City of Peoria

Multi-Modal Transportation Plan

Local Service Options

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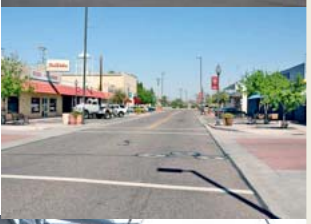
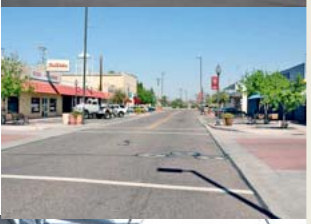
In Association with:
Jacobs
Sherman Group, Inc.
Telvent

Local Service Options



- ***Three types of options examined:***
  1. Local bus circulator services–similar to those that have been implemented in a number of other Valley communities.
  2. Local flex services that would be a hybrid of fixed-route and dial-a-ride service.
  3. An expansion of Valley Metro's grid network into Peoria.
- ***Combinations of the above are also possible.***

Service & Connections

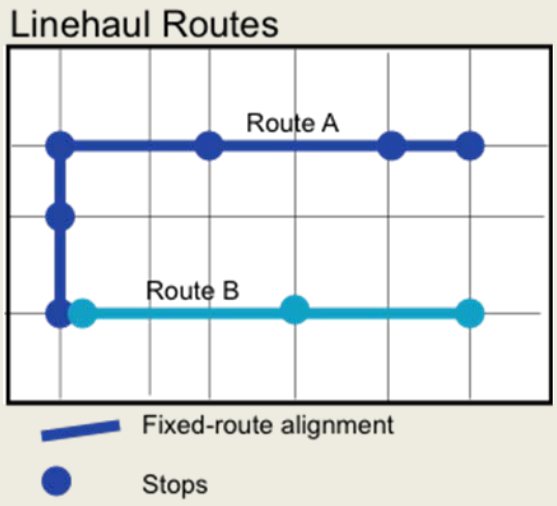


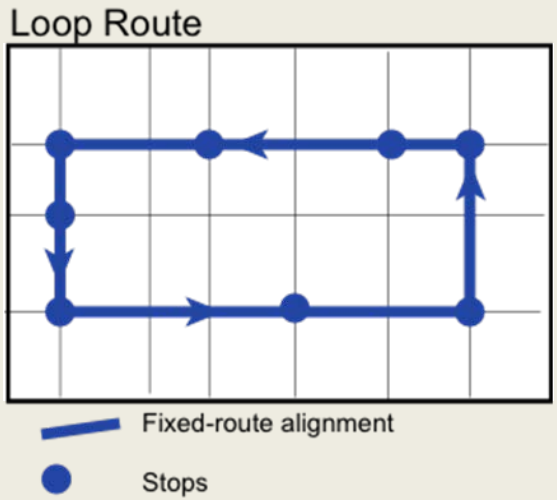
- ***All of the options would provide:***
  - Local service within Peoria.
  - Connections to other local and regional services.
- ***Connections would be provided at:***
  - **Proposed Old Town Peoria Transit Center.** Services in the southern half of Peoria south of Thunderbird Road would be focused around this transit center.
  - **Arrowhead Regional Transit Center**, which is a major Valley Metro destination. This transit center would be used as a focal point for services north of Thunderbird Road.

Local Circulators

Local circulators could be operated as linehaul routes or loops:

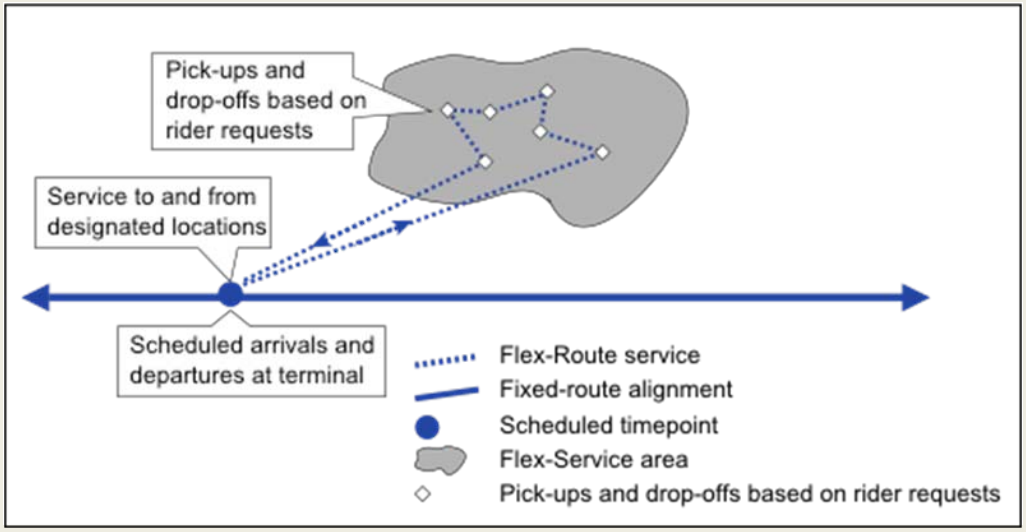
- Linehaul routes:
  - Travel along the same alignment in both directions.
  - Provide faster service, as riders only ride the segment of the route between their origin and destination in both directions.
- Loop routes:
  - Typically operate in only one direction.
  - As a result, are half as expensive to operate.
  - However, service is less convenient for riders as round trips require a trip around the full loop.

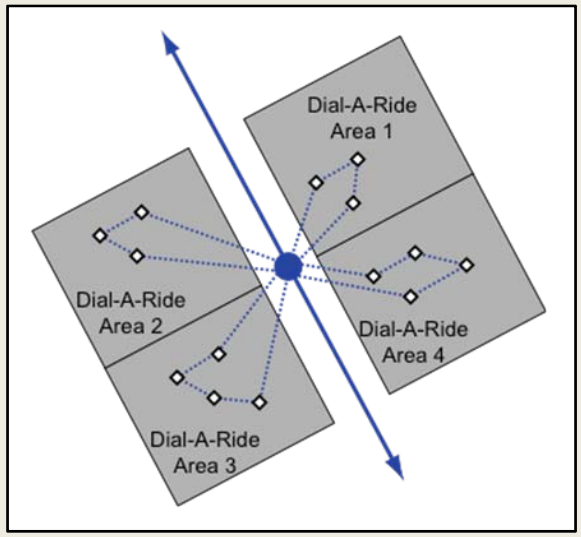




Flex Service

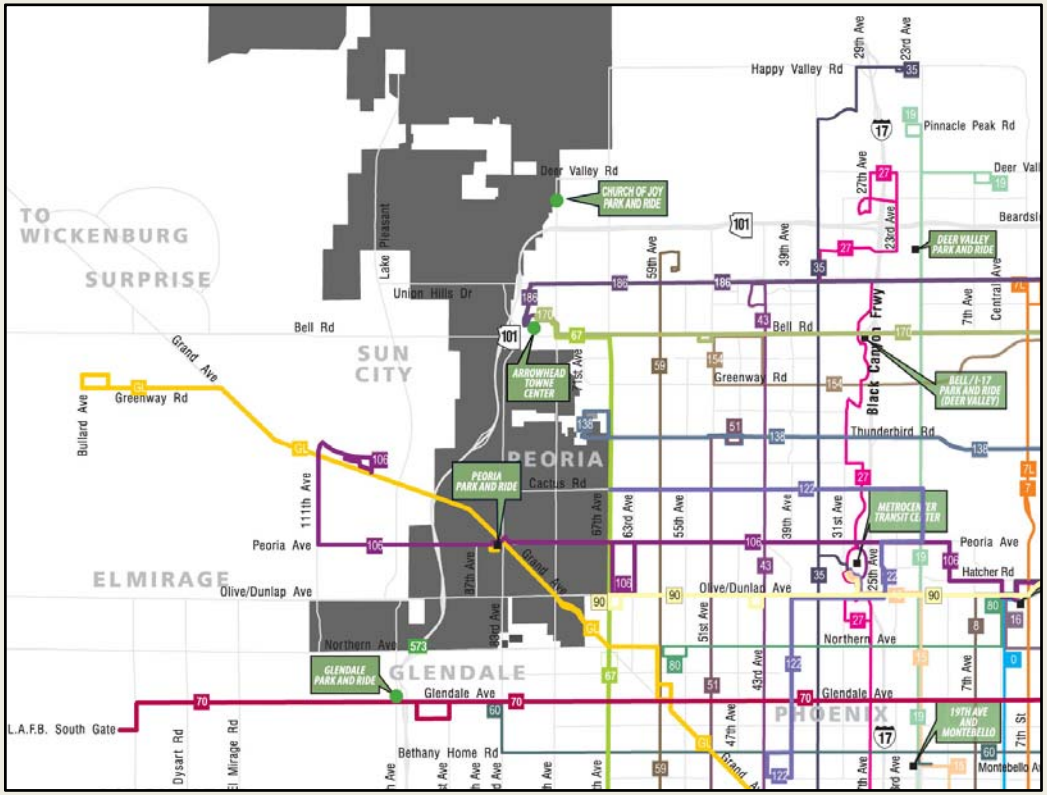
- ***Combines the predictability of fixed-route bus service with the flexibility of demand response services:***
  - At one end of the route, buses operate to and from a major transfer point at scheduled times:
    - The Old Town Peoria Transit Center.
    - The Arrowhead Transit Center.
  - At other points, the service is entirely flexible, and will pick-up and drop-off passengers at any location within the service area.





Extend Valley Metro Grid

- *Valley Metro service is largely configured as a grid.*
- *Routes generally operate along major north-south and east-west arterials.*
- *Peoria, with a few limited exceptions, is just beyond the western edge of the grid.*
- *Peoria could fund the extension of Valley Metro routes into Peoria.*



Service Characteristics and Costs

- ***Operating costs are related to length, span of service, and service frequency.***
- ***MAG's Regional Transit Framework Study suggests that local service should operate at least every 30 minutes.***
- ***For service every 30 minutes from 6 am to 6 pm Monday thru Saturday, approximately costs would be:***

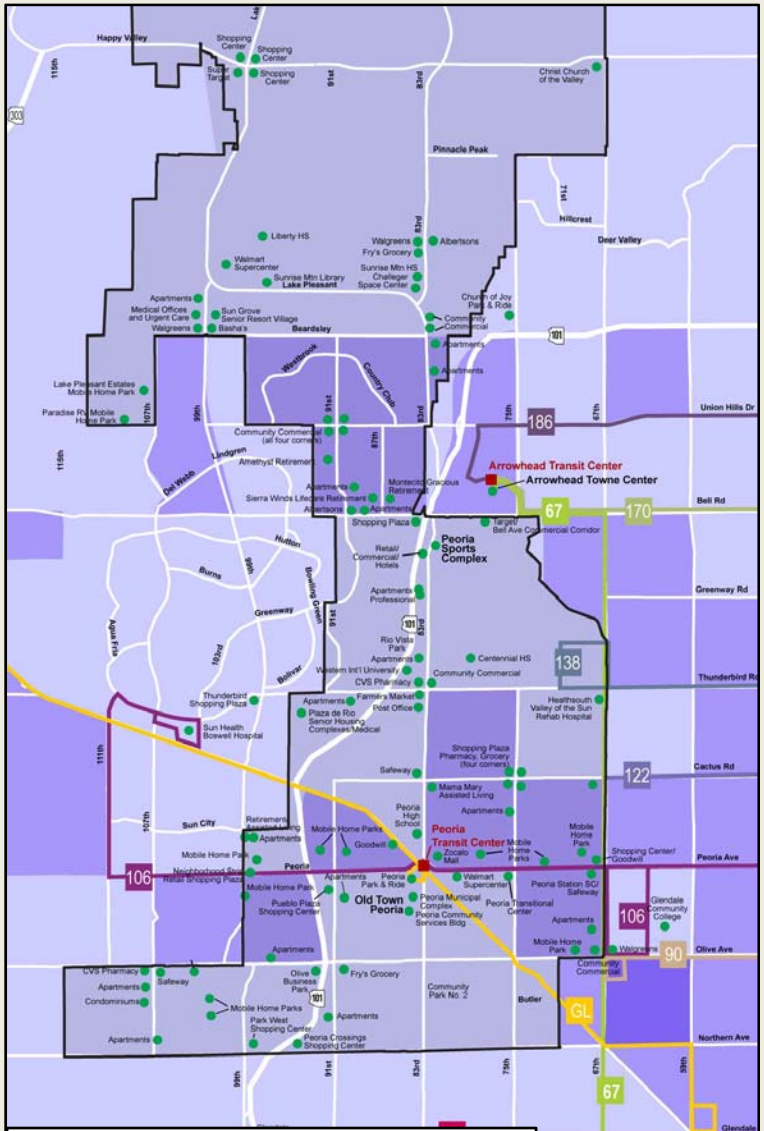
Route Type	Route Length/Area Service	Vehicles Required	Annual Operating Cost
Linehaul	11 – 13 miles	4	$1,000,000
	17 – 20 miles	6	$1,500,000
	22 - 26 miles	8	$2,000,000
Loop	11 – 13 miles	2	$500,000
	22 - 26 miles	4	$1,000,000
Flex	5 – 6 sq miles	2	$500,000

Service Characteristics and Costs

- ***However:***
  - These routes will be funded through Peoria's 0.3% transit sales tax.
  - In the short-term, only $1.2 million is expected to be available per year.
- ***As a result, service only every 60 minutes has also been considered.***
- ***For service every 60 minutes from 6 am to 6 pm Monday thru Saturday, costs would be half as high:***

Route Type	Route Length/Area Service	Vehicles Required	Annual Operating Cost
Linehaul	11 – 13 miles	2	$500,000
	17 – 20 miles	3	$750,000
	22 - 26 miles	4	$1,000,000
Loop	11 – 13 miles	1	$250,000
	22 - 26 miles	2	$500,000
Flex	5 – 6 sq miles	1	$250,000

Ridership and Productivity



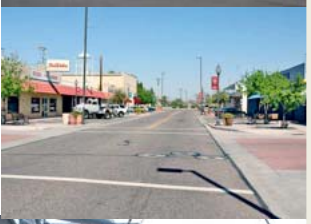
2008 Population Density

- ***Ridership closely related to population and employment density:***
- ***Most densely developed areas are:***
  - Between Beardsley Rd and Bell Road.
  - Between Thunderbird Rd and Olive Ave.
- ***Highest ridership and most productive routes would serve those areas.***

Service Design Objectives

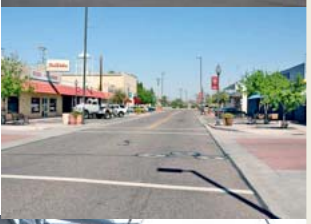
- ***Provide service to developed areas of Peoria, including major activity centers:***
  - Shopping centers
  - Medical facilities
  - Old Town
  - Etc.
- ***Provide local service within Peoria.***
- ***Provide connections to Valley Metro.***
- ***Make service relatively direct.***
- ***Provide service at least:***
  - Monday through Saturday.
  - From 6 am to 6 pm.
  - Every 30 to 60 minutes.

Circulators



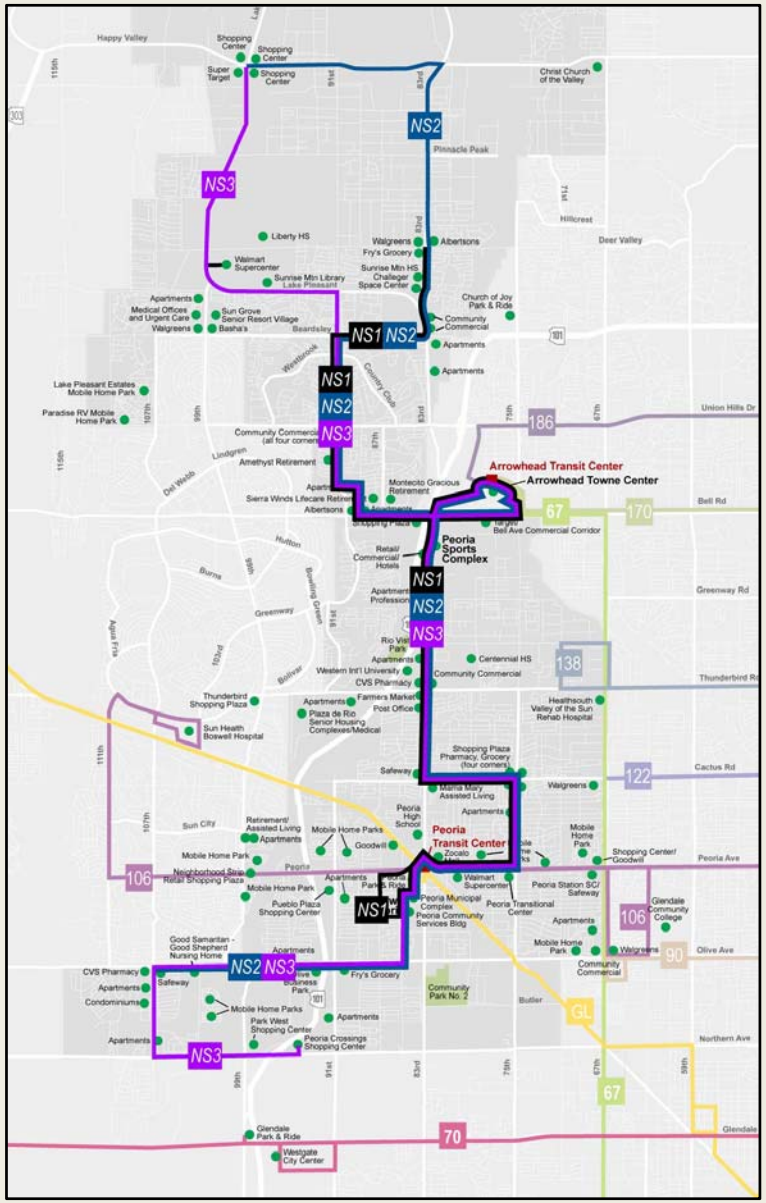
- ***Three types of circulators examined:***
  - **North-South linehaul routes** that would generally serve developed areas along 83rd Avenue.
  - **Shorter linehaul routes** that would serve northern and southern developed areas.
  - **Loop routes** that would serve northern and southern developed areas.

Circulators: North-South Linehaul Routes



- ***Designed to:***
  - Serve Peoria's north-south spine generally along 83rd Avenue.
  - Focus service on currently developed areas.
  - Provide connections to Valley Metro system at Arrowhead Transit Center and planned Old Town Transit Center.

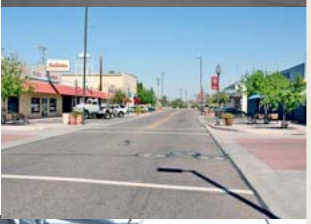
Circulators: North-South Linehaul Routes



- NS1 Deer Valley Rd – Old Town
  - Serves most heavily developed areas between Deer Valley Road and Old Town.
- NS2 Happy Valley Rd – Olive Ave
  - Extends service northward to Happy Valley Rd at Lake Pleasant Pkwy via 83rd Ave.
  - Extends service south to Olive Ave
- NS3 Happy Valley Rd – Northern Ave
  - Extends service northward to Happy Valley Rd at Lake Pleasant Pkwy via Lake Pleasant Pkwy.
  - Extends service south to Northern Ave

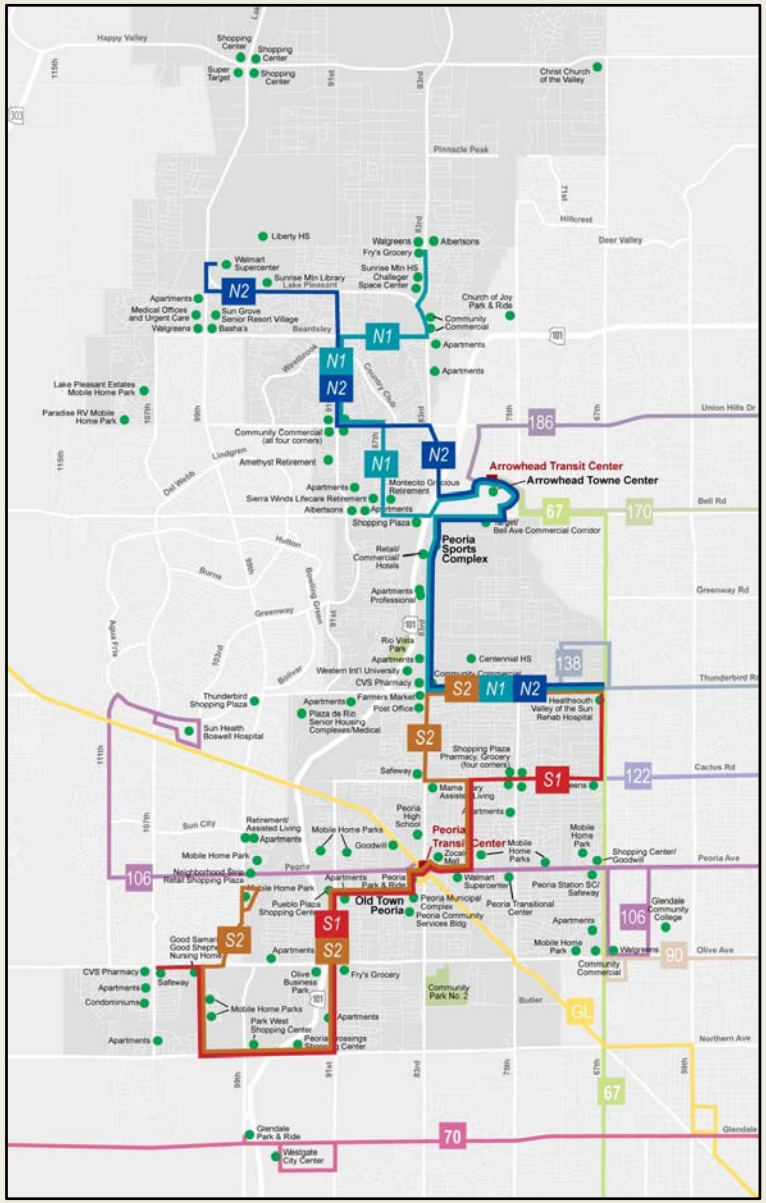
	NS1	NS2	NS3
Length (miles)	10.4	21.3	19.3
Frequency (mins)	60	70	70
Operating Cost	$500,000	$750,000	$750,000
Weekday Ridership	322	373	442
Pax/Vehicle Mile	1.1	1.0	1.0
Operating Cost/Pax	$4.85	$6.27	$5.29

Circulators: Shorter Line-Haul Routes



- ***Designed to:***
  - Serve more local trips.
  - Serve most heavily developed areas.
  - Provide connections to Valley Metro system at various points.

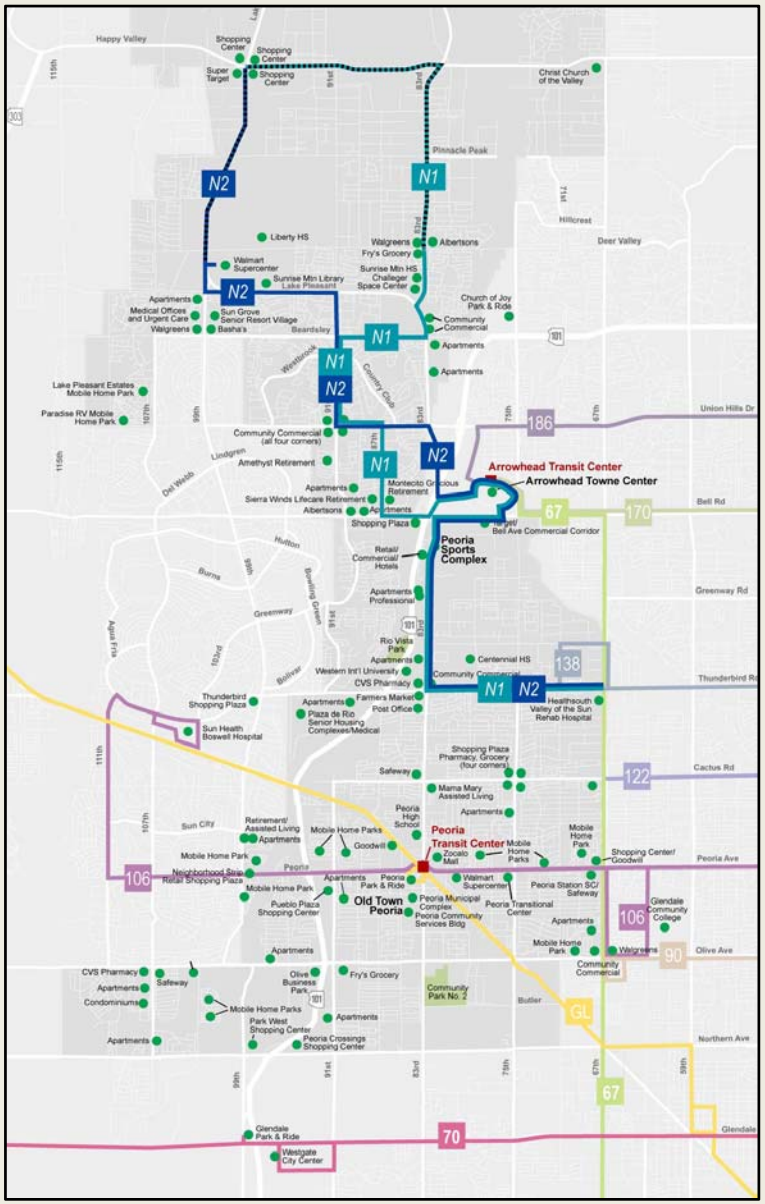
Circulators: Shorter Line-Haul Routes



- N1 Lake Pleasant Pkwy – Thunderbird Rd
  - Connects areas in northern Peoria on a north-south axis with Arrowhead Transit Center.
- N2 Deer Valley Rd – Thunderbird Rd
  - Same as N1 except to Deer Valley Rd via 83rd Avenue.
- S1 Thunderbird Rd – Olive Ave/107th Ave
  - Connects southwest end of city with Old Town and 87th Ave along southwest-northeast alignment.
- S2 Thunderbird Rd – Peoria Ave/99th Ave
  - Compared to S1, provides service to more housing west and southwest of Old Town, and service to more of 83rd Avenue.

	N1	N2	S1	S2
Length (miles)	11.3	11.6	9.9	12.0
Frequency (mins)	60	60	60	60
Operating Cost	$500K	$500K	$500K	$500K
Weekday Ridership	334	314	246	298
Pax/Vehicle Mile	1.2	1.0	1.0	1.0
Operating Cost/Pax	$4.68	$4.96	$6.34	$5.23

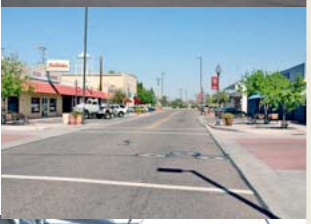
Service Farther North to Happy Valley



- *Service farther north to Happy Valley Road increases ridership, but at significantly higher cost and lower productivity.*
- *This is because most of the area is not yet developed and ridership north of Deer Valley Road would be very low.*

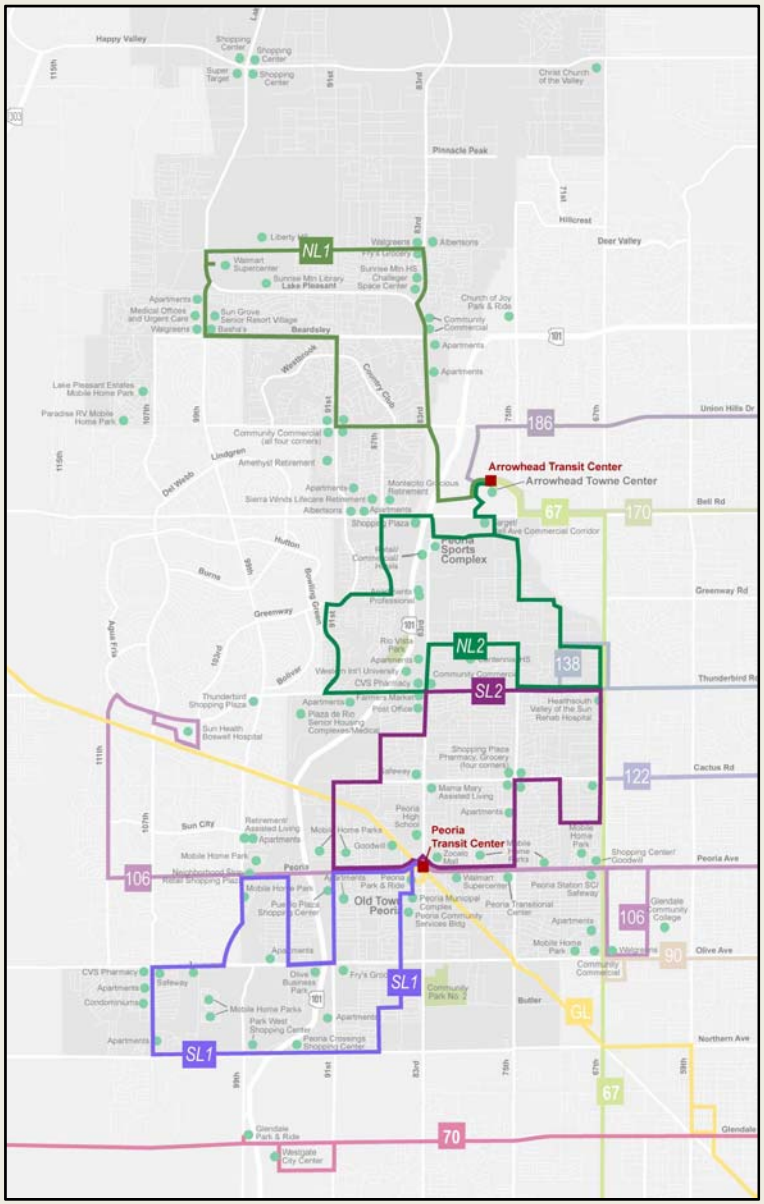
	N1	N2	N1 Long	N2 Long
Length (miles)	11.3	11.6	15.3	14.0
Frequency (mins)	60	60	55	50
Operating Cost	$500K	$500K	$750K	$750K
Weekday Ridership	334	314	400	345
Pax/Vehicle Mile	1.2	1.0	0.9	0.8
Operating Cost/Pax	$4.68	$4.96	$5.85	$6.87

Loop Routes



- ***Designed to:***
  - Serve similar areas as linehaul routes but at lower cost (half the cost of linehaul routes).

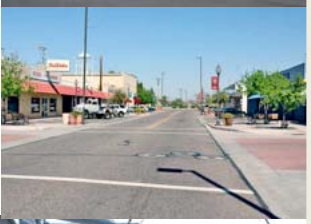
Loop Routes



- Four loops (NL1, NL2, SL1, and SL2) could:
  - Serve most developed areas of Peoria.
  - Provide connections to Valley Metro at either Old Town or Arrowhead Transit Centers.
- Total ridership on loops would be lower than with linehaul routes serving the same areas.
- However, cost per passenger would be lower due to lower operating costs.

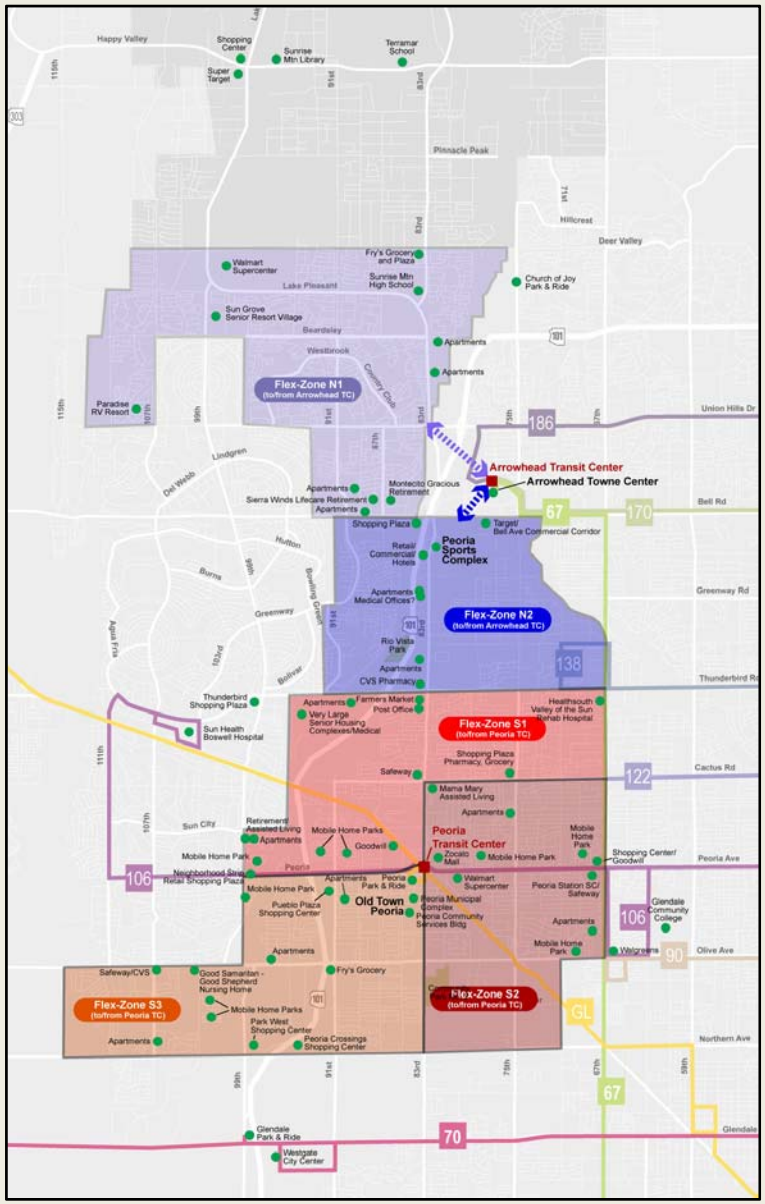
	NL1	NL2	SL1	SL2
Length (miles)	12.0	12.2	11.8	11.1
Frequency (mins)	60	60	60	60
Operating Cost	$250K	$250K	$250K	$250K
Weekday Ridership	262	168	221	216
Pax/Vehicle Mile	1.7	1.1	1.4	1.5
Operating Cost/Pax	$2.96	$4.65	$3.53	$3.61

Flex Service



- ***Designed to:***
  - Service most developed areas with Flex service to and from either Old Town Transit Center or Arrowhead Transit Center.
  - Provides more convenient service in some respects (door-to-door service at one end).
  - Provides less convenient service in other respects (need to make reservations).
- ***Each route would cost $250,000 per year*** *(for service Monday thru Saturday every 60 minutes from 6 am to 6 pm).*
- ***Could reduce Dial-A-Ride costs.***

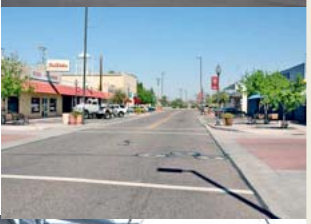
Flex-Service



- Five Flex-Routes could serve most developed areas of Peoria.
  - Two routes in north to and from Arrowhead Transit Center.
  - Three routes in south to and from Peoria Transit Center.
- Could replace most Dial-A-Ride service.
- Annual operating costs for service every 60 minutes would be $250,000 per route, or $1.25 million for all five routes.

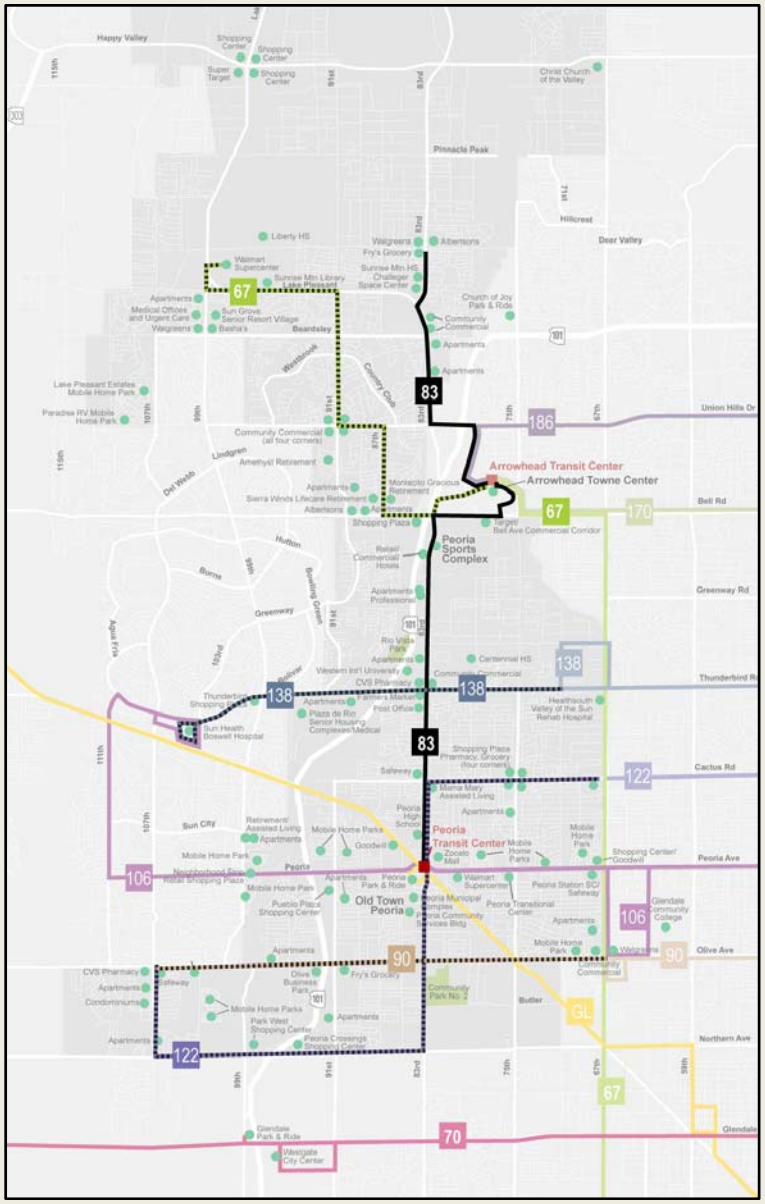
	Flex-N1	Flex-N2	Flex-S1	Flex-S2	Flex-S3
Frequency	60	60	60	60	60
Operating Cost	$250K	$250K	$250K	$250K	$250K
Weekday Ridership	230	91	164	174	121
Pax/Vehicle Mile	1.4	0.6	1.0	1.1	0.8
Operating Cost/Pax	$3.39	$8.57	$4.76	$4.49	$6.42

Extend Valley Metro Service



- ***Designed to:***
  - Make Peoria part of the Valley Metro system.
  - Provide service within Peoria.
  - Provide much better regional service.
- ***Would cost up to $600,000 to $1.2 million per route—up to $3.5 million for comprehensive service.***
- ***Costs higher than local options because Valley Metro runs as frequently as every 30 minutes and from early morning until late evening.***

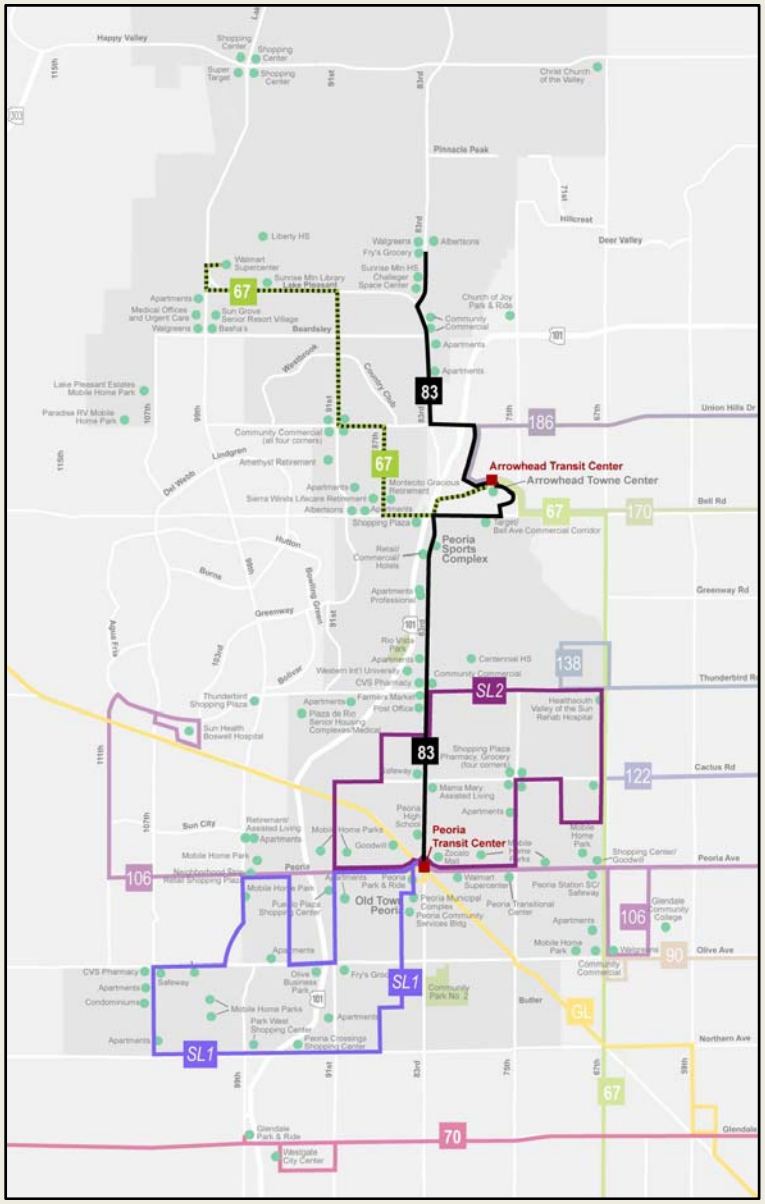
Extend Valley Metro Service



- Develop new **Route 83** north-south route on 83rd Ave.
- Extend other Valley Metro routes westward into Peoria:
  - **Rt 67** 67th Ave to Walmart on Lake Pleasant Pkwy.
  - **Rt 90** Dunlap/Cave Creek to Olive Ave/107th Ave.
  - **Rt 122** Cactus/39th Ave to Olive Ave/107th Ave via Old Town.
  - **Rt 138** Thunderbird to Boswell Hospital.
- Generates highest ridership at highest cost.

	67	83	90	122	138	Total
Frequency	30	30	30	60	30	
Oper Cost	$800K	$1.2M	$650K	$600	$250K	$3.5M
Weekday Ridership	709	1,108	449	299	182	2,747
Pax/Veh Mi	1.8	1.6	1.2	1.0	0.9	
Cost/Pax	$3.21	$3.43	$4.72	$5.45	$6.30	

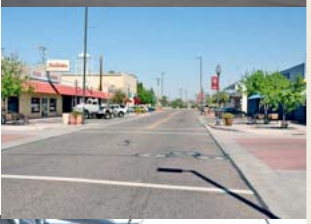
Highest Ridership/Most Productive



- Highest ridership and/or most productive options, by area, are:
  - New Route 83 north-south route on 83rd Ave.
  - Valley Metro Rt 67 67th Ave extension to Walmart on Lake Pleasant Pkwy.
  - Two new loop routes (SL1 and SL2) to serve areas between Thunderbird Road and Northern Avenue.
- However, operating costs would be double currently identified revenues.

	67	83	SL1	SL2	Total
Frequency	30	30	60	60	
Operating Cost	$800K	$1.2M	$250K	$250K	$2.5M
Weekday Ridership	709	1,108	221	216	2,254
Pax/Vehicle Mile	1.8	1.6	1.4	1.5	
Operating Cost/Pax	$3.21	$3.43	$3.53	$3.61	

Cost Reduction Options



Costs could be reduced by providing:

- Less comprehensive service (focus service on areas where demand is greatest):
  - Between Beardsley Rd and Bell Road.
  - Between Thunderbird Rd and Olive Ave.
- Less frequent service:
  - Every 60 minutes versus every 30 minutes during off-peak periods.
  - Every 60 minutes versus every 30 minutes all day.
- Shorter spans of service.
- Weekday only service.

Summary/Questions

- ***Many options available.***
- ***However, not possible to provide frequent and comprehensive service with available revenues.***
- ***What is most important?***

Competing Priority	vs.	Competing Priority
Good service in fewer areas (where demand is highest)	vs.	Mediocre service in all/most developed areas
More frequent service/ Shorter span of service	vs.	Less frequent service/ Longer span of services
Weekday service	vs.	Weekend service
Service within Peoria	vs.	Regional connections
Serve work trips	vs.	Serve shopping & medical trips
Support Old Town revitalization	vs.	Serve newly developing areas