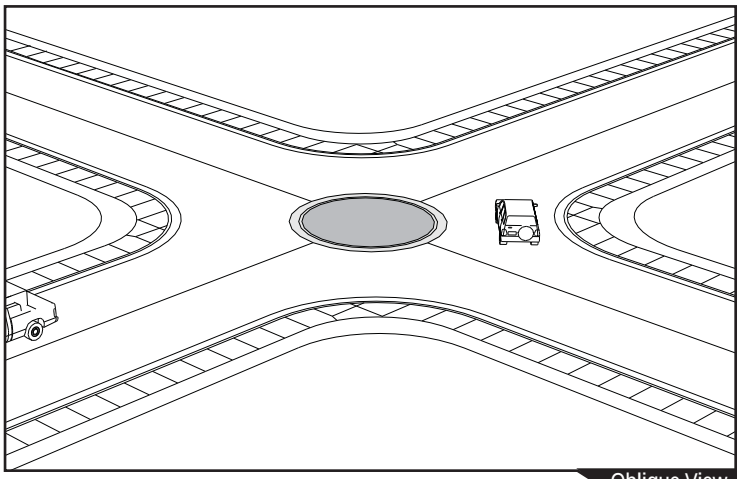
4 4.0 TRAFFIC CIRCLE

PURPOSE:
Traffic circles are raised islands, placed in intersections, around which traffic circulates. Traffic circles are implemented to slow traffic and discourage cut-through traffic.

DESIGN CONSIDERATIONS:
The construction of a traffic circle may be funded by the City of Tempe based on the budgetary authority of the Public Works Manager. Landscaping or other improvements beyond basic construction may increase the cost of the project and may require additional stakeholder participation in funding.

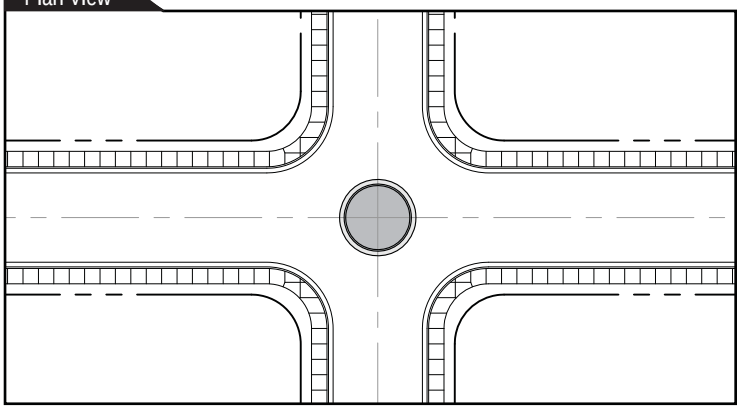
ADVANTAGES:
Traffic circles are effective at reducing speed and can be used on both local and collector streets. Traffic circles also can improve safety by moderating speeds and can have a positive aesthetic value.

DISADVANTAGES:
Traffic circles can be difficult for large vehicles or emergency vehicles to navigate. Traffic circles must be designed in such a manner as to not encroach on crosswalks.



Oblique View

Plan View



Can be used on local street	Yes
Can be used on collector street	Yes
Can be used on arterial street	No
Reduces traffic	Possibly
Reduces operating speed	Likely
Reduces noise	No
Improves safety	Unclear
Restricts traffic access	No
Restricts and/or slows emergency response time	Minor
Requires maintenance due to vandalism	Yes
Level of violations	Low
Adversely impacts bicyclists	Now
Adversely impacts transit	Yes

Fast Facts

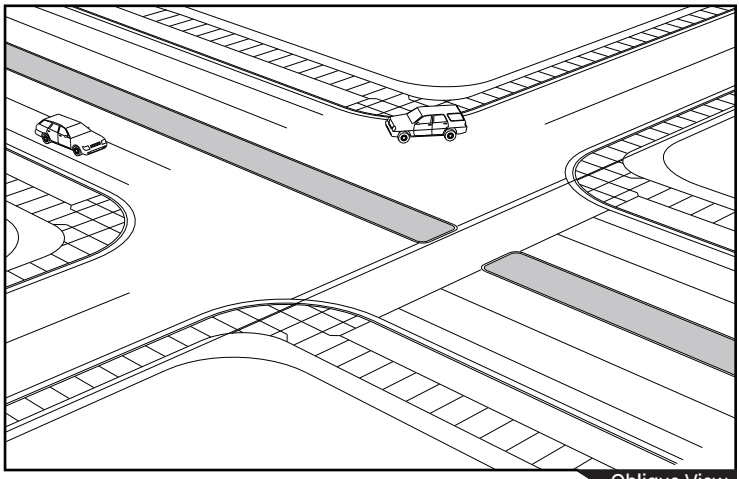
4 4.0 MEDIAN BARRIER

PURPOSE:
Median barriers are islands located along the centerline of a street and continue through an intersection to block traffic at a cross street.

DESIGN CONSIDERATIONS:
The construction of a median barrier may be funded by the City of Tempe based on the budgetary authority of the Public Works Manager. Landscaping or other improvements beyond basic construction may increase the cost of the project and may require additional stakeholder participation in funding.

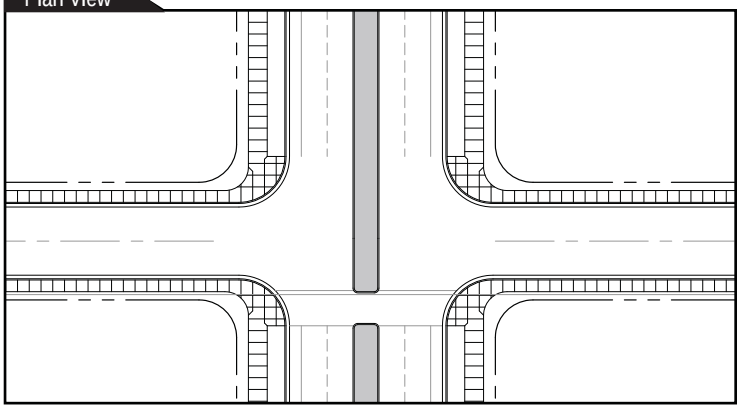
ADVANTAGES:
Median barriers can improve safety at dangerous or high volume intersections and can reduce traffic volumes on major streets.

DISADVANTAGES:
Median barriers require wider streets and also limit turning to and from side streets for local residents and emergency vehicles.



Oblique View

Plan View



Can be used on local street	Yes
Can be used on collector street	Yes
Can be used on arterial street	No
Reduces traffic	Yes
Reduces operating speed	No
Reduces noise	Yes
Improves safety	Yes
Restricts traffic access	Minor
Restricts and/or slows emergency response time	Minor
Requires maintenance due to vandalism	Low
Level of violations	Low
Adversely impacts bicyclists	No
Adversely impacts transit	Maybe

Fast Facts

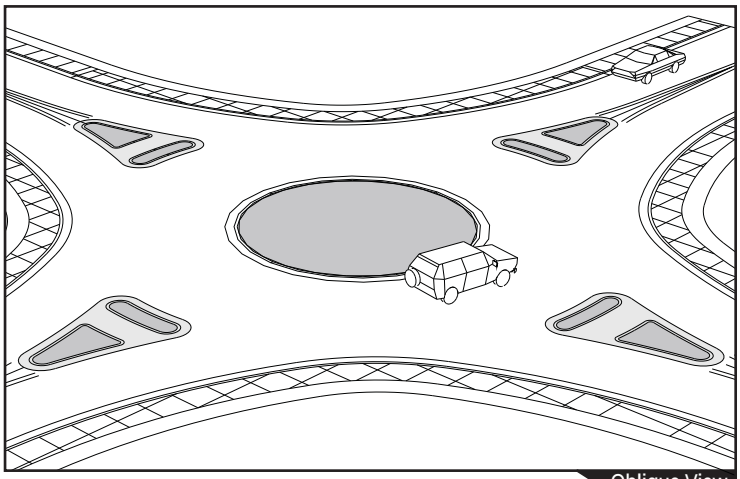
4 4.0 ROUNDABOUTS

PURPOSE:
Roundabouts require traffic to circulate counterclockwise around a center island. Roundabouts typically slow traffic to 15 mph but usually do not provide a reduction in traffic volume.

DESIGN CONSIDERATIONS:
The construction of a roundabout may be funded by the City of Tempe based on the budgetary authority of the Public Works Manager. Landscaping or other improvements beyond basic construction may increase the cost of the project and may require additional stakeholder participation in funding.

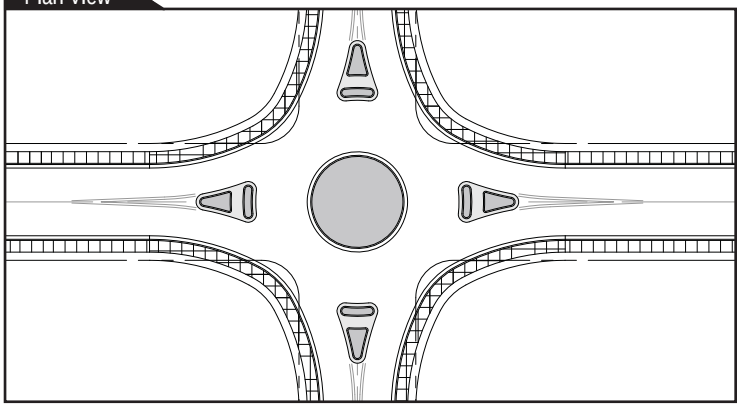
ADVANTAGES:
Roundabouts can be effective in moderating traffic speeds on arterial streets. Roundabouts can be aesthetically pleasing when well landscaped. Roundabouts can be safer and less expensive than traffic signals.

DISADVANTAGES:
The construction of roundabouts may require additional right-of-way, and may impact adjacent properties and utilities. Roundabouts may not be able to accommodate large vehicles.



Oblique View

Plan View



Can be used on local street	Yes
Can be used on collector street	Yes
Can be used on arterial street	Maybe
Reduces traffic	Maybe
Reduces operating speed	Likely
Reduces noise	Maybe
Improves safety	Unclear
Restricts traffic access	No
Restricts and/or slows emergency response time	Yes
Requires maintenance due to vandalism	Yes
Level of violations	Low
Adversely impacts bicyclists	No
Adversely impacts transit	No

Fast Facts

4 4.0 SPEED HUMP

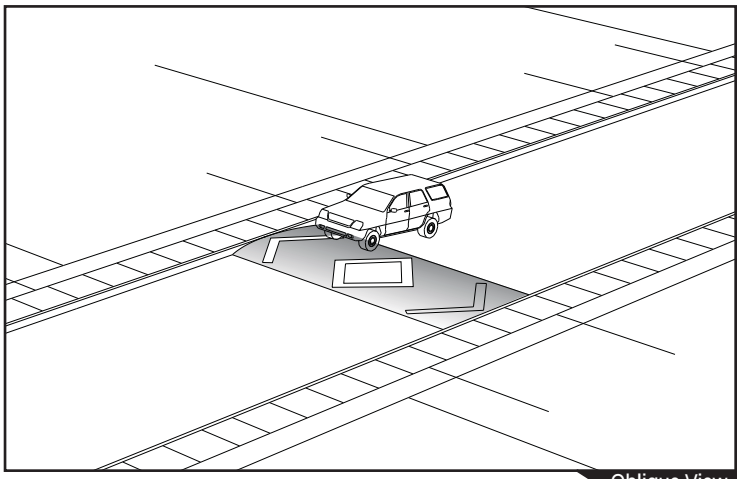
PURPOSE:
Speed humps are rounded raised areas of pavement that are parabolic in shape and are placed across roadways primarily to reduce the speed of traffic on local and collector streets.

DESIGN CONSIDERATIONS:
The construction of speed humps may be funded by the City of Tempe based on the budgetary authority of the Public Works Manager. Landscaping or other improvements beyond basic construction may increase the cost of the project and may require additional stakeholder participation in funding.

Speed humps are often installed in a series and are spaced between 300 and 600-feet apart.

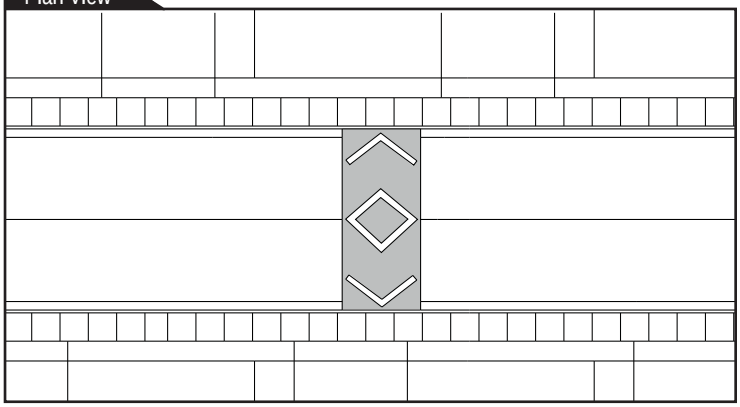
ADVANTAGES:
Speed humps slow traffic more gradually than speed bumps and can be effective in slowing traffic and reducing traffic volume.

DISADVANTAGES:
Drivers can slow before the speed hump and accelerate between speed humps producing more acceleration noise. Speed humps can impact emergency routes or transit routes. Speed humps typically slow emergency vehicle response time by approximately 8 to 10 seconds per speed hump. Drivers wanting to avoid streets with speed humps often divert to streets less capable of dealing with higher volumes of cars.



Oblique View

Plan View



Can be used on local street	Yes
Can be used on collector street	Yes
Can be used on arterial street	No
Reduces traffic	No
Reduces operating speed	Minor
Reduces noise	No
Improves safety	No
Restricts traffic access	No
Restricts and/or slows emergency response time	Yes
Requires maintenance due to vandalism	No
Level of violations	No
Adversely impacts bicyclists	Minor
Adversely impacts transit	Possible

Fast Facts

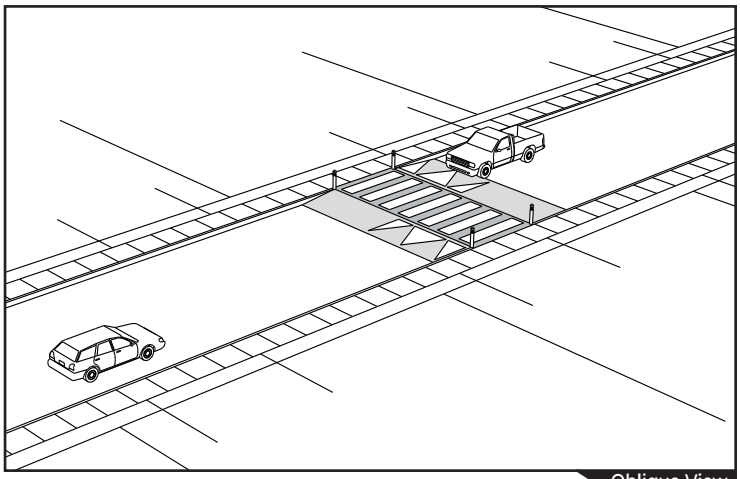
4 4.0 SPEED TABLE

PURPOSE:
Speed tables are raised and "flat-topped" and are generally wide enough to accommodate the wheelbase of a car. The purpose of the speed table is to reduce the speed of traffic on local or collector streets. Speed tables may be installed mid-block or at an intersection to facilitate pedestrian crossing.

DESIGN CONSIDERATIONS:
The construction of speed tables may be funded by the City of Tempe based on the budgetary authority of the Public Works Manager. Landscaping or other improvements beyond basic construction may increase the cost of the project and may require additional stakeholder participation in funding.

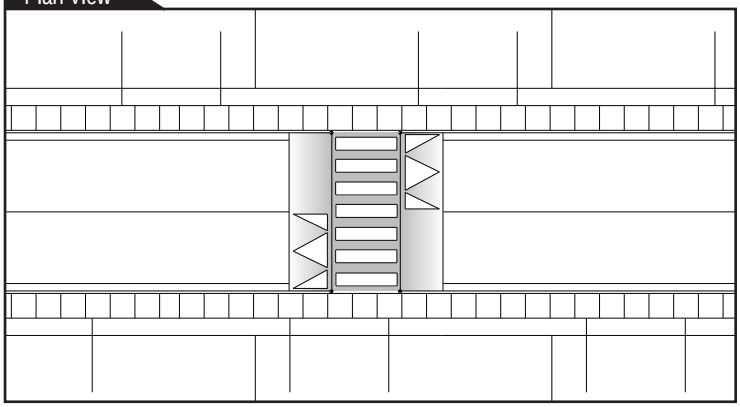
ADVANTAGES:
Speed tables function similar to speed humps, however speed tables tend to have less impact on cars and emergency vehicles and can be marked as a raised crosswalk and can provide a pedestrian crossing.

DISADVANTAGES:
Speed tables tend to cost more to construct than speed humps and may be less effective at reducing traffic speed. Speed tables can impact emergency or transit routes. Speed tables also typically slow emergency vehicle response time. The construction of speed tables may also produce drainage problems.



Oblique View

Plan View



Can be used on local street	Yes
Can be used on collector street	Yes
Can be used on arterial street	No
Reduces traffic	No
Reduces operating speed	Minor
Reduces noise	No
Improves safety	No
Restricts traffic access	No
Restricts and/or slows emergency response time	Minor
Requires maintenance due to vandalism	No
Level of violations	No
Adversely impacts bicyclists	Minor
Adversely impacts transit	Possibly

Fast Facts

4 4.0 DEPARTURE CHOKER

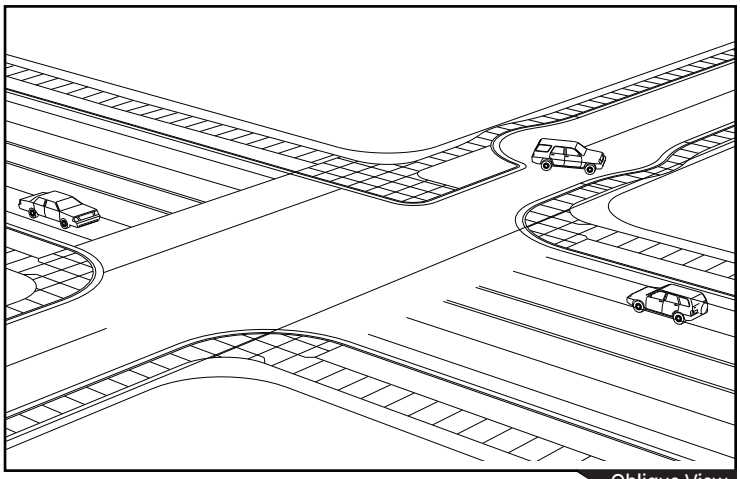
PURPOSE:
A departure choker is a curb extension that narrows a local or collector street to allow travel in only one direction. The departure choker serves to reduce the speed of traffic and eliminate flow in one direction.

DESIGN CONSIDERATIONS:
The construction of a departure choker may be funded by the City of Tempe based on the budgetary authority of the Public Works Manager. Landscaping or other improvements beyond basic construction may increase the cost of the project and may require additional stakeholder participation in funding.

The implementation of a departure choker would require approval from the fire and sanitation departments as it may impact access.

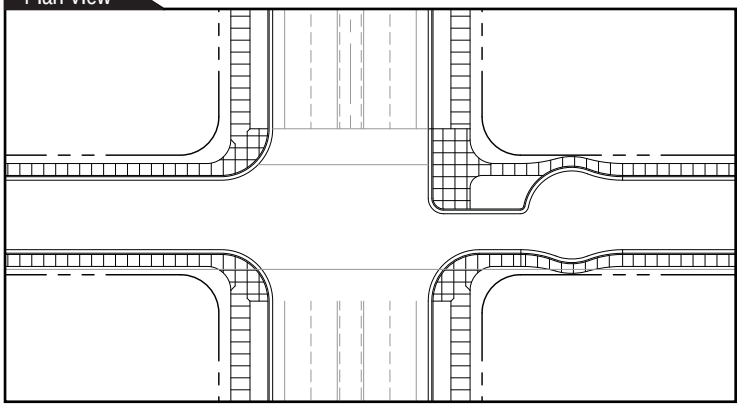
ADVANTAGES:
Departure chokers can reduce both traffic speed and volume and if designed well, can have positive aesthetic value. The departure choker is also negotiable for emergency vehicles.

DISADVANTAGES:
Departure chokers loose effectiveness in the absence of other traffic. Bicycle lanes may be removed and bicyclists would have to merge with vehicular traffic. Departure chokers may require the elimination of some on-street parking.



Oblique View

Plan View



Can be used on local street	Yes
Can be used on collector street	Yes
Can be used on arterial street	No
Reduces traffic	Yes
Reduces operating speed	Minor
Reduces noise	Yes
Improves safety	Yes
Restricts traffic access	Yes
Restricts and/or slows emergency response time	No
Requires maintenance due to vandalism	No
Level of violations	Moderate
Adversely impacts bicyclists	Minor
Adversely impacts transit	Possibly

Fast Facts

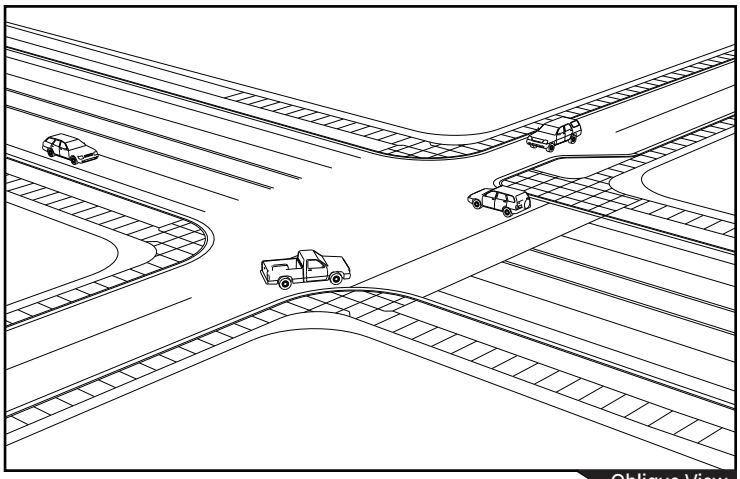
4 4.0 ENTRY CHOKER

PURPOSE:
An entry choker is similar to a departure choker except it restricts traffic from entering a street.

DESIGN CONSIDERATIONS:
The construction of an entry choker may be funded by the City of Tempe based on the budgetary authority of the Public Works Manager. Landscaping or other improvements beyond basic construction may increase the cost of the project and may require additional stakeholder participation in funding.

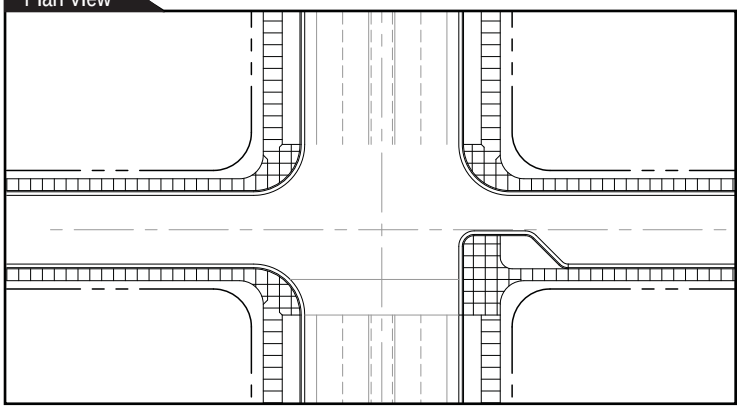
ADVANTAGES:
Entry chokers are easily negotiable by large vehicles and can reduce both traffic speed and volume. If designed well, entry chokers can have positive aesthetic value.

DISADVANTAGES:
Entry chokers also loose effectiveness in the absence of other traffic. Bicycle lanes may be removed and bicyclists would have to merge with vehicular traffic. Entry chokers may require the elimination of some on-street parking.



Oblique View

Plan View



Can be used on local street	Yes
Can be used on collector street	Yes
Can be used on arterial street	No
Reduces traffic	Yes
Reduces operating speed	Minor
Reduces noise	Yes
Improves safety	Yes
Restricts traffic access	Yes
Restricts and/or slows emergency response time	Yes
Requires maintenance due to vandalism	No
Level of violations	Moderate
Adversely impacts bicyclists	Minnor
Adversely impacts transit	Possibly

Fast Facts

4 4.0 DIVERTER

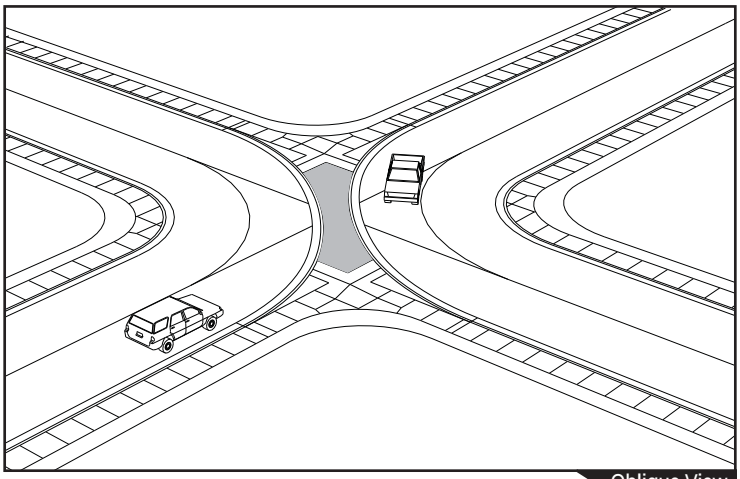
PURPOSE:
A diverter is a traffic calming tool constructed diagonally across an intersection to redirect traffic and maintain one movement.

DESIGN CONSIDERATIONS:
The construction of a diverter may be funded by the City of Tempe based on the budgetary authority of the Public Works Manager. Landscaping or other improvements beyond basic construction may increase the cost of the project and may require additional stakeholder participation in funding.

The implementation of a diverter would require approval from the fire and sanitation departments as it may impact access.

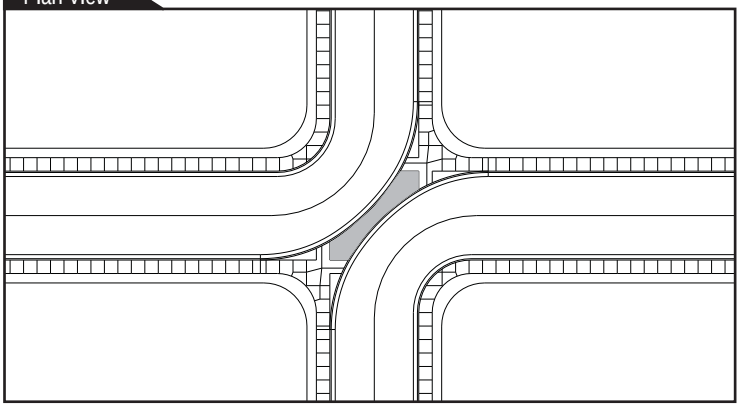
ADVANTAGES:
Diverters can improve safety by restricting turning movements and can reduce traffic volume on a cut-through route on a major street.

DISADVANTAGES:
Diverters typically limit turning and access. Implementation of a diverter may require a wider street to accommodate traffic.



Oblique View

Plan View



Can be used on local street	Yes
Can be used on collector street	Maybe
Can be used on arterial street	No
Reduces traffic	Yes
Reduces operating speed	Likely
Reduces noise	Yes
Improves safety	Yes
Restricts traffic access	Yes
Restricts and/or slows emergency response time	Yes
Requires maintenance due to vandalism	Yes
Level of violations	Low
Adversely impacts bicyclists	Some
Adversely impacts transit	Yes

Fast Facts

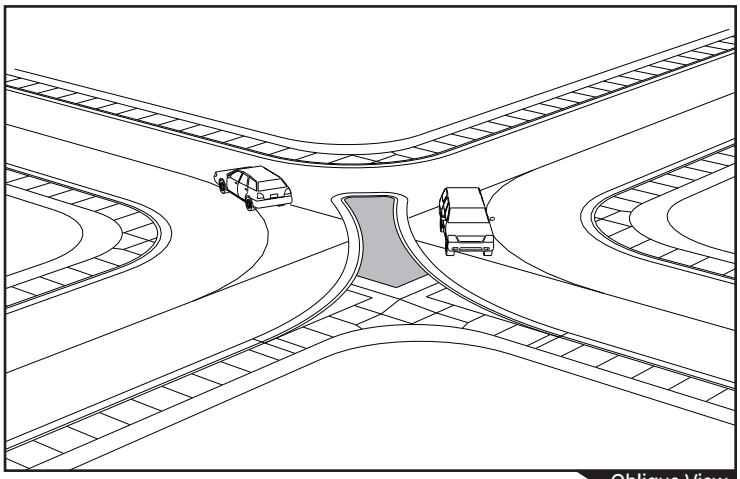
4 4.0 SEMI-DIVERTER (TYPE A)

PURPOSE:
A semi-diverter is similar to a diverter but does not completely bisect the intersection diagonally.

DESIGN CONSIDERATIONS:
The construction of a semi-diverter (type a) may be funded by the City of Tempe based on the budgetary authority of the Public Works Manager. Landscaping or other improvements beyond basic construction may increase the cost of the project and may require additional stakeholder participation in funding.

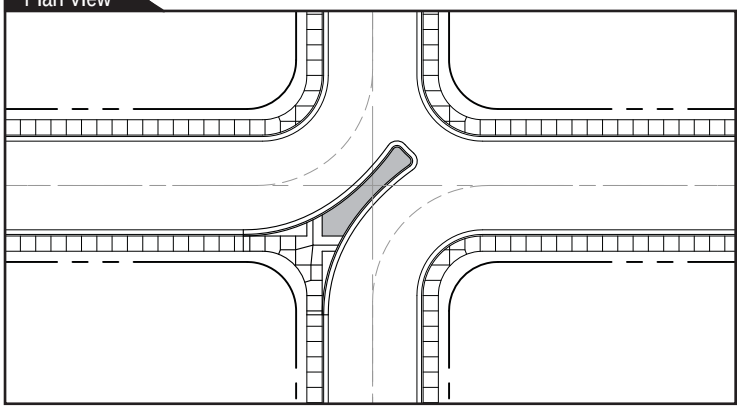
ADVANTAGES:
Semi-diverters can improve safety by restricting turning movements and can reduce traffic volume on a cut-through route on a major street.

DISADVANTAGES:
Semi-diverters typically limit turning and access. Implementation of a diverter may require a wider street to accommodate traffic.



Oblique View

Plan View



Can be used on local street	Yes
Can be used on collector street	Maybe
Can be used on arterial street	No
Reduces traffic	Yes
Reduces operating speed	Likely
Reduces noise	Yes
Improves safety	Yes
Restricts traffic access	Yes
Restricts and/or slows emergency response time	Yes
Requires maintenance due to vandalism	Yes
Level of violations	Low
Adversely impacts bicyclists	Some
Adversely impacts transit	Yes

Fast Facts

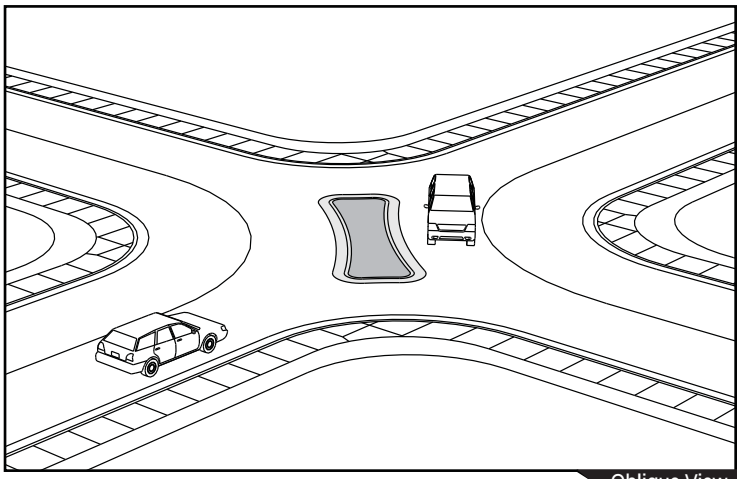
4 4.0 SEMI-DIVERTER (TYPE B)

PURPOSE:
A semi-diverter is similar to a diverter but does not completely bisect the intersection diagonally.

DESIGN CONSIDERATIONS:
The construction of a semi-diverter (type b) may be funded by the City of Tempe based on the budgetary authority of the Public Works Manager. Landscaping or other improvements beyond basic construction may increase the cost of the project and may require additional stakeholder participation in funding.

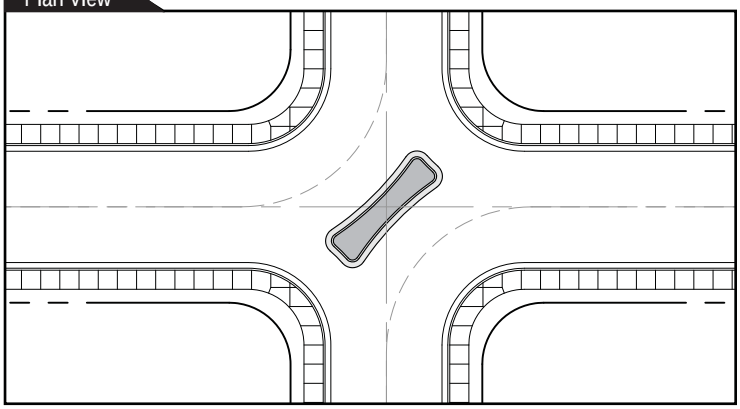
ADVANTAGES:
Semi-diverters can improve safety by restricting turning movements and can reduce traffic volume on a cut-through route on a major street.

DISADVANTAGES:
Semi-diverters typically limit turning and access. Implementation of a diverter may require a wider street to accommodate traffic.



Oblique View

Plan View



Can be used on local street	Yes
Can be used on collector street	Maybe
Can be used on arterial street	No
Reduces traffic	Yes
Reduces operating speed	Likely
Reduces noise	Yes
Improves safety	Yes
Restricts traffic access	Yes
Restricts and/or slows emergency response time	Yes
Requires maintenance due to vandalism	Yes
Level of violations	Low
Adversely impacts bicyclists	No
Adversely impacts transit	Yes

Fast Facts

4 TABLE 2
COST AND CONSTRUCTION OF STEP TOOLS

Traffic Device/ Type	Cost	Construction Details
Median	$7,500	Construction would utilize doweled in place concrete medians. The median should be 6 inches in height with a face of curb batter of 10 degrees. Rebar should be cut to length and anchored in the existing asphalt. Medians should not be less than 4 feet wide nor less than 25 feet long. The use of MAG Standard Detail 220 Type A Curb and Gutter or MAG Standard Detail Type A Single Curb is required. Depending on the type and location of the median, utilities may be impacted and require some level of relocation.
One-Way Choker	$5,000	Construction would utilize doweled in place concrete chokers. The chokers should be 6 inches in height with a face of curb batter of 10 degrees. Rebar should be cut to length and anchored in the existing asphalt. The use of MAG Standard Detail 220 Type A Curb and Gutter or MAG Standard Detail Type A Single Curb is required. Problems related to drainage and irrigation may also result from the implementation of a one-way choker.
Two-Way Choker	$3,500	Construction would utilize doweled in place concrete barriers. The two-way choker should be 6 inches in height with a face of curb batter of 10 degrees. Rebar should be cut to length and anchored in the existing asphalt. The use of MAG Standard Detail 220 Type A Curb and Gutter or MAG Standard Detail Type A Single Curb is required.
Bulb-Out	$4,000 (per bulb-out Pair)	Typically, two bulb-outs are constructed at the intersection of an arterial street, while four bulb-outs are constructed at the intersection of local or collector streets. Construction would utilize doweled in place concrete barriers. The bulb-out should be 6 inches in height with a face of curb batter of 10 degrees. Rebar should be cut to length and anchored in the existing asphalt. The use of MAG Standard Detail 220 Type A Curb and Gutter or MAG Standard Detail Type A Single Curb is required. Problems related to drainage and irrigation may result from the implementation of bulb-outs.
Chicane	$5,000	Construction would utilize doweled in place concrete barriers. The chicane should be 6 inches in height with a face of curb batter of 10 degrees. Rebar should be cut to length and anchored in the existing asphalt. The desired effect of a chicane may be achieved by alternating on-street parking. The use of MAG Standard Detail 220 Type A Curb and Gutter or MAG Standard Detail Type A Single Curb is required.
Star Diverter	$6,000	Construction would utilize doweled in place concrete barriers. The star diverter should be 6 inches in height with a face of curb batter of 10 degrees. Rebar should be cut to length and anchored in the existing asphalt. The use of MAG Standard Detail 220 Type A Curb and Gutter or MAG Standard Detail Type A Single Curb is required.
Right-Turn diverter	$2,500	Construction would utilize doweled in place concrete barriers. The right-turn diverter should be 6 inches in height with a face of curb batter of 10 degrees. Rebar should be cut to length and anchored in the existing asphalt. The use of MAG Standard Detail 220 Type A Curb and Gutter or MAG Standard Detail Type A Single Curb is required.
Traffic Footballs	$17,500	Construction would utilize doweled in place concrete barriers. The traffic footballs should be 6 inches in height with a face of curb batter of 10 degrees. Rebar should be cut to length and anchored in the existing asphalt. The construction of traffic footballs may require the relocation of curb, gutter, and sidewalk. The use of MAG Standard Detail 220 Type A Curb and Gutter or MAG Standard Detail Type A Single Curb is required.
Intersection Cul-de-sac	$11,500	Construction would utilize doweled in place concrete barriers. The intersection cul-de-sac should be 6 inches in height with a face of curb batter of 10 degrees. Rebar should be cut to length and anchored in the existing asphalt. An intersection cul-de-sac may require the replacement or removal of curb, gutter, and sidewalk. The construction of cul-de-sacs may also impact utilities and access. The cul-de-sac may have limited applicability if it prevents accessibility by fire and sanitation vehicles. This tool would require additional approval from effected City departments. The use of MAG Standard Detail 220 Type A Curb and Gutter or MAG Standard Detail Type A Single Curb is required.

Note: Costs were derived in 2006. The cost of landscaping, additional betterments, and maintenance are not included in the cost estimates provided.

4 TABLE 2
COST AND CONSTRUCTION STEP TOOLS

Traffic Device/ Type	Cost	Construction Details
Traffic Circle	$3,500	Construction would utilize doweled in place concrete barriers. The traffic circle should be 6 inches in height with a face of curb batter of 10 degrees. Rebar should be cut to length and anchored in the existing asphalt. The use of MAG Standard Detail 220 Type A Curb and Gutter or MAG Standard Detail Type A Single Curb is required.
Median Barrier	$21,500	Construction would utilize doweled in place concrete barriers. The median barrier should be 6 inches in height with a face of curb batter of 10 degrees. Rebar should be cut to length and anchored in the existing asphalt. The use of MAG Standard Detail 220 Type A Curb and Gutter or MAG Standard Detail Type A Single Curb is required.
Roundabouts	$38,500	Construction would utilize doweled in place concrete barriers. Roundabouts should be 6 inches in height with a face of curb batter of 10 degrees. Rebar should be cut to length and anchored in the existing asphalt. The construction of a roundabout may require additional right-of-way and may impact adjacent properties. The construction of a roundabout may also require the replacement or relocation of utilities. The use of MAG Standard Detail 220 Type A Curb and Gutter or MAG Standard Detail Type A Single Curb is required.
Speed Hump	$2,000	Speed humps are typically 12 to 14 feet in length and parabolic in shape. Crossing speeds determine the height of the speed hump which may range from 3 to 4-inches at the crest of the hump. Speed humps will be considered on local or collector streets where the posted speed does not exceed 30 mph and traffic volumes exceed 400 vehicles per day. Speed humps may be considered when speeds on these streets exceed the posted speed by 6 mph or more and by at least 85% of those vehicles using the street. Speed humps may impact transit, emergency services, and sanitation routes and may also require mitigation for drainage.
Speed Table	$2,000	Speed tables are generally 22-feet in the direction of travel and include 6-foot ramps on each side and at least a 10-foot flat top. Speed tables require an approximate 5% grade to accommodate a 3 to 4-inch height. Speed tables may be installed on a local or collector street at the mid-block or at the intersection to facilitate pedestrian crossing. Speed tables may impact transit, emergency services, and sanitation routes and may also require mitigation for drainage.
Departure Choker	$12,000	Construction would utilize doweled in place concrete barriers. The departure choker should be 6 inches in height with a face of curb batter of 10 degrees. Rebar should be cut to length and anchored in the existing asphalt. The departure choker may have limited applicability if it prevents accessibility by fire and sanitation vehicles. This tool would require additional approval from effected City departments. The use of MAG Standard Detail 220 Type A Curb and Gutter or MAG Standard Detail Type A Single Curb is required.
Entry Choker	$7,500	Construction would utilize doweled in place concrete barriers. The entry choker should be 6 inches in height with a face of curb batter of 10 degrees. Rebar should be cut to length and anchored in the existing asphalt. The use of MAG Standard Detail 220 Type A Curb and Gutter or MAG Standard Detail Type A Single Curb is required.
Diverter	$10,000	Construction would utilize doweled in place concrete barriers. The diverter should be 6 inches in height with a face of curb batter of 10 degrees. Rebar should be cut to length and anchored in the existing asphalt. The diverter may have limited applicability if it prevents accessibility by fire and sanitation vehicles. This tool would require additional approval from effected City departments. The use of MAG Standard Detail 220 Type A Curb and Gutter or MAG Standard Detail Type A Single Curb is required.
Semi-Diverter (Type A)	$6,000	Construction would utilize doweled in place concrete barriers. The semi-diverter (type a) should be 6 inches in height with a face of curb batter of 10 degrees. Rebar should be cut to length and anchored in the existing asphalt. The use of MAG Standard Detail 220 Type A Curb and Gutter or MAG Standard Detail Type A Single Curb is required.
Semi-Diverter (Type B)	$2,500	Construction would utilize doweled in place concrete barriers. The semi-diverter (type b) should be 6 inches in height with a face of curb batter of 10 degrees. Rebar should be cut to length and anchored in the existing asphalt. The use of MAG Standard Detail 220 Type A Curb and Gutter or MAG Standard Detail Type A Single Curb is required

Note: Costs were derived in 2006. The cost of landscaping, additional betterments, and maintenance are not included in the cost estimates provided.

5 APPLICATION FORMS

STAKEHOLDER ACTION REQUEST FORM

Contact Name:	Date:
Name:	E-mail:
Day Phone:	
Address:	
Location of Concern:	
Description of Concern:	

For Official Use Only
Project #:
Date Received:
Date Field Inspected (if needed):
Field Inspection Results (if needed):
Date Response to Stakeholder Contact:
Resolution of Concern:
Date Completed:
Traffic Engineer Signature:
Date:

5 APPLICATION FORMS

STAKEHOLDER SUPPORT FORM

Instructions: *Stakeholders within your neighborhood have identified traffic problems that they would like to see addressed. These concerns are briefly described below. If you support the preparation of a plan to address these problems, you should sign this petition. Only one person per household (per street address) should sign. If you want to be a member of a Neighborhood Action Team that will help prepare the Action Plan, check the box next to your signature. If a plan is developed to solve traffic problems in your neighborhood, you may be asked to help pay for the solutions.*

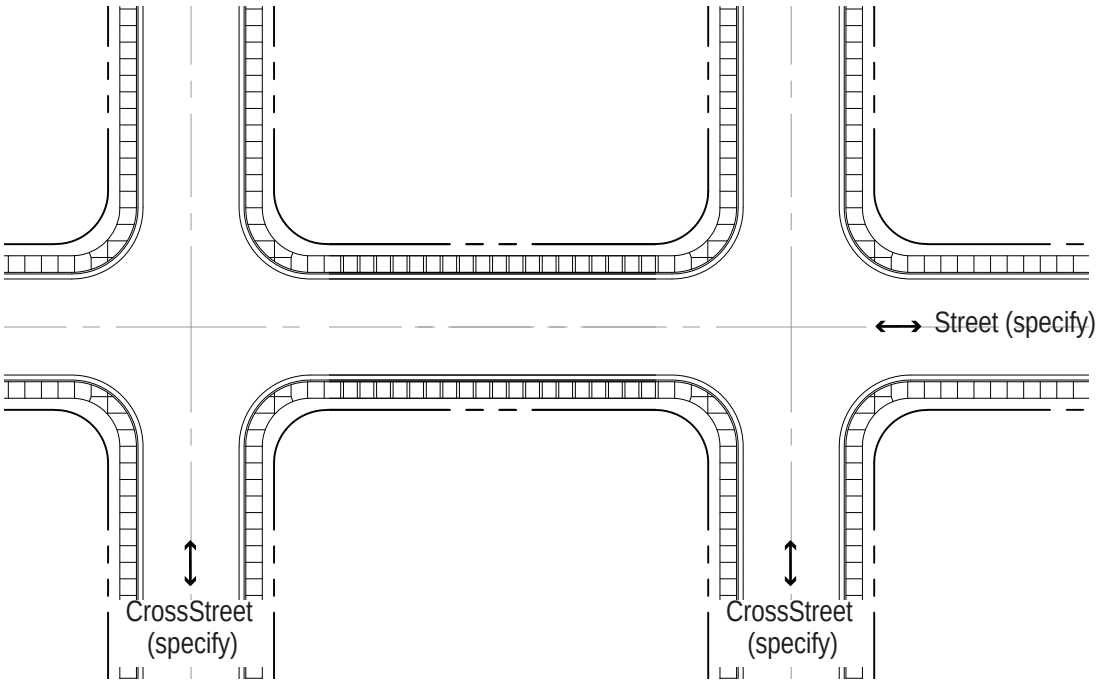
Summary of Concerns: (insert identified traffic-related issue/problem)

#	Print Name	Resident Address	Signature	Yes. I am interested in being on a team to prepare a plan of action (provide phone number)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

APPLICATION FORMS

STAKEHOLDER REQUEST FORM

Name:
Address:
Description of Location (attach map as necessary):



Applicant's Statement: *I have reviewed the attached materials and understand my responsibilities for having a traffic calming device installed at the requested location.*

Signature:_____ Date: _____

	Outline of Installation Procedures
	Sample Petition Form
	Map Showing Required Petition Area
	Copy of Adopted NTMP Policy
	Other:

For Official Use:
Date received:
Department:
Action Taken:

MEMORANDUM

TO: Tempe Transportation Commission

FROM: Shelly Seyler, Deputy Engineering & Transportation Director, 350-8854

DATE: September 8, 2020

SUBJECT: Future Agenda Items

ITEM #: 8

PURPOSE:
The Chair will request future agenda items from the Commission members.

RECOMMENDATION OR DIRECTION REQUESTED:
This item is for information only.

CITY COUNCIL STRATEGIC PRIORITY: N/a

BACKGROUND INFORMATION:

- October 13
  - BRT Study
  - Ash and University Intersection
  - Cool Pavement Treatment
- November 10
  - Annual Report
  - Scottsdale Road Bike Lanes
  - Entitled Development Projects
  - Transportation Demand Management Association
  - Mobility Hubs
- December 1
  - Annual Report
  - Transit Service Reduction Plan
  - 20-Minute City Market Research Results
  - 2020 Transit Satisfaction Survey Results
- January 12
  - Transit Service Reduction Plan
  - Country Club Way Streetscape
  - Commission Business
  - Vision Zero Update
- February 9
  - Personal Delivery Devices
  - Outreach Plan for I-10 Corridor Construction
  - Preservation of public bike/ped facilities and private development
- March 9
  - North/South Rail Spur MUP
- April 13
- May 11
  - Commuter Rail Study/ MAG Commuter Rail Plan
  - AZ State Rail Plan/AZDOT Phoenix-Tucson Corridor Plan

FISCAL IMPACT or IMPACT TO CURRENT RESOURCES: N/a

ATTACHMENTS: None