

Hierarchic Color Scheme . System Map . Stop Info Panels

Network Legibility

Increase access to the Community Service network with new branding emphasizing frequent corridors

Hierarchic Color Scheme

Organize routes by frequency, span, reduced service status, and service area to improve network comprehensibility.

EXISTING CONDITIONS

Different types of community services with distinct frequencies and spans are indistinct to riders.

There is no rider-facing frequent network to allow for trips without looking at timetables.

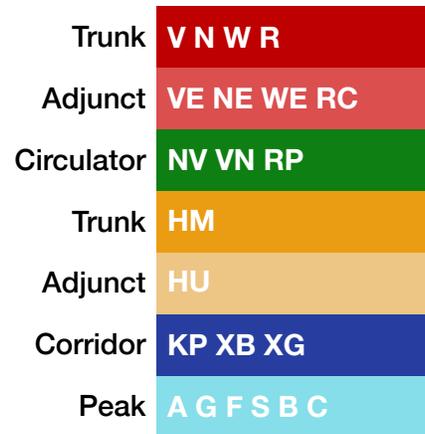
Frequencies and daily spans of service are further complicated by full and reduced service periods.

NEW ADVANTAGES

Fewer colors allow for showing all routes downtown and on campus without overwhelming viewers.

Distinct colors clearly delineate route type, and related colors display the connections between adjunct routes and their trunks.

Trunk/adjunct colors cleanly separate full and reduced service, as well as frequency and span generally.



Separate: Campus Services

Trunk, adjunct, and circulator colors correlate with routings on campus and downtown for a simpler system map [see System Map].

Services which come less frequently or only run during full service are shown with lighter colors so the always-running, frequent network is most visible.

STRATEGY OPTIMIZATION

Clear route types allow CATA to teach development decision-makers about how they can use frequent transit to their advantage:

- Teach local municipal staff about frequent corridors with the system map so they can increase density, promote walkability, and decrease

parking around these corridors through zoning and subdivision and land development ordinances; and can encourage elected officials and developers to plan around these corridors

- Create relationships with local realtors to teach them about frequent corridors with the system map so they can use these corridors as selling points for homebuyers

Share route types in outreach to Penn State students to show which transit corridors are most convenient—generally which are most frequent—so they can make informed decisions about apartment rentals:

- Teach apartment landlords who own properties with good transit options how they can use frequent transit as a selling point
- Encourage local rental websites to include frequent transit corridors in their user interfaces
- Engage students directly at Penn State-sponsored housing fairs, in the HUB, or at transit stops to show the system map and information about frequent transit corridors
- Teach Penn State Student Affairs and other Penn State offices so they can inform students looking for off-campus living options. Encourage Penn State to include frequent transit corridors and the system map in mass emails about off-campus housing sent to students

OPPORTUNITIES & POSSIBILITIES

Clear route types can help inform decisions about service changes:

- Maintaining a standard frequency on adjunct routes allows riders to understand the frequent network more easily
- Standardizing corridor routes through campus in the future, as long as convenience of movement is maintained, might improve comprehensibility
- Continuing to divide trunk routes as year-round service and adjunct routes as full service would improve corridor comprehensibility

Municipalities and developers in the Centre Region could use the frequent map to determine where density and redevelopment should be clustered. Homebuyers and renters should be encouraged to use the frequent map to ensure they will have a convenient commute.

System Map

Distribute a new system map showing the entire community service network, including campus and downtown.

Show information about spans and frequencies of services so the frequent network is accessible without timetables.

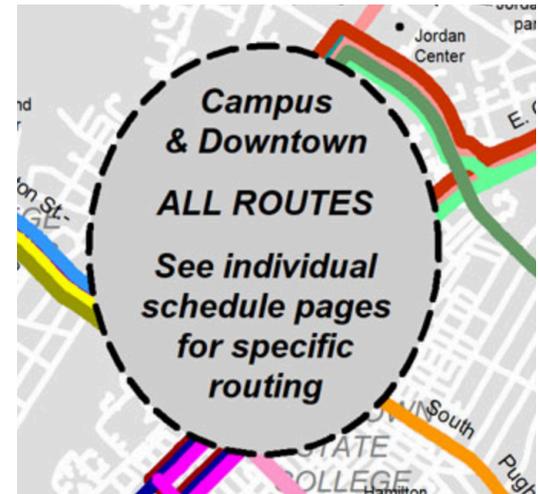
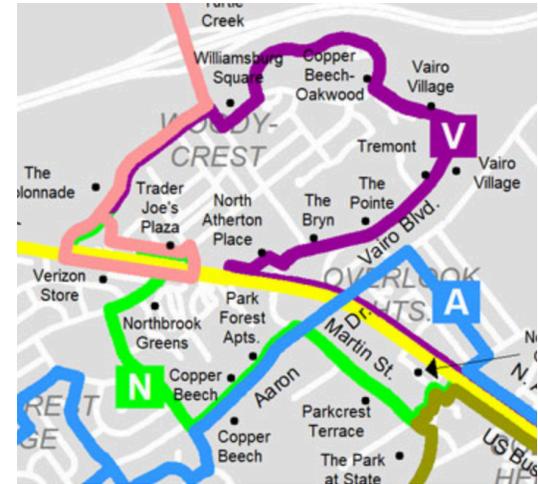
EXISTING CONDITIONS

The current system map lacks the information required to understand the full system:

- All routes are shown with the same importance, even though some come every 20 minutes whereas others come four times a day
- The system map does not show how lines are routed on campus and downtown, making it hard to decide which bus to take on some corridors
- Some of the most frequent routes—express and campus routes—and routes which often expand the span of service—circulators including the NV, VN, and RP—are not shown on the system map
- There is no single page which shows an overview of all community service corridor locations, frequencies, and spans

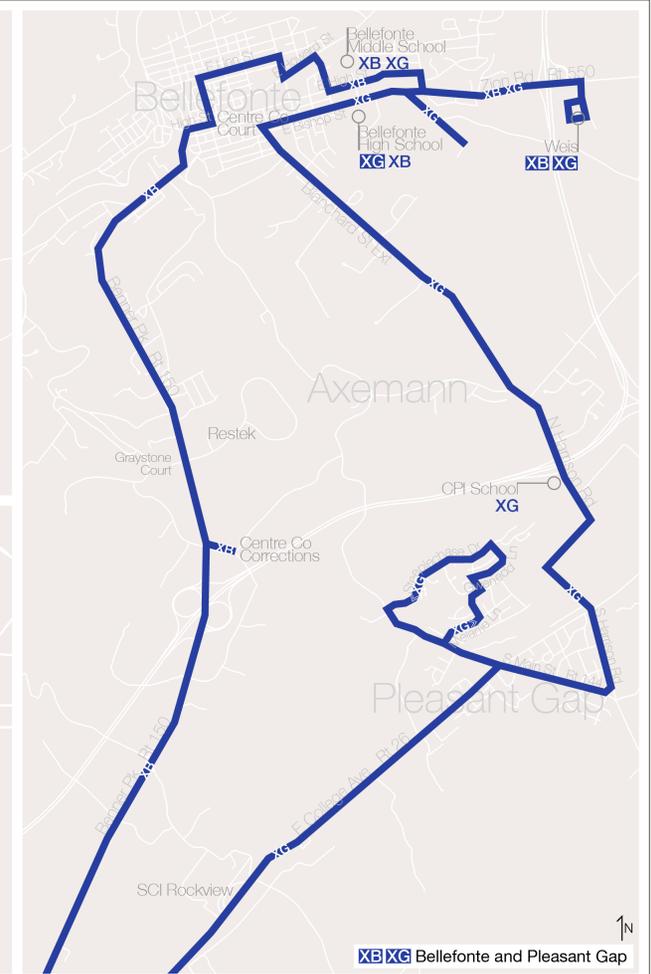
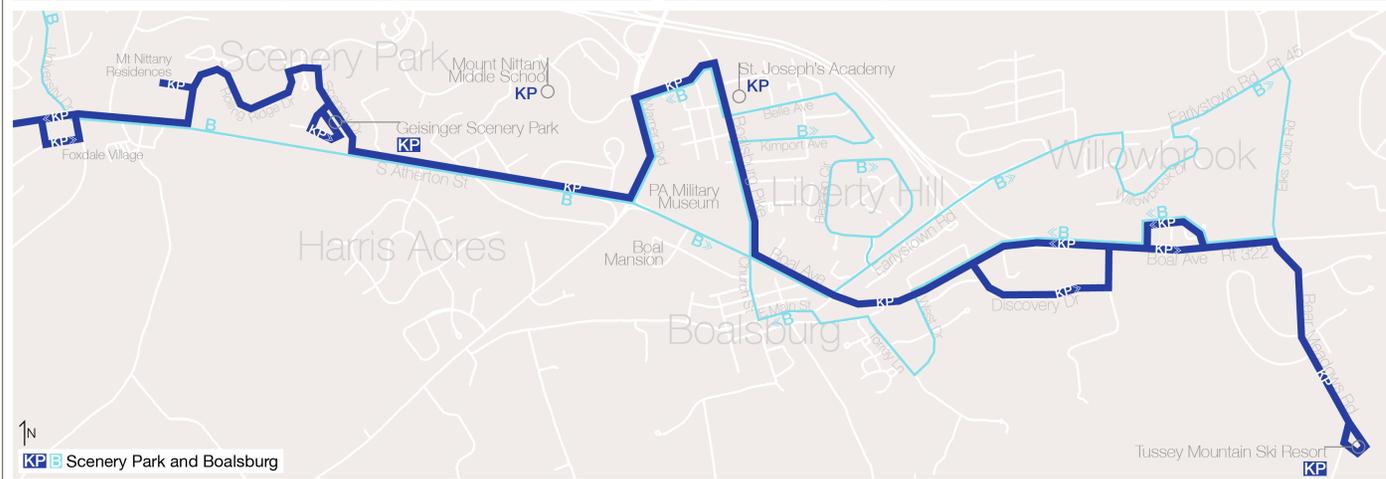
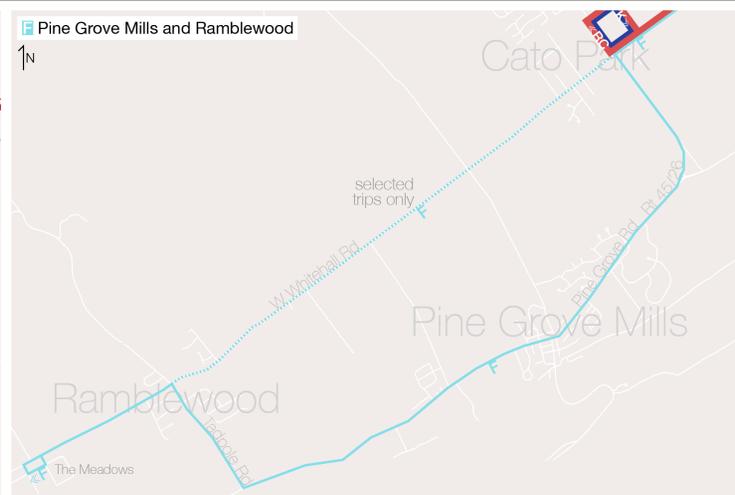
Detailed area maps do not prioritize information important to riders:

- Building outlines, stop numbers, etc. are superfluous information. They are better suited for Google Maps and neighborhood walking maps¹⁰⁶



Current system map, lacking campus and downtown routings, frequency differentiation, and adjunct or circulator routes

¹⁰⁶ Metropolitan Transportation Authority, "MTA Neighborhood Maps: Queens," WalkNYC, accessed July 21, 2019.




CATABUS
Community Service   \$2*

System Map

Fall 2019
Spring 2020

*Campus Loops and Links are free to ride
Unlimited pass, cash/coins (no change), tokens, Token Transit mobile app.
Kids <40*, seniors w/ transit ID ride free; reduced fare details: catabus.com

Mobile Apps

Google Maps
Point to point transit directions showing when and where to walk, ride, and transfer

MyStop Mobile
Bus locations
Real time arrivals
Trip planning and alerts
Walking Directions



Other Services

    **Campus Service**
Free routes serving Campus, Downtown, West Campus, Mt Nittany Medical Center, and Innovation Park

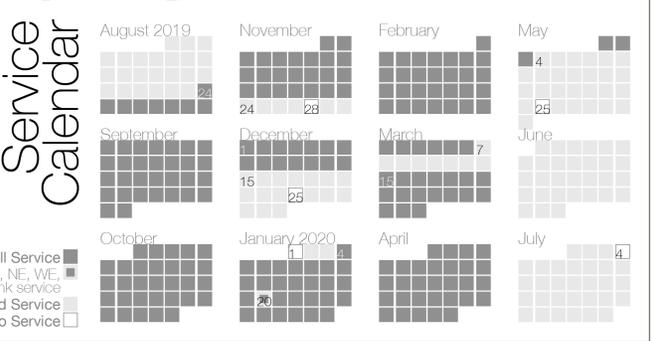
  **Gameday Shuttle**
\$2 routes serving Beaver Stadium, Downtown, and Free Parking on Penn State football gamedays

CATACommute
Connects groups of commuters traveling from around the region to State College and Bellefonte
catabus.com for details

Contact Us

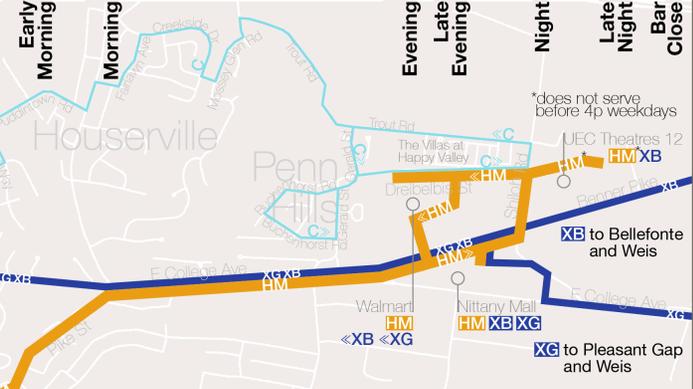
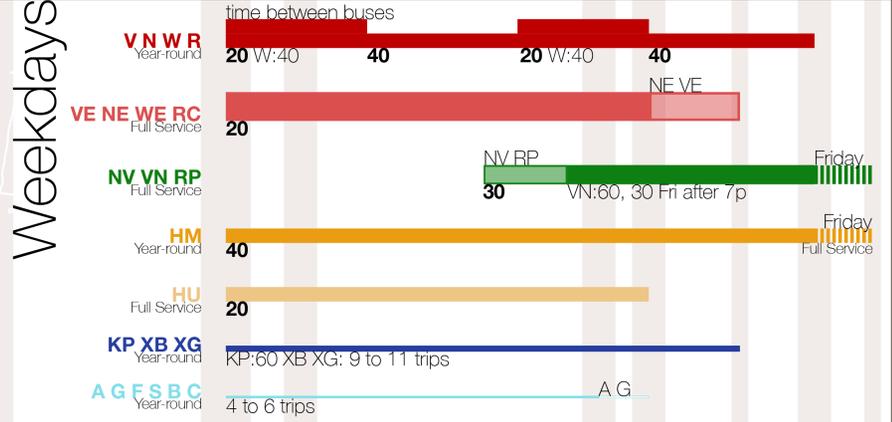
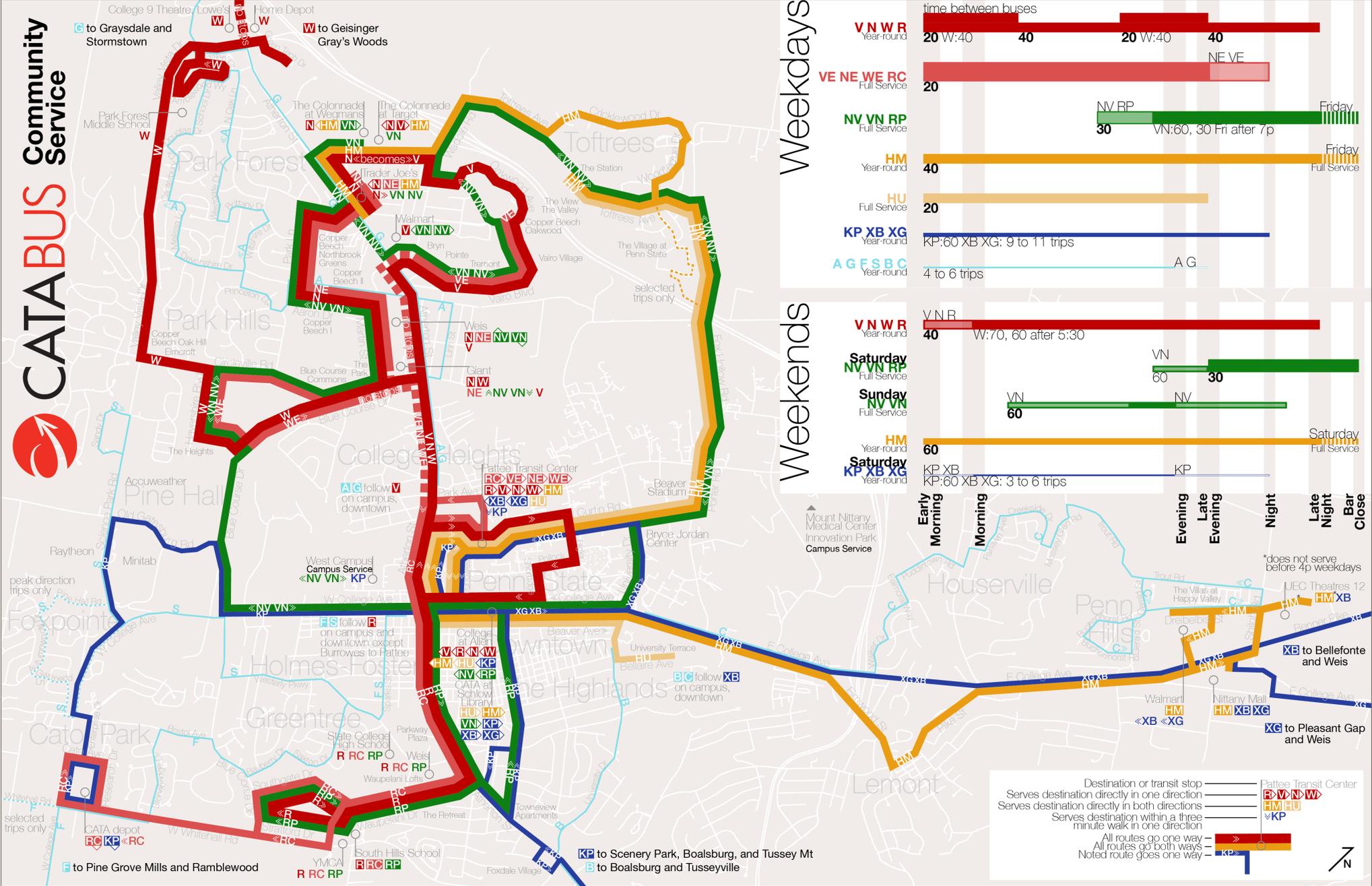
catabus.com
cata@catabus.com
814.238.CATA (2282)

Customer Service Center
108 E Beaver Ave
State College, PA, 16801
M-F: 7:30a-5:30p
Sat: 9a-1p Sun: Closed



Proposed CATA Community Service System Map: Outside. See appendix for full 11x17 inch and editable versions.

CATABUS Community Service



Destination or transit stop ———— Pattee Transit Center
 Serves destination directly in one direction ———— R V N W
 Serves destination directly in both directions ———— H M H U
 Serves destination within a three minute walk in one direction ———— V K P
 All routes go one way ————
 All routes go both ways ————
 Noted route goes one way ————

Proposed CATA Community Service System Map: Inside. See [appendix](#) for full 11x17 inch and editable versions.



Current detailed area maps, showing superfluous information, and unlabeled, not frequency-differentiated, thin routes

- Though they are the most important part of the map, routes are hard to see because they are so thin
- Route lines do not show frequency, meaning routes coming every 20 minutes look the same as routes coming four times per day
- Routes are only labeled on the key, making it hard to remember which routes serve each corridor
- So much detail makes looking at a full system unmanageable, because one must zoom in so much to see anything
- Showing each route independently makes it almost impossible to show routes downtown and on campus in the same style

No system map variant is distributed as much as is warranted:

- There are only four bus stops with system maps posted for easy access
- There is no way to see system maps on any mobile app
- All variants but the most basic system map are hidden multiple convoluted clicks within the CATA website or are only shown in the Ride Guide, which most riders never see and which is hard or impossible to find on the CATA website

There are so many system map variants that many are not completely updated for each service change.

NEW ADVANTAGES

Riders can more easily find the services they want to use: first-time riders can easily find trunk routes, commuters can optimize their trip on peak-only routes.

Riders can see all services which come soon, and their spans, at a glance.

Riders can see an overview of all services to decide how to get somewhere or to decide where to live.

Government officials and business leaders can use the frequent map to determine best locations for new civic spaces, developments, and businesses.

One system map with all routes means only one system map must be updated for service changes. **One system map, one set of corridor maps which double as stop info panels, and one set of detailed maps and timetables used by expert riders, could become the only maps CATA regularly updates, simplifying service changes significantly.**

STRATEGY OPTIMIZATION

Post the new system map in as many places as possible to allow riders to memorize large portions of the system relevant to them:



System maps should be easily accessible for spontaneous use



System maps posted onboard each bus

- All buses should have system maps posted for viewing next to a container of system maps to take; instead of or as well as the ride guides currently offered
- All bus stops downtown and on campus should have a community service system map and a campus service map like the Pattee Transit Center stops currently do. Implementation should begin with all stops downtown and on campus which have shelters. At stops without shelters, system maps could be displayed on the exterior walls or in the lobbies of adjacent buildings until shelters are installed.

- All bus stops in the system with shelters should have a community service system map
- System map handouts should be given instead of or as well as ride guides to any community partners who currently receive ride guides

OPPORTUNITIES & POSSIBILITIES

As the system map becomes an influential part of renting off-campus housing, their complex name's inclusion on the system map could be an incentive landlords receive for participating in the apartment pass program, or for including the pass in rent, rather than as an additional fee.

Explore service changes which would increase system map legibility without impairing mobility. It is especially important to simplify a route type's series of paths through campus and downtown. For example, combining the HC and UT routes in Fall 2019 will allow light yellow adjunct routes to have one already-standard route through campus and downtown. Changes should not happen if they negatively impact service and decrease mobility, even if they increase legibility.

As service changes, also explore adjusting thresholds for route types and therefore route colors to better align with routings on campus and downtown.

Stop Info Panels

Create new stop info panels which condense route stop times to allow space for information about the entire corridor.

EXISTING CONDITIONS

Current stop info panels are cluttered and lack context:

- There is no information about the buses running on the corridor or about where each route goes outside the corridor
- Tables of times obscure simple patterns, like that a bus comes every 20 minutes
- Unimportant information is emphasized unnecessarily by text formatting and placement

Corridor snapshots are not optimized for their best use:

- Their overall proportions make it impossible to show them on the long, thin info panels at each stop so they are necessarily poster-sized
- Routes show no regard to relative geometry. Reducing complexity by diagramming is good, but, for example, Waupelani Dr should not look like outbound is West to East when in

SATURDAY & SUNDAY:				
---	8:38	11:18	1:58	4:38
---	9:18	11:58	2:38	5:18
---	9:58	12:38	3:18	5:58
7:58	10:38	1:18	3:58	6:38

MONDAY - FRIDAY:				
---	8:41	10:21	12:01	1:41
7:21	9:01	10:41	12:21	2:01
7:41	9:21	11:01	12:41	2:21
8:01	9:41	11:21	1:01	2:41

These trips operate only on Fridays during FULL SERVICE. See the CATABUS Service Calendar for the exact dates of FULL SERVICE

PM trips are in bold

*Please have exact fare ready before you board.
The scheduled departure times above are approximate as they are subject to traffic and weather conditions.*

For the next departures from this stop in real time text CB398 to 321-123

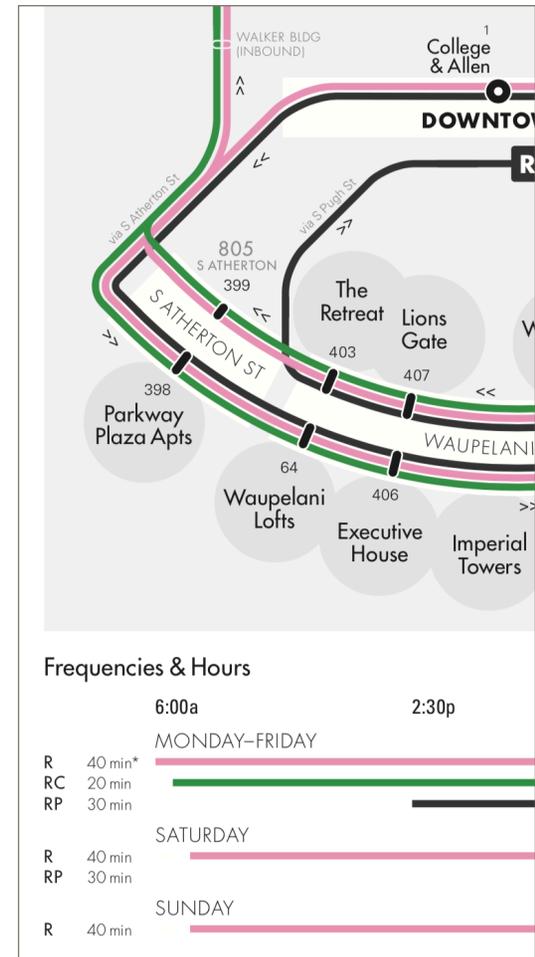
For the next three departures from this stop in real time use this QR code.



last revised: 7/30/2018 c297

238-CATA (2282) [www.catabus.com](http://realtime.catabus.com)

Current stop info panel, showing obscured 40- and 20 minute patterns and lack of graphic hierarchy



Current corridor snapshot, showing no regard to relative geometry, simple frequency and span information, and altered stop names, and lacking some stops along the routes shown

reality it is the opposite

- Frequency and span information is important, but is simple enough that all routes could be included on the same page on the system map
- Not all stops are shown within each corridor, and those shown do not use the official stop name, useful for real-time information
- At stops with corridor snapshot posters, ridership justifies a system map as well

NEW ADVANTAGES

New info panels show the same information as the corridor snapshots and the current stop info panels do, combined on a single 6" by 24" panel. This frees poster frames which currently host corridor snapshots to host system maps instead.

The information is organized hierarchically, making it easy for riders to find the information they need, and information they didn't know they needed.

The creation of these signs can be automated using Microsoft Excel and Adobe Illustrator from general transit feed specification data and blank corridor maps.

The same headway notation is used on Campus Service posters, standardizing



Current stop info panel, to be upgraded, and corridor snapshot, to be replaced with a system map, on Aaron Dr

information formats for riders using both.

Corridor maps show stops with transfers to other routes and show portions of the corridor where other routes parallel nearby, for riders to discover more convenient commutes.

Because many corridors meet on campus and downtown, info panels use the full panel for displaying headways, spans, and stop timing. All stops on campus and downtown should have a system map posted in a shelter [[see Bus Shelters](#)], to replace the functionality of corridor diagrams elsewhere.

STRATEGY OPTIMIZATION

Implement new stop info panels on the corridors with the most ridership first. Gradually upgrade all stop info panels to full-length 6" x 24" displays to allow all stops to show corridor maps.

To make official stop names more helpful, they should be changed to represent major destinations like apartment complexes rather than addresses. This will allow the stop info panels to show where apartment complexes are, like the corridor snapshots, without showing unofficial stop names.

Reduce and eliminate non-peak-only route schedules which do not follow a clock-face schedule, including frequencies like 35 minutes. Changes on the UT, P, and Saturday K timetables in Fall 2019 will leave only the Red Link, XB, XG, and weekend W routes to be changed.

Reduce and eventually eliminate schedules which do not repeat every hour. For example, transition 40 minute frequencies to 30 minutes [[see Increased Trunk Frequency](#)].

Next four pages: sampling of stop info panels showing V, A, Colonnade Blvd and Atherton St corridors, and two panels on campus. See [appendix](#) for full 6 x 24 inch and editable versions.



Vairo Blvd at The Bryn Inbound stop 513

Weekdays

@ :approx time past the hour



6:33a to 11:53p
every 40 min
@ :13 :53 odd hrs
:33 even hrs

+

7:13a to 10:33a
& **3:53p to 6:33p**
every 20 min
@ :13 :33 :53



7:11a to 9:51p
every 20 min
@ :11 :31 :51



M-Th

5:22p to 12:22a
every 60 min
@ :22

F

5:22p 6:22p &
7:22p to 2:52a
every 30 min
@ :22 :52

Weekends



7:13a to 11:53p
every 40 min
@ :13 :53 odd hours
:33 even hours



does not run



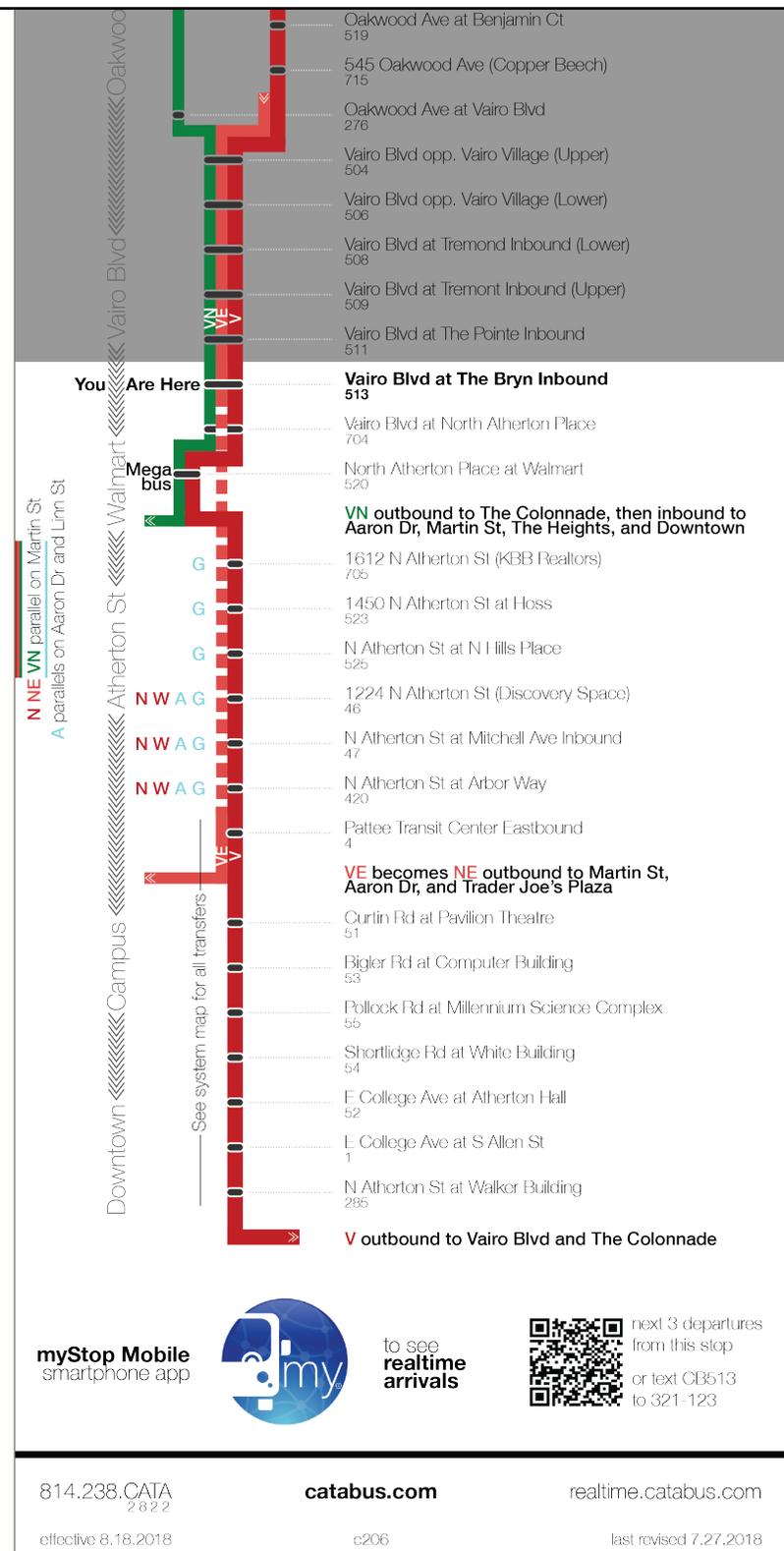
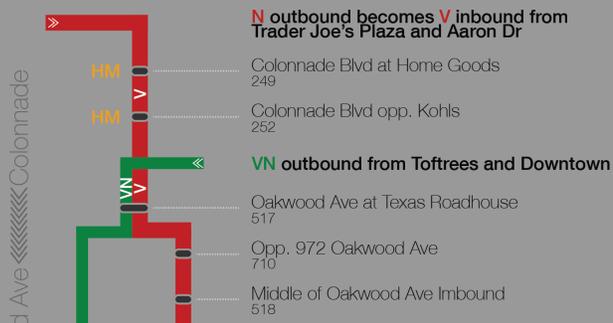
Sat

5:22p 6:22p &
7:22p to 2:52a
every 30 min
@ :22 :52

Sun

10:52a to 5:52p
every 60 min
@ :52

Please have exact fare ready before you board
Full Service: PSU Fall and Spring semesters only; catabus.com for details



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catabus.com

realtime.catabus.com

effective 8.18.2018

c206

last revised 7.27.2018



Curtin Rd at the Pavilion Theatre
stop 51

Weekdays

@ :approx time past the hour

V
Year-round

6:44a to 12:04a
every 40 min
@ :04 :44 even hrs
:24 odd hrs

+

7:24a to 10:44a
& **3:24p to 6:44p**
every 20 min
@ :04 :24 :44

R
Year-round

6:22a to 12:22a
every 40 min
@ :02 :42 odd hrs
:22 even hrs

+

7:02a to 10:22a
& **3:42p to 6:22p**
every 20 min
@ :02 :22 :42

N
Year-round

6:25a to 12:25a
every 40 min
@ :05 :45 odd hrs
:25 even hrs

+

7:05a to 10:25a
& **3:45p to 6:25p**
every 20 min
@ :05 :25 :45

W
Year-round

6:18a to 8:58p
every 40 min
@ :18 :58 even hrs
:38 odd hrs

+

8:58p to 11:58p
every 60 min
@ :58

HM
Year-round

6:46a to 12:06a
every 40 min
@ :06 :46 even hrs
:26 odd hrs

HC
Full Service

7:48a to 6:28p
every 40 min
@ :08 :48 odd hrs
:28 even hrs

HC UT do not run weekends

UT
Full Service

7:17a 7:52a 8:22a 8:57a 9:27a
10:02a 10:32a 11:07a 12:12p 12:42p
1:17p 1:47p 2:22p 2:52p 3:27p
3:57p 4:32p 5:02p 5:37p 6:07p

K
Year-round

7:27a to 9:27p
every 60 min
@ :27

A
Year-round

7:34a 8:34a
4:07p
5:07p 6:07p

A does not run weekends

G
Year-round

7:34a
12:05p
4:05p 5:05p

G does not run weekends

F
Year-round

7:39a 8:46a*
11:24a
3:59p 5:04p

*8:46a: no service outbound past W Whitehall Rd at CATA stop
F does not run weekends

S

6:55a 7:45a
4:15p 5:05p

S does not run weekends

RC VE NE WE weekday service from Pattee Transit Center
NV VN RP night and weekend service from downtown

Year-round

Weekends

V
Year-round

7:24a to 12:04a
every 40 min
@ :04 :44 even hours
:24 odd hours

R
Year-round

7:42a to 12:22a
every 40 min
@ :02 :42 odd hours
:22 even hours

N
Year-round

7:45a to 12:25a
every 40 min
@ :05 :45 odd hours
:25 even hours

W
Year-round

9:58a 11:08a
12:18p 1:28p 2:38p
3:48p 4:58p 6:08p

+

6:58p to 11:58p
every 60 min
@ :58

HM
Year-round

8:06a to 12:06a
every 60 min
@ :06

K
Year-round

Sat 7:27a 8:27a
12:27p 1:27p
4:27p 5:27p

Please have exact fare ready before you board
Full Service: PSU Fall and Spring semesters only; catabus.com for details



BL
Year-round

RL
Year-round

GL
Full Service

Free, frequent service around campus and downtown
and to West Campus, stadium parking, the hospital, and Innovation Park

See poster in shelter for map and frequencies from this stop

myStop Mobile
smartphone app



to see
realtime
arrivals



next 3 departures
from this stop
or text CB51
to 321-123

814.238.CATA
2822

catabus.com

realtime.catabus.com

effective 1.5.2019

c134

last revised 12.28.2018

NV VN RP night and weekend service from downtown

N Atherton St at N Hills Place Inbound
stop 525

@ approx time past the hour

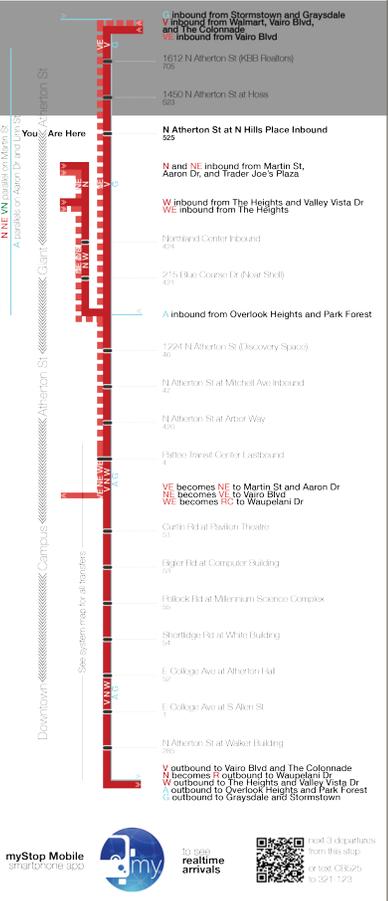
Weekdays

V Year round	6:39a to 11:59p every 40 min @ :19 :39 odd hrs :39 even hrs	+	7:19a to 10:39a 3:59p to 6:39p every 20 min @ :19 :39
VE Full Service	does not stop		
G Year round	7:28a 8:50a 1:27p 5:27p 6:27p		

Weekends

V Year round	7:19a to 11:59p every 40 min @ :19 odd hours :39 even hours
VE Full Service	does not run
G Year round	does not run

Please have exact fare ready before you board
Full Service: PSU Fall and Spring semesters only; catabus.com for details



North Atherton St at CVS Outbound
stop 8

@ approx time past the hour

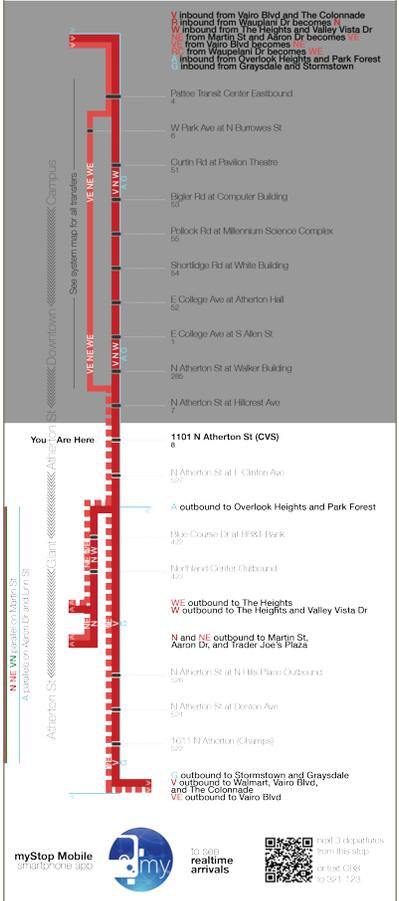
Weekdays

V Year round	7:01a to 12:21a every 40 min @ :01 :41 odd hrs :21 even hrs	+	7:41a to 11:01a 3:41p to 7:01p every 20 min @ :01 :21 :41
N Year round	6:41a to 12:41a every 40 min @ :01 :41 even hrs :21 odd hrs	+	7:21a to 10:41a 4:41p to 6:41p every 20 min @ :01 :21 :41
W Year round	6:37a to 8:37p every 40 min @ :17 :57 odd hrs :37 even hrs	+	9:21p to 12:21a every 60 min @ :21
A Year round	7:56a 8:56a 4:29p 5:29p 6:29p	G Year round	7:52a 12:23p 4:23p 5:23p
VE NE WE do not stop weekdays VE NE WE do not run weekends			

Weekends

V Year round	7:41a to 12:21a every 40 min @ :01 :41 odd hours :21 even hours
N Year round	8:01a to 12:41a every 40 min @ :01 :41 even hours :21 odd hours
W Year round	10:13a 11:23a 12:33p 1:43p 2:53p 4:03p 5:13p
	+
	6:21p to 12:21a every 60 min @ :21

Please have exact fare ready before you board
Full Service: PSU Fall and Spring semesters only; catabus.com for details



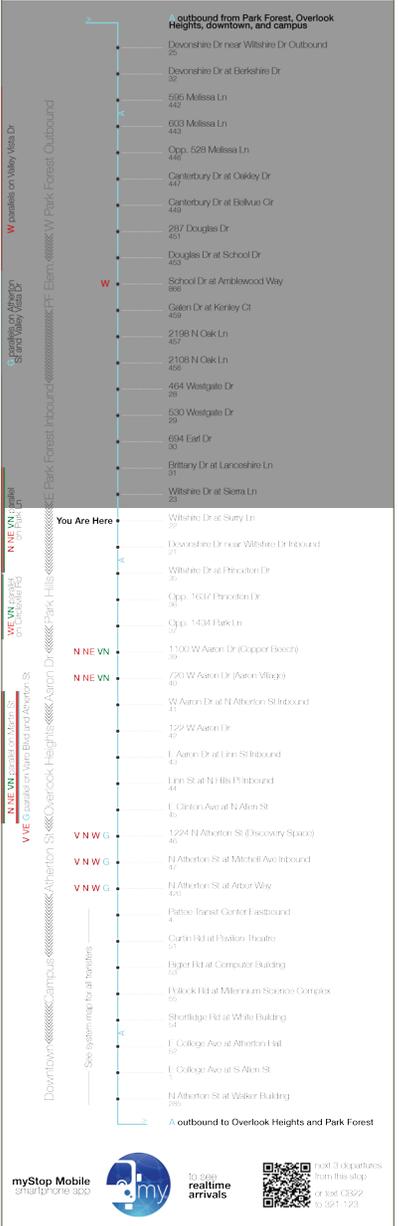
Wiltshire Dr at Surry Ln Inbound
stop 22

@ approx time past the hour

Weekdays

A Year round	7:17a 8:17a 9:17a 4:50p 5:50p 6:50p	A does not run weekends
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Please have exact fare ready before you board
Full Service: PSU Fall and Spring semesters only; catabus.com for details



Trader Joe's Plaza Inbound
stop 497

@ approx time past the hour

Weekdays

N Year-round
6:55a to 12:55a every 40 min @ :15 :35 even hrs + 7:35a to 10:55a every 20 min @ :15 :35 odd hrs

NE Full Service
7:44a to 7:24p every 20 min @ :04 :24 :44 & 8:04p 8:44p 9:24p

HM Year-round
6:42a to 11:22p every 40 min @ :07 :47 even hrs + 12:02a 12:42a Fri nights during full service @ :22 odd hrs

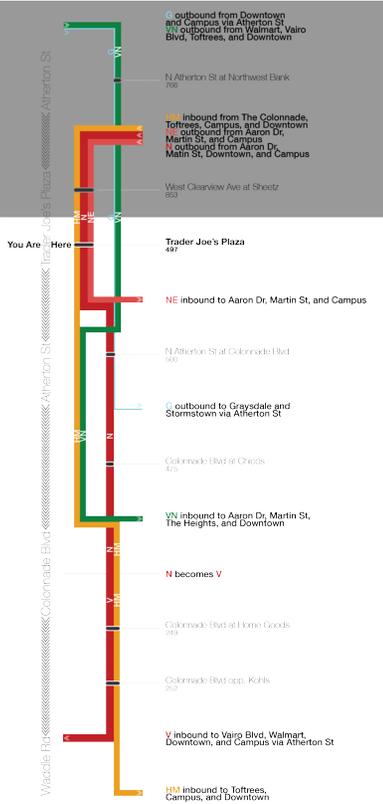
Weekends

N Year-round
8:15a to 12:55a every 40 min @ :15 :35 even hours + :35 odd hours

NE Full Service
does not run

HM Year-round
7:42a to 11:42p every 60 min @ :32 + 12:42a Sat nights during full service

Please have exact fare ready before you board
Full Service: PSU Fall and Spring semesters only; catabus.com for details



myStop Mobile 814.238.CATA 4142
to see realtime arrivals
QR code
text 3-1-4 parkers to this stop or text C3499 to 321-123

N Atherton St at Chick-Fil-A Inbound
stop 499

@ approx time past the hour

Weekdays

N Year-round
6:46a to 12:06a every 40 min @ :06 :46 even hrs + 6:46a to 10:06a & 3:26p to 6:06p every 20 min @ :06 :26 :46

HM Year-round
7:13a to 12:33a every 40 min @ :13 :53 odd hours

VN M-Th Year-round
5:38p to 12:38a* every 60 min @ :38

G Year-round
7:25a 8:47a 1:24p 5:24p 6:24p

F Year-round
5:38p 6:38a & 7:38p to 3:08a* every 30 min @ :08 :38

G does not run weekends

Weekends

N Year-round
7:26a to 12:06a every 40 min @ :06 :46 even hours + :26 odd hours

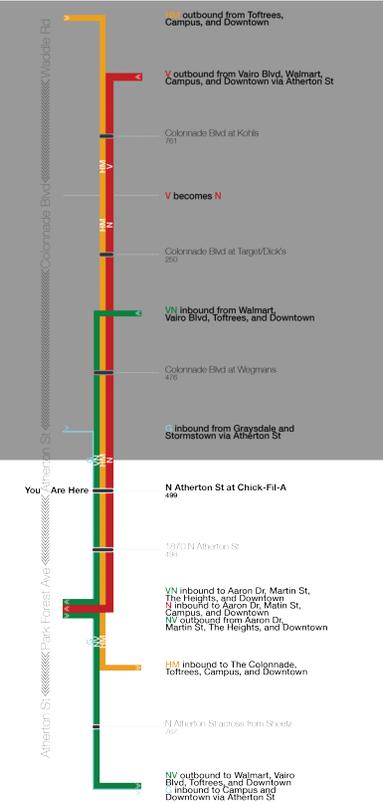
HM Year-round
8:33a to 12:33a every 60 min @ :33

VN Full Service
7:38p to 3:08a* every 30 min @ :08 :38

Sat 11:08a to 6:08p* every 60 min @ :08

Sun 11:08a to 6:08p* every 60 min @ :08

Please have exact fare ready before you board
Full Service: PSU Fall and Spring semesters only; catabus.com for details



myStop Mobile 814.238.CATA 4142
to see realtime arrivals
QR code
text 3-1-4 parkers to this stop or text C3499 to 321-123

Pollock Rd at the Millennium Science Complex
stop 55

@ approx time past the hour

Weekdays

V Year-round
6:48a to 12:08a every 40 min @ :08 :48 even hrs + 7:28a to 10:48a & 3:28p to 6:48p every 20 min @ :08 :28 :48

R Year-round
6:26a to 12:26a every 40 min @ :06 :46 odd hrs + 7:06a to 10:26a & 3:46p to 6:26p every 20 min @ :06 :26 :46

N Year-round
6:29a to 12:29a every 40 min @ :09 :49 odd hrs + 7:09a to 10:29a & 3:49p to 6:29p every 20 min @ :09 :29 :49

W Year-round
6:22a to 9:02p every 40 min @ :02 :42 odd hrs + 9:02p to 12:02a every 60 min @ :02

K Year-round
7:31a to 8:31p every 60 min @ :31

A Year-round
7:38a 8:38a 4:11p 5:11p 6:11p

G Year-round
7:38a 12:03p 4:03p 5:03p

F Year-round
7:43a 8:50a* 11:28a 4:03p 5:08p

S Year-round
6:59a 7:49a 4:19p 5:09p

A does not run weekends
G does not run weekends
F does not run weekends
S does not run weekends

Weekends

V Year-round
7:28a to 12:08a every 40 min @ :08 :48 even hours + :28 odd hours

R Year-round
7:46a to 12:26a every 40 min @ :06 :46 odd hours + :26 even hours

N Year-round
7:49a to 12:29a every 40 min @ :09 :49 odd hours + :29 even hours

W Year-round
10:02a 11:12a 12:22p 1:32p 2:42p 3:52p 5:02p 6:12p + 7:02p to 12:02a every 60 min @ :02

K Sat 7:31a 8:31a 12:31p 1:31p 4:31p 5:31p

Please have exact fare ready before you board
Full Service: PSU Fall and Spring semesters only; catabus.com for details



Free, frequent service around campus and downtown and to stadium parking and Hastings Rd

See poster in shelter for map and frequencies from this stop

myStop Mobile 814.238.CATA 4142
to see realtime arrivals
QR code
text 3-1-4 parkers to this stop or text C3499 to 321-123

OPPORTUNITIES & POSSIBILITIES

Explore using electronic paper displays as stop info panels,¹⁰⁷ allowing for arrival countdowns and real-time locations of buses within the corridor. Arrival countdowns would allow for simplified frequency and span information.

routes as transit lines when transit is selected in Google Maps.

Other Notes

Stickers on bus stop signs with frequent route icons could establish constant corridors in the minds of riders and non-riders, as the stickers on Campus Service bus stop signs do currently.

Upgrade bus location trackers to allow bus locations on apps to move in real time, like they do on the Campus Shuttle real time tracking. This would remove any guessing necessary to determine whether a bus is taking a break at a bus stop or stopped at a traffic light; or whether the bus is moving but the location tracker has not updated, increasing rider satisfaction.

If possible, share shapefile data with Google Maps Transit for all non-peak-only bus routes to show all these

¹⁰⁷ ["Papercast," Papercast, 2019.](#)