

Vine Vision

Summary

Since the beginning of its operation the Vine has experienced several service redesigns. The most recent occurred in December of 2012. Despite the changes to service levels and route alignments the overall structure of the transit network has remained unchanged. The planning principles applied to the Vine network in the past have been generic and do not always meet the unique needs of the City of Napa or the County as a whole. This comprehensive operational analysis (COA), provides an opportunity to reevaluate the way that the Napa Valley Transportation Authority (NVTA) prioritizes service based on the perceived needs and wants of the Napa Valley.

The Current State of Transit in Napa Valley

Many of the riders using the local service in Napa are using it because they do not have another option. The propensity analysis completed in the Market Assessment provided a snap shot of a “typical” Vine rider. Two of the most prominent attributes were low income and “did not own a car”. Even taken separately these two attributes implicate a reliance on transit as a primary form of mobility.

The service operated by the Vine is applied as a one size fits all approach using generic transit planning techniques. Given this, and a few other factors, it is not surprising the Vine has experienced a decline in ridership on local service year-over-year for the past three years. For local trips in the City of Napa the Vine cannot compete with a car in directness and flexibility. The healthy job market and the proliferation of easy access car loans have increased the number of vehicles purchased by low income individuals. The emergency of transportation network companies (TNCs) has also influenced transit ridership. These factors, combined directly affect transit ridership.

A recent study completed by the UCLA Institute of Transportation Studies (ITS) researched the ridership decline in the LA Metro area. They found that the largest contributing factor to transit ridership decline has been the growth in vehicle access, especially among the subsets of the population that are among the heaviest transit users. While the study was applied directly to Southern California, exact parallels can be drawn between the findings of that study and those in the Market Assessment portion of this COA.

The propensity analysis found that a typical Vine rider, in addition to being low income and car-less, is a person of color, does not speak English at home, and lives with three or more workers in the same home. The authors of the UCLA study contend the primary determinants of transit use are income, race, age, nativity, and car ownership; with car ownership being the largest contributing factor per the study’s results. The desire to use one’s car over transit in Napa County can be summed up by one of the respondents to the COA rider/resident survey, “My car is more luxurious than my home, why would I want to ride a bus...”

What is the Vine's Role in Napa County?

Ask multiple people in Napa County what they think of the Vine and you will get responses that range from "It's a waste of tax dollars, no one ever rides it" on the negative end of the spectrum to "I use it every day, I don't know what I would do without it" on the most positive end, and everything in between. You may even get the response of, "I have never even heard of it." From an agency perspective the role of the Vine in Napa County is to provide high-quality transit services in the most efficient manner possible. The service the Vine provides should be safe, comfortable, and reliable; all the while meeting the needs of an evolving and diverse community. The aforementioned role is taken directly from the goals section in the NVRTA's most recent short range transit plan (SRTP). Despite each goal having an objective with measurable standards attached to it; what "high quality", "safe", "comfortable", "reliable", and "efficient" mean in the public's eye is highly subjective.

It is very rare that a transit system can meet the exact needs of every resident it is intended to serve. The current local service in the City of Napa primarily appeals to a single market, a market that is in most cases dependent on it for one reason or another. Per the ITS study this is also a market that happens to be declining in number with each year. As more and more individuals purchase automobiles and the growing emergence of alternative transportation options, the less likely individuals are to use transit for any of their trips. The solution to the ridership decline, as suggested by the ITS study, is not to win back old riders but focus on creating transit services that attract new riders.

Surveys of riders and residents completed for both the Express Bus Study and this COA asked what residents priorities were when it came to improving transit, and solicited ideas that would entice them to ride or ride more. The top two improvements for both surveys were greater frequency and more direct service (shorter trip times).

Unfortunately the current Vine system is not structured in a way that facilitates direct and frequent service. The local service in the City of Napa is a coverage based network, meaning routes are laid out in a way that covers the most geographic area of the City. This network design affords residents with a bus route in close proximity to where they live or work but rarely provides a direct or frequent trip. Many suburban transit operations are designed this way in an attempt to serve the greatest number of people with the least number of resources. Providing transit in this manner leads to minimal service everywhere instead of quality service in strategic locations. The current state of transit operations in the City of Napa has created the situations listed below:

- In order to achieve the fastest trip, one way routes require passengers to make multiple transfers causing the use of transit to be a confusing and stressful endeavor.
- Circuitous routes consisting of long one way loops result in long travel times in at least one direction of travel.
- Routes are more often than not indirect in an attempt to cover the most geographic area.
- Reliance on timed transfers leads to uncertainty for passengers, especially with increased and growing congestion in Napa.

- Service focused during traditional work hours does not match the work schedule of the service industry, a major sector of Napa’s economy.
- Given the low densities or inherent lack of demand in portions of the Vine service area, the Vine currently over serves some areas.

These situations are obviously detrimental to operationally efficient and desirable transit service.

What *Should* the Vine’s Role be in Napa County?

Similar to asking “what *is...*” the question “what *should...*” results in a myriad of answers. Taking the responses to the COA survey and Express Bus Survey, using the findings in the Market Assessment and the Technical Analysis, NVTA planning staff have been able to create a list of identified needs. These needs reflect what the general public would like from the transit system, as well as NVTA staffs’ proposals to improve operational efficiency. The ultimate goal is to address each need resulting in a system design that makes the public agree the Vine is a high-quality (safe, comfortable, and reliable) transit services operating in the most efficient manner possible.

Table 2 shows a list of seven identified needs and the solutions that apply to each need. This list is composed of the highest ranked needs as established in the Express Bus Study survey, the COA survey, and the findings in the in the Market Assessment and Technical Analysis. Each solution has a quantitative threshold/marker. Taking a quantitative approach when entering the service planning portion of the COA allows staff to be more objective rather than subjective when allocating service. The list of solutions and their quantitative thresholds/markers can be found in Table 1.

Solution	Threshold/Marker
Consolidate Routes	Local routes should be at a minimum of a quarter mile from each other and not overlap, except on major corridors
Routes should not form a "loop"	A route should have a different and distinguishable start and end point.
Create bi-direction service	Trip lengths taken on a single route should be equitable in both directions.
Eliminate unproductive service	Services not meeting standards in total passengers, passengers, per revenue hour, and subsidy per passenger shall be considered for elimination.
Use on-demand service to facilitate connectivity between services.	Only apply in locations as a first, last mile solution or to fill service gap caused by a route being eliminated.
Align schedule span and frequency with peak commute times and work hours.	Align service frequency and span with patterns shown in the travel behavior study.
Create schedules that reflect seasonal changes in traffic patterns.	Schedules shall be released during peak tourism season, the start of the school year, and the summer months
Routes begin and end at locations frequented by the public	Shopping centers, medical facilities, or central business districts
Routes begin and end where timed transfers can occur between services	Park and rides or dedicated transit facilities

Table 2: Identified Needs and Solutions

Need	Solutions
More direct service	Consolidate routes. Routes should not form a “loop” . Create bi-directional service. Eliminate unproductive services.
More frequent service	Consolidate routes. Create bi-directional service. Eliminate unproductive services. Use on-demand service to facilitate connectivity between services.
Later service	Consolidate routes. Eliminate unproductive services. Align schedule span and frequency with peak commute times and work hours.
Transit in closer proximity	Eliminate unproductive services. Use on-demand service to facilitate connectivity between services. Align schedules with known travel patterns not traditional work hours. Use on-demand service to facilitate connectivity between services.
Strong anchor points	Routes begin and end at locations frequented by the public Create bi-directional service Routes begin and end where timed transfers can occur between services
Improved connections between services	Consolidate routes. Eliminate unproductive services. Align schedule span and frequency with peak commute times and work hours. Routes begin and/or end at locations frequented by the public Routes begin and/or end where timed transfers can occur between services Use on-demand service to facilitate connectivity between services.
More reliable service	Consolidate routes. Eliminate unproductive services. Align schedule span and frequency with peak commute times and work hours. Create consistent spacing between stops. Where feasible establish timepoints at stops with high number of boardings. Use on-demand service to facilitate connectivity between services. Create schedules that reflect seasonal changes in traffic patterns.

Next Steps

NVTA staff will review each route and how it does or does not satisfy the identified needs. Solutions will then be applied to each route. A line by line recommendation will be created for each route. Once the line by line recommendations are completed a holistic review of the routes will take place to ensure the newly designed system is able to operate cohesively. During this process, route structures could go through a range of changes. Changes could include: complete rerouting, elimination, frequency increase, replacement with on-demand service, or consolidation with another route.

Recommendations will be presented to the public, the Board, the Consumer Advocacy Committee (CAC), and the Paratransit Coordinating Council (PCC). Each group will have the opportunity to review the

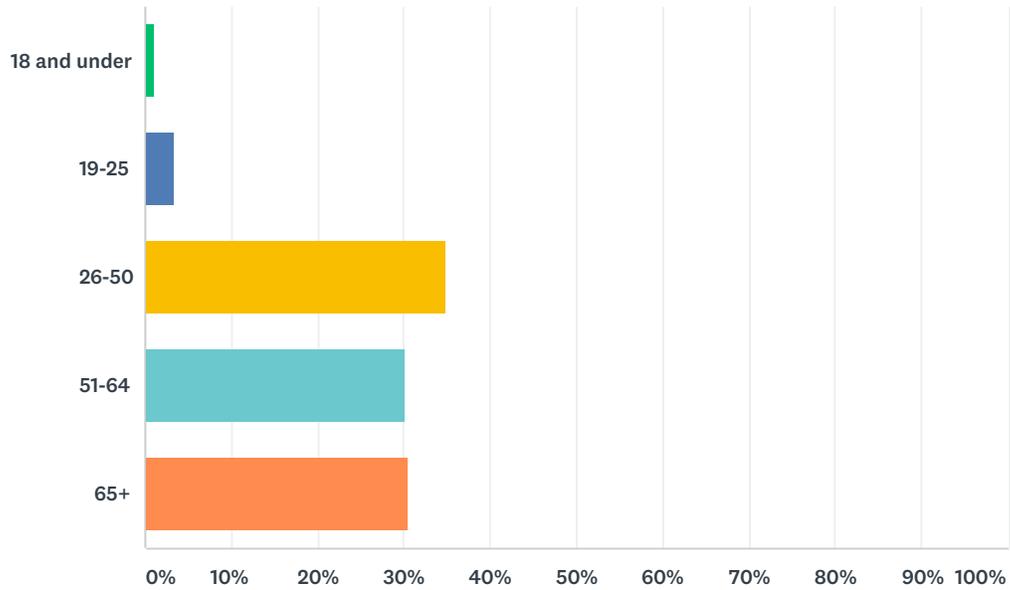
redesign and provide comments. NVTA staff will take those comments and apply them where feasible. This “second draft” will result in a two phase service delivery plan. Phase One will provide short-term recommendations for service delivery. The focus of the short-term phase will be to conform with NVTA’s existing capital and financial resources which could involve reallocating resources from one route to another or deploying new technologies that improve cost efficiencies. Capital resources could be used in cases where bus stops need to be relocated or installed. The changes to the system associated with Phase One will be implemented within a year of its adoption by the NVTA Board.

Phase Two will provide a long-term recommendations for service delivery. Long-term recommendations will consist of changes to create the most ideal transit system in Napa but are currently infeasible due to financial or capital constraints. These recommendations should become feasible in the future as vehicles are added to the Vine fleet and new revenue streams are realized. Changes that will be considered as part of Phase Two could include changes such as: expanded weekend service, late night service, and even service boundary expansions. These more extensive changes will also be paired with the organic growth of the Vine. Ensuring the Vine continues to support and enhance the economic and social growth of Napa will be paramount over the next ten years and beyond.

Appendix: COA Survey Results

Q1 1. What is your age range?

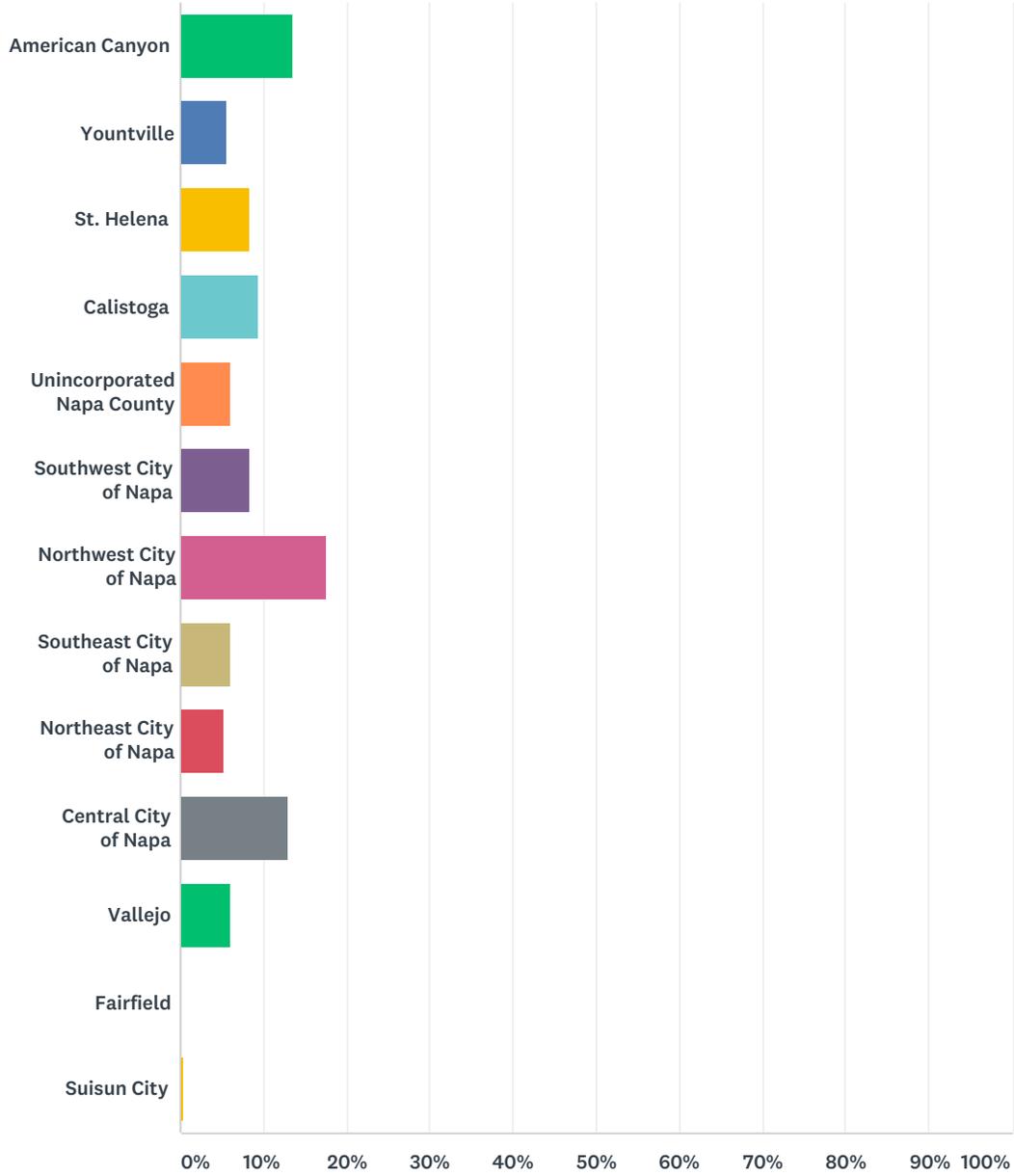
Answered: 272 Skipped: 0



ANSWER CHOICES	RESPONSES	
18 and under	1.10%	3
19-25	3.31%	9
26-50	34.93%	95
51-64	30.15%	82
65+	30.51%	83
TOTAL		272

Q2 1. Where do you live?

Answered: 263 Skipped: 9



ANSWER CHOICES	RESPONSES	
American Canyon	13.69%	36
Yountville	5.70%	15
St. Helena	8.37%	22
Calistoga	9.51%	25
Unincorporated Napa County	6.08%	16
Southwest City of Napa	8.37%	22

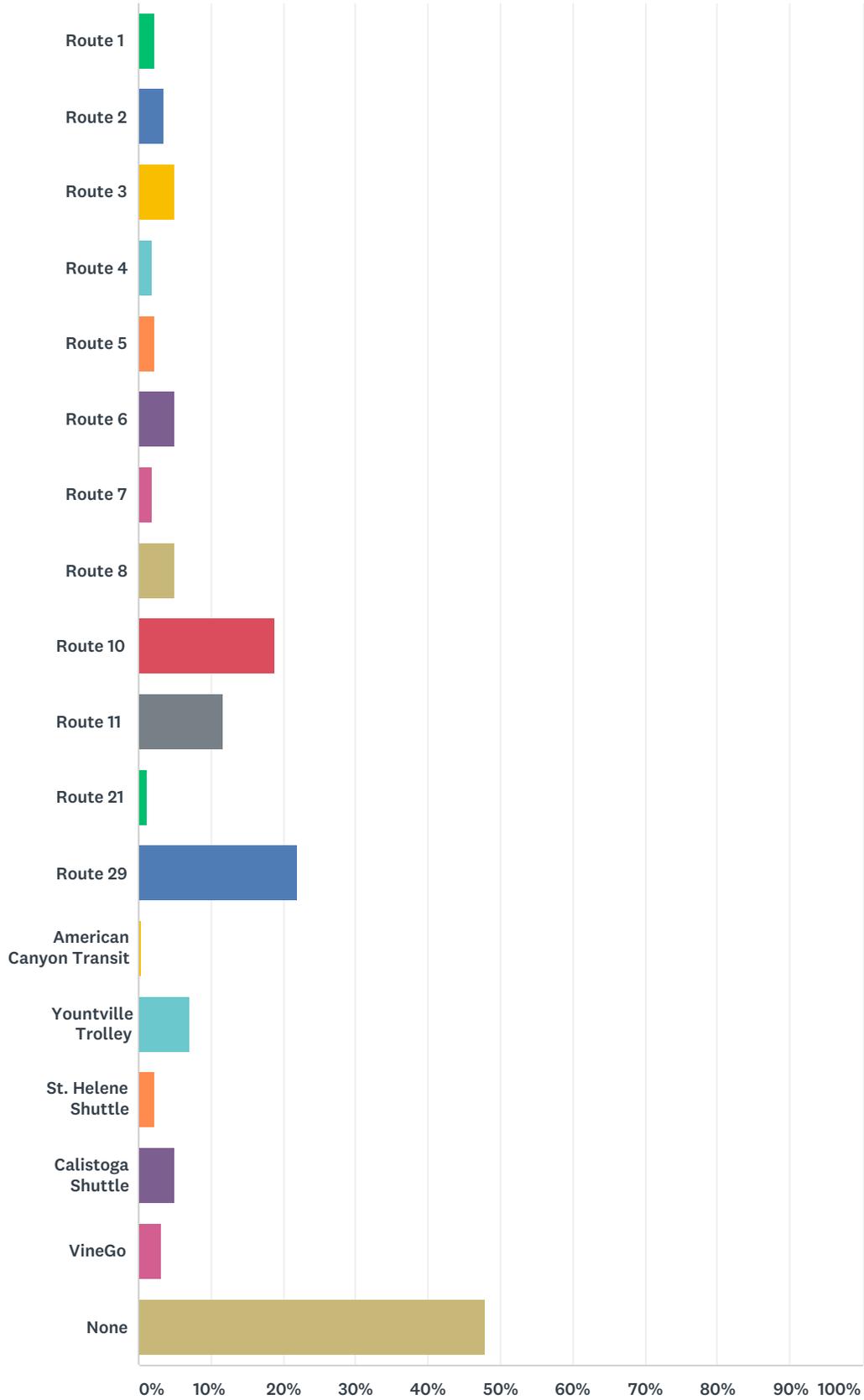
COA 2017

Northwest City of Napa	17.49%	46
Southeast City of Napa	6.08%	16
Northeast City of Napa	5.32%	14
Central City of Napa	12.93%	34
Vallejo	6.08%	16
Fairfield	0.00%	0
Suisun City	0.38%	1
TOTAL		263

Q3 What Vine service(s) do you currently use?

Answered: 223 Skipped: 49

COA 2017



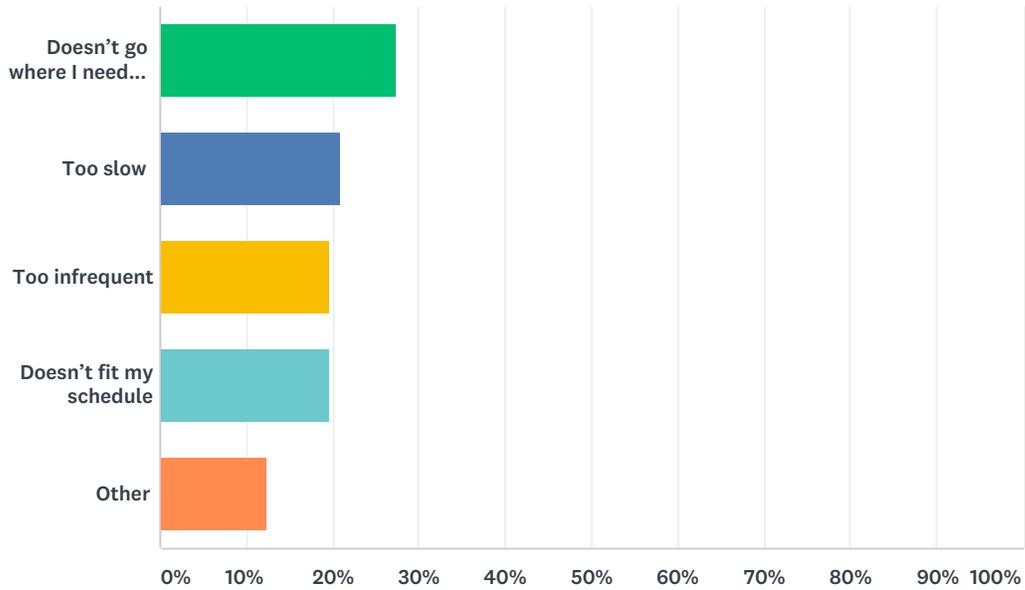
ANSWER CHOICES	RESPONSES
Route 1	2.24%

COA 2017

Route 2	3.59%	8
Route 3	4.93%	11
Route 4	1.79%	4
Route 5	2.24%	5
Route 6	4.93%	11
Route 7	1.79%	4
Route 8	4.93%	11
Route 10	18.83%	42
Route 11	11.66%	26
Route 21	1.35%	3
Route 29	21.97%	49
American Canyon Transit	0.45%	1
Yountville Trolley	7.17%	16
St. Helene Shuttle	2.24%	5
Calistoga Shuttle	4.93%	11
VineGo	3.14%	7
None	47.98%	107
Total Respondents: 223		

Q4 If you answered “none” to Question 3...

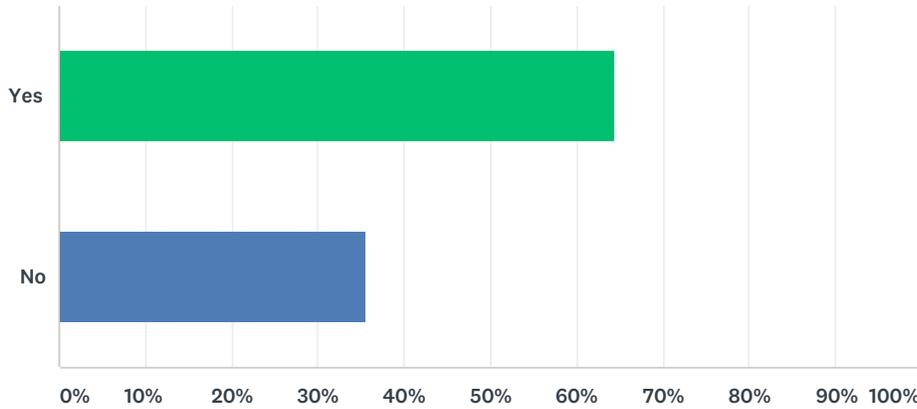
Answered: 153 Skipped: 119



ANSWER CHOICES	RESPONSES	
Doesn't go where I need it to	27.45%	42
Too slow	20.92%	32
Too infrequent	19.61%	30
Doesn't fit my schedule	19.61%	30
Other	12.42%	19
TOTAL		153

Q5 Would you be willing to travel farther from your house to a bus stop if the service was more frequent and/or direct? e.g. Walk, bike, park & ride.

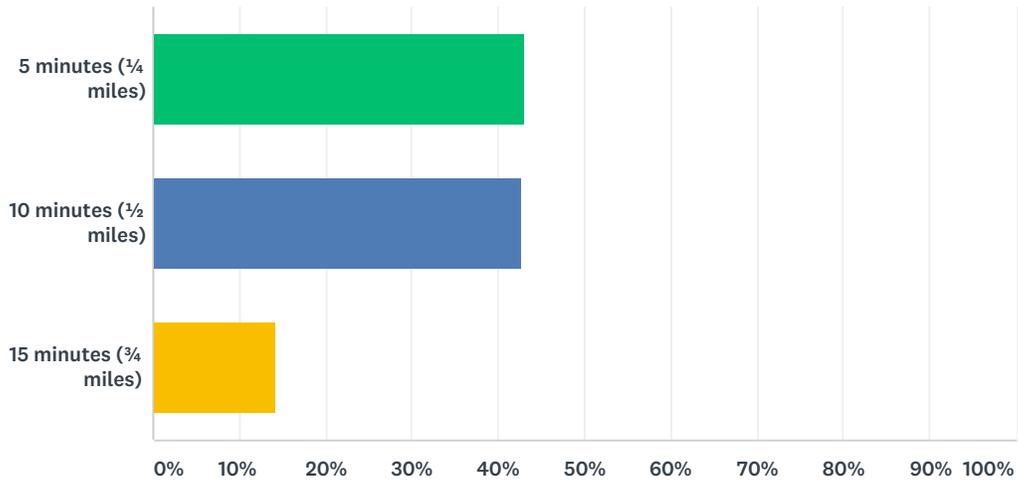
Answered: 270 Skipped: 2



ANSWER CHOICES	RESPONSES	
Yes	64.44%	174
No	35.56%	96
TOTAL		270

Q6 If you answered "yes" to Question 5 how far?

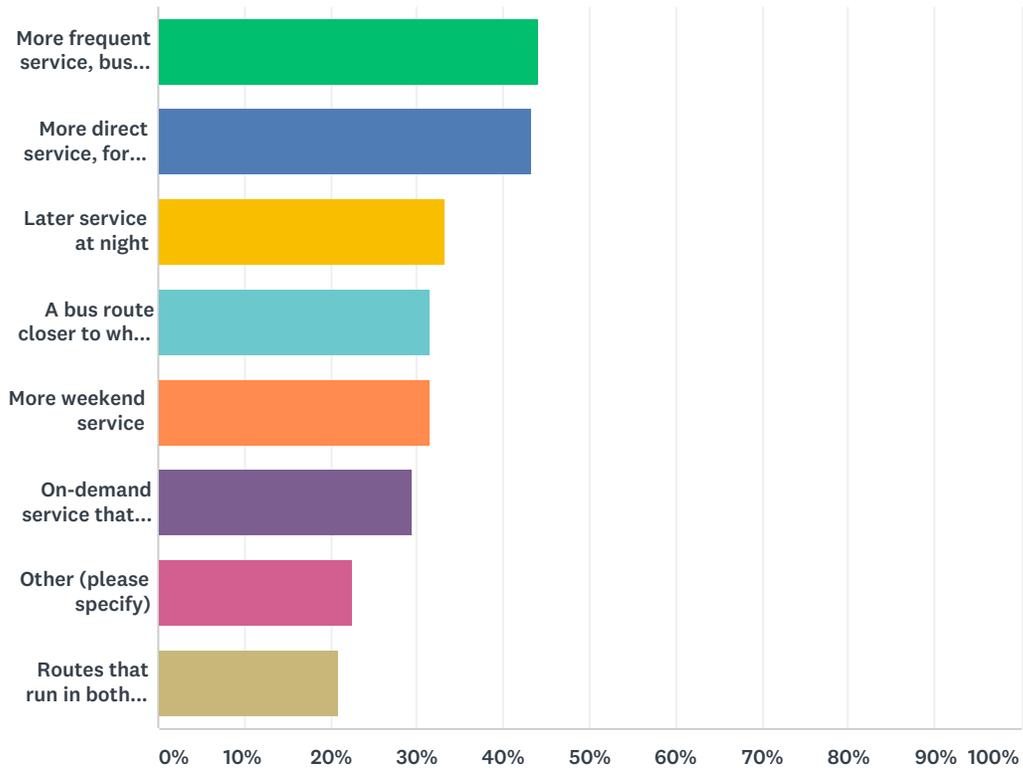
Answered: 190 Skipped: 82



ANSWER CHOICES	RESPONSES	
5 minutes (1/4 miles)	43.16%	82
10 minutes (1/2 miles)	42.63%	81
15 minutes (3/4 miles)	14.21%	27
TOTAL		190

Q7 What THREE improvements would make the Vine better for you?

Answered: 240 Skipped: 32



ANSWER CHOICES	RESPONSES	
More frequent service, bus runs more often	44.17%	106
More direct service, for example less loops and turns	43.33%	104
Later service at night	33.33%	80
A bus route closer to where I live and want to go	31.67%	76
More weekend service	31.67%	76
On-demand service that picks me up at home and takes me to a regional route	29.58%	71
Other (please specify)	22.50%	54
Routes that run in both directions along their path of travel	20.83%	50
Total Respondents: 240		

Q8 Please provide any additional comments here

Answered: 109 Skipped: 163