



North Monroe Advisory Board

September 8, 2016

Karl Otterstrom, AICP Steve Hopkins



Share history of transit on North Monroe Street

Describe existing transit conditions

Provide data to address board questions

Discuss stop placement and design

Share future plans for transit along the corridor

Answer transit-related questions



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## **Current Service**







#### Route 24 – Monroe

- Connects Five Mile P&R with downtown Spokane
- 3<sup>rd</sup> busiest route in network
- 649 weekly trips
  - 58 weekday roundtrips
  - 28 Saturday roundtrips
  - I2 Sunday roundtrips
- 2015 boarding data
  - 2,199 average weekday
  - 883 average Saturday
  - 435 average Sunday
  - 628,615 annually





About 12,725 people's homes, 21,212 people's jobs, and 2,061 residents without access to a private vehicle...

... are within  $\frac{1}{4}$ -mile of a Route 24 stop.

Data: 2013 American Community Survey







# **Existing Conditions**

- Four stop pairs
  - Dalton
  - Frederick
  - Grace
  - Montgomery/Carlisle





About 3,747 people's homes, 1,251 people's jobs, and 431 residents without access to a private vehicle...

...are located within <sup>1</sup>/<sub>4</sub>-mile of Route 24 stops serving the Indiana-to-Dalton corridor.

Data: 2013 American Community Survey



#### Route 124 – North Express

- Connects Hastings P&R with downtown Spokane
- I5 southbound weekday trips
- II northbound weekday trips
- Makes no stops on Monroe between Wellesley and Broadway
- 2015 boarding data
  - 334 average weekday
  - 84,816 annually





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# **Board Questions**

How many people get on and off the bus?

How long does the bus wait at each stop?

How often do wheelchair ramps get deployed?

How often do bicycle racks get used?

Are there plans to close any stops?











### Average Weekday Boardings and Alightings







Northbound Monroe Weekday Dwell and Travel Time Measurements, August 25 - September 2, 2016													
Plaza Departure Time	Monroe @ Carlisle		Dwell	Monroe @ Grace		Dwell	Monroe @ Frederick		Dwell	Monroe @ Dalton		Dwell	Total Corridor Dwell
4:57 PM	Arr	Dep		Arr	Dep		Arr	Dep		Arr	Dep		
	0:54	1:04	0:10	1:41	1:46	0:05	2:15	2:17	0:02	2:33	2:46	0:13	0:30
	Off	On		Off	On		Off	On		Off	On		
	2.2	0.0		1.2	0.0		0.7	0.0		2.8	0.3		
5:12 PM	Arr	Dep		Arr	Dep		Arr	Dep		Arr	Dep		
	0:48	0:56	0:08	1:39	1:43	0:04	2:12	2:15	0:03	2:31	2:39	0:08	0:23
	Off	On		Off	On		Off	On		Off	On		
	1.7	1.7		0.8	0.0		0.8	0.0		1.7	0.0		
5:27 PM	Arr	Dep		Arr	Dep		Arr	Dep		Arr	Dep		
	0:49	0:57	0:08	1:41	1:44	0:03	2:17	2:24	0:07	2:43	2:50	0:07	0:25
	Off	On		Off	On		Off	On		Off	On		
	1.4	1.3		0.7	0.0		1.0	1.0		2.2	0.0		
5:42 PM	Arr	Dep		Arr	Dep		Arr	Dep		Arr	Dep		
	0:44	0:52	0:08	1:28	1:32	0:04	1:58	2:00	0:02	2:16	2:26	0:10	0:23
	Off	On		Off	On		Off	On		Off	On		
	1.0	1.0		0.7	0.2		0.5	0.0		1.3	0.3		
Average	1.6	1.0	8.5 sec	0.8	0.0	4.0 sec	0.8	0.3	3.5 sec	2.0	0.2	9.5 sec	25.25 sec
						Average Northbound Travel Time from Indiana to Dalton							2:40

- 24 surveys
- Trip with longest total dwell at all 4 stops: 40sec of dwell
- Trip with shortest total dwell at all 4 stops: I4sec of dwell
- 4 bikes, 5 strollers, 0 wheelchairs



#### Delay (in seconds) between Indiana and Dalton - 5-6pm

2:00 1:30 Delay (in seconds) 1:00 0:30 0:00 .7:00 7:03 17:06 17:09 17:15 17:15 17:18 17:24 17:24 17:36 17:36 17:36 17:36 17:36 17:37 17:54 17:54 17:57 8:00 Includes 45-second cycles of traffic light at Montgomery (two 13-second red phases and one 25-second red phase)



# But what about the wheelchair ramp?







Ramp deployments occur about once every 90 trips through the corridor. (7.17 / 649 weekly trips)



STA Farebox Data, 4/2015 – 3/2016





Ramp deployments occur in the peak direction about once every 96 trips through the corridor. (1.25 / 120 peak trips / week)









1.25/wk	7.17 total average lift deployments per week
peak	(includes peak and off-peak trips)





### And what about bikes? Don't they slow down buses, too?





# Bikes usually take about 15-20 seconds to load.





#### Average Bike Loadings Per Week – 649 trips







## Doesn't the bus stop every block?





#### It once seemed like it, but not anymore.





# Bus Stop Consolidation on North Monroe September 2010

- Removed stop pairs at Knox & York
- Consolidated Montgomery and Carlisle northbound
  - Relocated southbound stop at Indiana to Nora due to public feedback
- Maintained Frederick due to public feedback



# Minimal Loss of 1/4-mile Coverage from Stop Consolidation Process



Coverage including stop at W Dalton Ave

Coverage without stop at W Dalton Ave

= ¼-mile radius from existing STA bus stop



# Minimal Loss of 1/4-mile Coverage from Stop Consolidation Process



Coverage including stop at W Frederick Ave

Coverage without stop at W Frederick Ave

= ¼-mile radius from existing STA bus stop



#### Combined Boardings and Alightings with Stop Consolidation





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# Bus Stop Locations



# **Bus Stop Locations: Pullouts**











# Pullouts

#### Advantages:

- Reduce blocking of travel lane
- Reduce delay for other vehicles

Disadvantages:

- Increase potential for side-swipe or rear-end collisions upon re-entry
- Increase delay for transit passengers
- Reduce area available for parking
- Reduce space for transit amenities

STA prefers not to use pullouts due to increased costs, risks, and transit delays





#### Pullout for 40' transit coach

- Requires approximately 150'
  - 60' to decelerate and enter
  - 40' for coach
  - 50' to reenter travel lane
- Equivalent to 7-8 parking stalls
- Requires 5' x 8' ADA landing pad



#### **BE A COURTEOUS DRIVER AND**







#### Yield-to-Bus signage has **TO FLOW OF TRAFFIC** "no significant safety and operational effect"

-Center for Urban Transportation Research, 2007



# **Bus Stop Locations: Bumpouts**











# **Bumpouts**

Advantages:

- Eliminate bus merging
- Increase transit efficiency
- Increase space available for transit amenities (shelters, signage, etc.)
- Reduce loss of parking for businesses

#### Disadvantages:

- Other vehicles delayed by boarding
- Potential for unsafe passing
- Farside may block intersections

STA prefers the use of bumpouts to reduce costs, risks, and delays





#### Bumpout for 40' transit coach

- At a nearside or farside stop, extension of pedestrian bumpout
- Requires approximately 40'
- Equivalent to 2 parking stalls
- Requires 5' x 8' ADA landing pad (part of sidewalk)









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#### **HPT Line Routing Option** 🚍 Five Mile Park & Ride Wellesley Garland District North Monroe Business District Spokane County Campus Kendall Yards 🔁 Downtown Spokane Manito Park Lincoln Heights South Regal Street 🚍 Moran Prairie Park & Ride







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