

Greater Annapolis Area Transportation Study: Results of Two Surveys

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Executive Summary

The Annapolis Transportation Study Group enlisted the assistance of the Center for the Study of Local Issues at Anne Arundel Community College to investigate the attitudes and behaviors of residents and employees in the greater Annapolis area regarding transportation. Specifically, two surveys were devised: one of residents within the zip codes included in the study area, the second of employees working in downtown Annapolis. The first survey (hereafter “resident survey” was conducted by telephone in November 2003; the second (hereafter “employee survey”) was self-administered as questionnaires were provided to employers who then requested that their employees fill them out during spring 2003. Overall, 356 completed questionnaires were obtained in the first case; 725 in the second.

Results

Demographic Backgrounds of Respondents

Residents:

Zipcode: Most came from 21401 (63%) or 21403 (35%).

Employment situation: Almost half (49%) worked full-time, with another 11 percent working part-time. Twenty-two percent were retired. Occupationally, 24 percent were in sales, 53 percent in professional or management, and 11 percent were clerical. Their workplace locations were concentrated first in Annapolis (35%) and elsewhere in Anne Arundel County (29%). Over one-third (36%) worked outside the county, especially in and around D.C. and Baltimore City.

Age: The largest age group was those between 34-59 years old (34%), followed equally by those 30 to 44 and 60 or more (both 27%). Only eleven percent was between 18 and 29.

Children: The largest concentration of children was aged between zero and five (29% having a child in that age range). There were three other age categories for children with similar percentages (between 8 and 12%).

Education: Respondents were generally well educated, as 32 percent had done some postgraduate work; another 28 percent finished a four-year degree, and 26 percent had at least some college.

Income: The modal income category was the \$50,000 to \$75,000 range (23%) although a large percentage made at least \$100,000 (29%). Over one-quarter (29%) of the sample earned \$50,000 or less.

Race: Most respondents were non-Hispanic whites (85%) or African-American (8%).

Marital Status: Sixty percent were married, 19 percent were single and ten percent were divorced or separated.

Housing Situation: Seventy percent lived in a single-family detached house, while an equal percent lived in a townhouse or an apartment (11%). Seven percent were in a condominium.

Gender: Most respondents were female (59%).

Employees:

Zip code: Many came from Anne Arundel County (49%), with a large concentration in two zip codes – 21401 (16%) and 21403 (15%).

Employment situation: Full-time employees constituted 92 percent of the sample, with the other eight percent being part-time workers. There were far fewer respondents employed in sales (only 6% compared to 24% for residents), and many more employed in the clerical/administrative field (24% vs. 11%). A very substantial number of workers in this category were women. There were fewer professionals and managers (43% vs. 53%); women were relatively underrepresented in this category. The category “technical, skilled worker” was claimed by 16 percent (it was not included in the resident survey).

Nearly three-quarters (71%) of respondents were employed by government, followed by legal (7%) and retail (6%), with a disproportionate number of these being women. Those working for government worked for the State (41%), Anne Arundel County (16%) or the City of Annapolis (4%).

Age: The largest age group was those between 34-59 years old (46% vs. 34% for residents), followed mostly by those 30 to 44 (31%). Lesser percentages were younger (13%) or older (10%).

Children: The largest concentration of children was aged between zero and five (30% having a child in that age range). There were three other age categories for children with similar percentages (between 10% and 17%).

Education: Respondents were generally *not* as well educated as residents, with only 26 percent having done some postgraduate work (vs. 32% for residents), another 28 percent have finished a four-year degree, and 26 percent having at least some college.

Income: There were few differences between employees and residents regarding income. The modal income category was also the \$50,000 to \$75,000 range (25%) although a large percentage made at least \$100,000 (28%). Over one-quarter (28%) of the sample earned \$50,000 or less.

Race: Most respondents were non-Hispanic whites (87%) or African-American (9%).

Marital Status: Sixty-one percent were married, 23 percent were single and 12 percent were divorced or separated.

Housing Situation: Seventy-one percent lived in a single-family detached house, while 16 percent lived in a townhouse and nine percent in an apartment. Only three percent were in a condominium.

Gender: Most respondents were female (66%).

Driving and Parking Habits

Residents drove primarily around ten to fifteen thousand miles a year (modal category: 27%), although about equal numbers drove less (36%) or more (34%). (This question was not asked of employees). Both employees and residents (75%) drove less than 30 miles to work, although residents experienced a longer travel *times* than did employees. The later also claimed that the time from the workplace to home was longer than the commute from home to work.

Large majorities of both employees and residents thought that their travel times were “reasonable” (81, 73%) although the longer the commute (especially 45 minutes or more), the more likely respondents were to say that their commutes were “too long.”

Employees were asked what routes and exits they used to access Annapolis. Preferred approaches include the Severn River Bridge (27%), the Naval Academy Bridge (18%), Route 50 coming from the west (22%) and east (17%), and Route 97 (23%). Sixteen percent used Spa Bridge, and only nine percent traveled up Old Solomon’s Island Road from South County.

Almost all residents drove to work at least partly (93%), with 94 percent of those driving alone. Nearly none (5%) drove to an outlying lot and took a shuttle to work. Employees were much more likely to do the later, with 17 percent parking at an interceptor and using the shuttle to get to their offices.

Employees were asked about their parking habits. A majority (54%) parked within one block of their worksites. Equal percentages (17%) either parked either within one and three blocks or at an outlying lot and took a shuttle to work. Only five percent parked at metered parking, while eight percent parked at a non-metered spot on the street.

Arrival and Departure Times

Employees were more likely to arrive to work at peak hours than were residents. There were clear spikes at 7:30 a.m., 8:00 a.m. and 8:30 a.m. Three-quarters of all employees arrived between 7:30 a.m. and 9:00 a.m.

However concentrated arrival times may seem, departure times were even more concentrated. Between 3:30 p.m. and 5:00 p.m., 83 percent of all employees left work.

Not surprisingly, these limited periods of arrival and departure had attitudinal correlates. Those arriving at peak hours were more likely to be concerned about traffic congestion, while latecomers were less concerned with congestion and more concerned with finding appropriate parking. Latecomers were more likely to pay for parking than were peak hour commuters. In sum, latecomers were rewarded for their unwillingness to participate in the rush hour congestion

by having a harder time parking. This situation would certainly not be likely to induce other employees to vary their arrival times.

Satisfaction with Current Arrangements

Residents were generally quite content with their driving situations, as 88 percent thought them to be excellent or good.

The employee survey asked about commuters' satisfaction with various aspects of their current arrangements such as the travel time, the cost, convenience, comfort and safety of their commutes. Under 20 percent chose the category "not very satisfied" with *any* aspect other than "having others with you on your commute to work (if ride-sharing or using public transportation)," (27% said "not very satisfied"). The highest percentages saying "very satisfied" were for cost (56%) and comfort (58%).

Both surveys asked respondents to identify the most important factor shaping their choice of transportation modes. Between 85 and 95 percent said either time or convenience. For example, 46 percent of employees said time, while 36 percent chose convenience.

Those employees who expressed the greatest satisfaction with travel time were less likely to focus on time, and instead highlighted convenience. Those less happy with travel time were more likely to underscore the time element. This finding suggests that it may be possible to approach those whose travel times are long and present them with a time saving, but less convenient, alternative such as frequent shuttles and less time looking for parking if willing to park at an outlying lot.

Problems with Commuting

The employee survey focused on identifying possible problems with respondents' commuting patterns that *chose to travel by car*. Thus, respondents were asked to say how much of a problem aspects of their commutes such as travel time, congestion, road quality, parking, costs and the like.

Looking at the percentages of respondents who said that an item was a "medium" or "large" problem, highway (50%) and local road congestion (52%) were the biggest preoccupations. There was also significant concern about "not knowing about traffic tie-ups or construction" (48%).

A set of parking issues offered a specific pattern: respondents were likely to claim that parking was not a problem at all, or a large problem, with few choosing the middle answer categories. Thus, 52 percent said that they had no problem with "finding a parking space at your workplace" but 24 percent said this was a large problem. Only 13 percent said that this issue was a small problem and 11 percent identified it as a medium problem. The same pattern was true for the "distance between the parking lot and your office" (60% not a problem, 15% a large problem)

and the “cost of parking” (77% and 16%). This underlines the fact that while parking is taken for granted by a large number of commuters, it is a noteworthy problem for a minority of others.

Further analysis of these responses showed that the identification of congestion as a major problem was more likely as travel time increased. Only 12 percent of those traveling less than 30 minutes said that congestion was a large problem, compared to 30 percent of those traveling longer. Similarly, 25 percent of those traveling 30 minutes or more said that travel time was a problem, compared to only two percent of those traveling under 30 minutes.

Residents, when asked to characterize traffic conditions as excellent, good, fair or poor were not likely to emphasize the positive elements, as 67 percent said fair or poor. Residents identified “less congestion” along with “road improvements” as the one thing that could most improve their commutes, with smaller percentages saying improve public transportation (14%) or carpooling (3%).

Cost of Car Usage

Employees were asked to estimate the cost of using their cars on a monthly basis. The median estimated cost was \$300. An analysis of travel time by cost revealed that there were significant differences in respondents’ estimates of cost. Twenty-one percent of those traveling over 30 minutes said that they spent over \$600 a month, compared to only eight percent of those traveling 30 minutes or less.

Employees Use of the Car during the Work Day

The report focused special attention on issues that would likely have a disproportionate impact on any proposals for altering the current transportation system. One of these issues was the pattern of car usage during the day. This issue was important since any scheme emphasizing interceptor lots would be dependent on having a substantial proportion of the respondents willing to leave their cars parked at some distance from their workplaces. If respondents needed frequent mid-day access to their cars, an interceptor system would probably not be well received.

The analysis revealed that those most likely to use their cars during the day had the following demographic characteristics:

- ✍ ✍ Higher socio-economic status (higher income, education and job status);
- ✍ ✍ Shorter travel distance;
- ✍ ✍ Park close to work;
- ✍ ✍ Not previous users of public transportation.

In short, as employees have easier access to their cars, they are more likely to use them. Moreover, as requirements of their jobs oblige them to attend offsite meetings, mid-day car use is more frequent. Those with shorter distances between home and work might also find it handy to run some quick errands or even go home for lunch during the day.

The analysis also evaluated whether there were any attitudinal variables associated with mid-day car usage. Findings include:

- ✍️ Those less satisfied with the time, convenience and personal comfort of their current commuting arrangements were less inclined to use their cars during the day;
- ✍️ Those less satisfied with the distance between the workplace and the parking lot were less likely to use their cars; and,
- ✍️ Those less likely to use their vehicles placed less emphasis on running errands and were generally more open to the use of interceptors and shuttles.

The findings from the demographic and attitudinal analysis stimulated the hypothesis: receptivity to non mid-day use was due to an increased likelihood that such respondents were already using interceptors/shuttles. It was found that those not using their cars mid-day were three times more likely to already use interceptors.

An open-ended question asked respondents to specify why they might use cars during the day: 52 percent said to attend work related meetings and appointments. Errands were cited by another 33 percent.

Those who might be persuaded to use the interceptor lots therefore seem to fall into this profile:

- ✍️ Lack professional justification for having their cars in close proximity
- ✍️ Have a minimum of errands that could be done in a short drive from the workplace, possibly due to extended travel distance (can't go home for lunch, do grocery shopping);
- ✍️ Are particularly cost sensitive, and would be more likely to respond to low cost/free lots combined with other improvements to the operation of the lots/shuttle system (more frequent shuttles, better lighting/security at the lots, better shelters, etc.).

Willingness to Consider Alternatives to Driving to Work Alone

A second question probed concerned the willingness of respondents to use transit or ride sharing as an alternative to driving to work alone.

About one-third of the employee sample (34%) had considered such alternatives. The frequently cited open-ended reasons for not considering such alternatives included:

- ✍️ No public transportation near the home that runs to Annapolis (29%);
- ✍️ Lack of convenience (23%);
- ✍️ Increased travel time (8%);
- ✍️ Scheduling conflicts (8%)
- ✍️ Offsite meetings/appointments (6%);
- ✍️ Running errands (and flexibility/independence in general) (6%).

A closed-ended section listing a series of possible obstacles to using alternatives to driving alone resulted in the following items having high saliency:

- ✍✍ No public transportation near my home (62% saying ‘large problem’);
- ✍✍ Increase travel time too much (56%);
- ✍✍ Don’t like having to stand outside in poor weather waiting for buses (55%);
- ✍✍ Worried that couldn’t get home in an emergency (55%); and,
- ✍✍ Wouldn’t be able to run errands (49%).

The resident survey included many of the same items. While there were similarities between the two surveys, employees seemed more concerned about the problems of “getting home in an emergency” (76% vs. 56%) and running errands ((71% vs. 53%).

Thus, it is likely that the lack of transit, the increased time, poor conditions, difficulties of getting home in an emergency and of doing errands were all part of a complex of important factors impeding employees from considering alternatives to driving.

Those living closer to work were 69 percent *less* likely to have considered alternatives.

Other attitudinal variables among those more willing to consider alternatives included:

- ✍✍ Less satisfaction with most aspects of their current commuting arrangements;
- ✍✍ More importance placed on convenience and cost rather than time;
- ✍✍ With more focused on problems with parking (availability, location, cost);
- ✍✍ They were less preoccupied with various obstacles to using public transportation such as increasing time, standing outside in bad weather waiting for buses, proximity to transit, etc.
- ✍✍ They perceived traffic conditions in Annapolis to be worse;
- ✍✍ They were generally more receptive to all suggestions for improving the conditions under which interceptors/shuttles operated (lower cost, frequent shuttles).

While the group saying that they were willing to consider alternatives constituted one-third of the overall sample, the analysis left unclear to what extent this group envisioned alternatives in a broad sense (a total solution from home to work) or a narrow sense (improved interceptor performance while driving most of the way to work). Lastly, 70 percent of this group was still inclined to see an increase in the number of parking garages as the single change that could most improve transportation in Annapolis. Thus, many still preferred to improve the ‘driving alone’ paradigm rather than truly consider alternatives.

Shopping

The resident survey asked about shopping habits. Thirty percent of those working full-time claimed to shop on their home. An overwhelming majority used their cars for shopping (93%). A majority (57%) was “very satisfied” with their current transportation arrangements for shopping (and another 28% say they were “somewhat satisfied”).

These findings affirm the following general conclusion: **in the absence of a comprehensive, flexible, and reliable system of public transportation, potential users will inevitably find it more convenient and time efficient to continue driving their cars.** Partial solutions appear unlikely to shift individuals away from primary dependency on their personal vehicles.

Would Residents or Employees Use Interceptor/Shuttle Arrangements?

The last question probed in some detail focused on the likely use of interceptor/shuttle arrangements by residents. Most respondents to this survey did not plan on using such lots (51%). Demographic correlates were generally weakly associated with this question, but followed to some extent the pattern discovered for the other questions: those with lower socio-economic status were more likely to say that they planned to use the lots. Other correlates included: females, racial minorities, and those outside of the 30-44 age group.

Attitudinally, those who were favorable to specific improvements in the local transportation grid were more likely than those saying that improvements were not important – probably pointing to the fact that those with the fewest troubles accessing/parking in Annapolis were least supportive of change.

Among employees, 24 percent said that they would be “very likely” to use interceptors/shuttles if all the improvements and incentives mentioned in the survey (more shuttles, low cost/free, economic incentives) were instituted. Two-thirds (67%) of those currently parking at interceptors said they were “very likely” to use the interceptors compared only 17 percent of those not currently using the satellite lots.

These findings suggest that a large percentage of the group likely to take advantage of new incentives and improvements at the facilities already parks at such lots in *the absence of incentives and improvements*.

Assuming that the 17 percent currently using such arrangements held were to continue usage in the absence of change, only an additional seven percent (to reach 24% of the sample saying they were “very likely”) would be added through refinements to the system. Naturally, inclusion of the “somewhat likely” users would make that percentage increase considerably.

Other finding based on demographic correlates for those saying that they were very likely to use the interceptor arrangement included:

- ☞☞ Government employees were much more likely to use the system than were others;
- ☞☞ Those with clerical or technical/skilled jobs were more likely to use the system than were professionals and managers or salespersons;
- ☞☞ A very high percentage of those who have used public transport claimed to be likely to use the system;
- ☞☞ Those traveling over 16 miles were more likely to use the system than those traveling less;
- ☞☞ Those traveling for more than 20 minutes were more likely to use the system;
- ☞☞ Those arriving between 7 and 8 a.m. were more likely to use the system than those arriving earlier or later;
- ☞☞ Those likely to use their cars during the day were one-half as likely to use the system as those who do not use their cars;

- ☞☞ Those leaving between 4 and 5 p.m. were slightly more likely to use the system;
- ☞☞ Those aged 18-29 and 45-59 were somewhat more likely to use the system;
- ☞☞ Those with incomes under \$75,000 were more likely to use the system.

These results echo those from the discussion of those most likely to use their cars during the day or consider the use of public transportation. In short, **those most likely to use the system are individuals with lower socio-economic status who travel far, don't use their cars during the day and otherwise have a very routinized work schedule.**

Attitudinal variables correlating with a greater likelihood of using the interceptors were:

- ☞☞ Those who were more dissatisfied with all elements of their current arrangements tended to show a higher intended propensity to use the interceptors;
- ☞☞ Those who had considered using means of getting to work other than driving along;
- ☞☞ Those who considered either changing transportation modes or standing outside in bad weather waiting for buses to be not or a small problem;
- ☞☞ Those who considered a medium or large problem not knowing who to contact for ride-sharing;
- ☞☞ Those who felt that the ease of access to downtown Annapolis was poor or fair;
- ☞☞ Those who thought that it was a high priority to have more frequent shuttles around downtown Annapolis
- ☞☞ Those who thought it a high priority that the use of satellite lots with frequent shuttles be encouraged;
- ☞☞ Those more likely to use the interceptors when various specific conditions applied such as frequent shuttles or the provision of employer incentives were most likely to use the system in general;
- ☞☞ Those who found the total amount of travel time to be a medium or large problem;
- ☞☞ Those who found that not knowing about traffic tie-ups was a medium or large problem;
- ☞☞ Those who said that concern about finding parking was a medium or large problem;
- ☞☞ Those who said that concern about the distance between parking and work was a medium or large problem;
- ☞☞ Those who said that concern about the cost of parking was a medium or large problem.

These findings suggest that **those who were least satisfied with their current arrangements were the most open to using the interceptor/shuttle alternative. They were less likely to put an emphasis on the impediments to public transportation in general. They also were drawn by any additional incentives or improvements to current interceptor/shuttle arrangements.**

A regression analysis attempted to narrow down the list of possible important variables likely to motivate respondents to say that they were inclined to use the interceptor arrangement.

That analysis found that:

- ☞☞ The most important variable was “Your employer provided economic incentives for you to park in the outlying lots.” This variable had the largest beta (.521) and the greatest statistical significance;

- ☞☞ “You don’t like having to stand outside in poor weather waiting for buses.” The larger this was perceived as a problem, the lower the probability for using interceptors;
- ☞☞ The greater the satisfaction with safety, the lower the probability for using interceptors; and,
- ☞☞ The poorer the perception of traffic conditions in Annapolis, the greater the probability for using interceptors.

These findings confirm much of the previous analysis: those who sense that public transportation was not structured around impossible obstacles were more flexible; those less satisfied with current arrangements (such as safety) would be more likely to be flexible; those sensing the greatest difficulties accessing downtown Annapolis were more flexible; and most importantly, those seeking economic incentives for any inconveniences associated with interceptor use were more likely to express a willingness to be flexible should incentives be provided.

Questions Directed at Users of Public Transportation, Pedestrian and Bicycle Facilities

The resident survey separated those who used a car even partially for commuting from those who did not. Only ten respondents exclusively used other means for commuting. Of these, seven used the bus (80% saying the MTA bus and 20% an Annapolis City bus), two used a ride-sharing arrangement, one walked and none biked or use light rail/MARC trains.

Those using a bus traveled from two blocks to five miles and took no more than thirty minutes. Daily costs varied a bit, with 71 percent paying under \$2 a day, but the others paying between \$5 and \$6 a day.

The most important problem singled out by these respondents was the quality of the bus shelter, mentioned by 62 percent.

Employees were also asked about public transportation. The survey sought to get a better idea about the distance between bus/shuttle stops and the respondents’ homes. Unfortunately, responses varied widely probably due the likely shorter commute to bus stops when compared to the distance to shuttles. The median number of blocks was two, while the median mileage was 13. This finding implies that people who used buses were generally very close to the bus stop, while those taking the shuttle were essentially commuters parking at an interceptor lot and then shuttling into town from there.

The median time spent waiting for a bus or shuttle was ten minutes.

When asked about the daily cost of taking the bus, 85 percent said that there was no cost, perhaps pointing to extensive shuttle use. Among the few who provided a cost, the range was between 75 cents and \$3.20, with a modal cost of \$1.60.

When asked to say whether an issue was a problem, a majority of the sample (60%) said that the “predictability of the service” was a medium or large problem. Smaller majorities mentioned the “convenience of the schedule” and the “time waiting for the bus to arrive” (both 52%), and the “total amount of time it takes from home to work” (51%). Sizable minorities also mentioned the “quality of the bus shelter” (47%) or of the “bus ride itself” (47%).

These findings reinforce points made earlier about **the importance of providing predictable, reliable service without imposing long wait times or unpleasant bus stops upon actual and potential users. In addition, safety was a high priority for women, who were more likely to be users of interceptors given their demographic profile. Any approach to increasing the participation of women in alternatives to driving alone and parking close to work must focus on the security elements especially.**

The employee survey asked how many times a week did the respondent bicycle or walk to work. Only ten percent walked at least once, while only three percent used their bicycles that frequently.

When asked to rate the quality of pedestrian and bicycle facilities, respondents generally felt that the pedestrian facilities were in better shape than the bicycle lanes and shoulders. While only 12 percent said that pedestrian facilities were in poor shape, nearly half of those answering (49%) gave bike facilities a “poor” rating (with fair and poor combined equaling 83%). These perceptions of bicycling conditions, along with the absence of lockers and showers, probably account for the tiny percentage of commuters using bicycles. Thus, in order to make **bicycling a serious alternative for commuting to work, it seems that major efforts to create appropriate conditions, both in the street and in the workplace, would be necessary.**

The resident survey also asked about walking and bicycling habits. About 63 percent walked at least three times a week for exercise *or* to commute to work (the survey did not segregate respondents by commuters vs. others). Residents had a much more unfavorable impression of pedestrian facilities than did employees, with 30 percent of residents saying “poor” compared to only 12 percent of employees.

Residents were also asked about their bicycle use. Only 24 percent used bicycles at least once a week for any purpose. While 52 percent said that pedestrian facilities were poor or fair, 78 percent expressed a similar sentiment for bicycle facilities.

All respondents to the employee survey were asked how important it was to improve pedestrian and bicycling facilities when thinking about major improvements to the Annapolis transportation system.

Given the smaller base of cyclists, the somewhat larger percentage saying that improvements to pedestrian facilities (42%) rather than bicycle facilities (32%) were “very important” was not unexpected. However, only small minorities of respondents were inclined to say that such improvements were “not very” important. Those who were active walkers or cyclists were more inclined to say that such improvements were important.

Access to the downtown Annapolis area - Residents

The resident survey asked respondents to indicate *how frequently and by what means* they accessed Annapolis, and *what they did there* other than go to work. A majority of the sample had “always” used their cars, but a substantial 48 percent had at least occasionally walked. Only a small percentage had used their bicycles (12%) or the bus (7%).

When asked about the purpose of their visits to Annapolis, 90 percent said that they had visited a restaurant or bar, 72 percent had shopped and another 64 percent had visited a “non-eating tourist site.” Relatively few had attended a meeting (37%). About half (51%) had traveled to Annapolis to “see family or friends.”

When residents were asked about improvements to the Annapolitan transportation system, respondents were generally favorable to all suggested improvements to the system (improving ped/bike facilities, more shuttles, park and ride), **although the largest majority (57%) of those citing one item as “very important” favored increasing the number of parking garages in downtown Annapolis.**

A section of the employee survey asked respondents to ponder the ease or adequacy of elements of the Annapolis transportation grid. None of the items received notable “excellent” scores; the combined excellent/good categories only produced a single item with a majority: 56 percent thought that the “adequacy of sidewalks” was good or excellent. Only six percent thought the same about bike lanes (although 36% had no opinion). The ease of parking only received 13 percent saying good or excellent, barely exceeded by the 21 percent saying the same for public transportation (although note the high ‘no opinion’ scores for public transportation and bike lanes). Overall, 35 percent said that the ease of access to the downtown area was good or excellent.

As 62 percent indicated they thought that parking in downtown was poor, this item was apparently the **most problematic** for the sample of employees (as it was for residents). A cross-tabulation showed that employees who had the least access to parking close to work were most critical of the downtown parking situation.

Employees were asked to rank five options for improving “transportation in and out of downtown Annapolis” on a scale, using a one for the option with the greatest impact. The sample’s verdict was clear: **increase the number of parking garages**, which was cited as the first priority by 59 percent. This was a percentage similar to that of residents (57%).

Combining the first two priority levels resulted in a majority also favoring an increase in the frequency of shuttles (66%) or encouraging the use of satellite lots with frequent shuttles to downtown (54%). Using the combined indicator, improving pedestrian facilities (24%) and bike facilities (19%) were clearly lesser priorities.

Finally, when asked to provide open-ended suggestions to transportation planners, residents’ contributions were divided as follows:

- ✍️ Bus improvements (15%)
- ✍️ Road improvements (13%)
- ✍️ Extend Metro (9%) and Light Rail (8%)
- ✍️ Pedestrian improvements (8%)
- ✍️ Bike improvements (7%)

Conclusion

This report has provided insight into the structure of current commuting arrangements and the challenges they pose for alleviating traffic congestion and generally increasing the satisfaction of residents and employees. Issues such as the high concentration of commuters arriving and departing within a short period of time were highlighted.

The relative preference of residents and employees for the maximum in convenience, flexibility and time efficiency was underscored by the findings. These factors tended to push them to favor solutions that facilitated using their cars such as increasing the number of parking garages in downtown Annapolis.

However, some groups of respondents were more willing than others to consider alternatives to the paradigm of driving alone to work. These were individuals who were generally less satisfied with their current arrangements, driving longer and farther, parking farther from their workplaces and with fewer needs to run mid-day errands and attend offsite meetings. Such individuals seemed particularly favorable to transportation solutions that improved the functioning of interceptor/shuttle arrangements. They were also likely to modify their behaviors if provided with appropriate economic incentives.

The report also urges caution in anticipating great receptivity to innovative solutions to commuting problems. The percentage of employees very likely to use interceptors/shuttles even when all improvements and incentives have been provided did not increase much from the percentage now using these arrangements in the absence of any changes. It may be possible to improve the chances of successfully introducing new transportation solutions, but only if the greatest priorities of commuters – time and convenience – are not sacrificed in the process. While a trade-off between cost on the one hand, and time or convenience on the other appears to be feasible, it is important to remember that over two-thirds of employees currently receive free parking anyway.

Thus, a combined set of policy options might include:

- ✍️ Encouragement of more staggered commuting times;
- ✍️ Avoidance of parking disincentives for those electing not to come during peak hours (parking set asides, parking close in for those coming off-peak);
- ✍️ Increase the economic incentives for those willing to assist in the reduction of congestion and close-in parking (by either charging for close-in parking or providing income

subsidies to those parking in satellites or taking other forms of public transportation);

- ☞ ☞ Consider non-economic incentives for those helping to alleviate congestion and parking problems, such as a special day off of work, a free dinner at an Annapolis restaurant, special flexibility in work hours, etc.
- ☞ ☞ Give employees confidence that even occasional use of interceptors/shuttles will be rewarded;
- ☞ ☞ Help those who might be interested in ride-sharing find out who lives nearby – develop a database and/or inform employees about the availability of ARTMA’s services;
- ☞ ☞ Ensure that those willing to consider alternatives have some means to provide for emergency situations;
- ☞ ☞ Carefully screen the needs of employees, developing a scale that determines parking situation not just by seniority but by need for offsite work-related meetings and appointments;
- ☞ ☞ Be especially sensitive to the situation of women, who tend to fall into the profile of likely interceptor users, particularly since women value safety more highly than do men;
- ☞ ☞ Coordinate bus schedules with the core commuting patterns of employees, ensuring that should employees have to work late, the employer will provide alternative transportation given the lack of bus frequency during off-peak hours;
- ☞ ☞ Give top consideration to the safety and comfort of bus and shuttle stops, with proper lighting, security patrols, comfortable benches, proper sheltering about bad weather, and ideally a comprehensive system for knowing the status of forthcoming buses;
- ☞ ☞ Implement the other suggested improvements to the interceptor/shuttle system – more frequent shuttles, low or no cost, etc.
- ☞ ☞ Consider developing at least one safe bike access route to downtown Annapolis (perhaps using sites such as the Naval Academy for through bicycle traffic);
- ☞ ☞ Conduct a survey of sidewalks to ensure that they provide ample opportunity for those parking on the periphery or who wish to run errands by frequenting downtown shopping sites can do so, thus avoiding recourse to mid-day use of their cars;
- ☞ ☞ Discourage the belief that additional parking garages will ever be built in downtown Annapolis, obliging employees (and residents) to resign themselves to new commuting patterns;
- ☞ ☞ Develop educational campaigns on the benefits of walking and local shopping – perhaps providing incentives to those who shop and otherwise run errands locally;

- ✍️ Hold regular meetings with major employers to monitor efforts to implement any new policies;
- ✍️ Make sure that all stakeholders are familiar with policy initiatives and see the value for the long-term benefit of Annapolis of complying with such measures.

Introduction

The Annapolis Transportation Study Group enlisted the assistance of the Center for the Study of Local Issues at Anne Arundel Community College to investigate the attitudes and behaviors of residents and employees in the greater Annapolis area regarding transportation. Specifically, two surveys were devised: one of residents within the zip codes included in the study area, the second of employees working in downtown Annapolis. The first survey was conducted by telephone in November 2002; the second was self-administered as questionnaires were provided to employers who then requested their employees to fill them out during spring 2003. Overall, 370 completed questionnaires were obtained in the first case; 721 in the second. In this report, these surveys shall be referred to as the “resident survey” and the “employee survey” respectively.

Methodological Notes

The resident survey was meant to provide an understanding of residents’ transportation attitudes and behaviors. The poll was conducted using random-digit-dialing based on household telephone prefixes within the targeted zip codes. The distribution of completed questionnaires is shown on table 1. Clearly, the bulk of respondents came from 21401 and 21403, covering the City of Annapolis, its surrounding suburbs south of the Severn River and suburbs just north of the Severn River in the Broadneck peninsula. The margin of error for the sample is about five percent.

Table 1: Respondents by Zip Code – Resident Survey¹

	Percent
Unknown	1
21401	63
21402	1
21403	35
21405	1
Total	101

N=368

By contrast, the self-administered employee survey was focused on those working within the downtown area of Annapolis. This focus naturally entailed a much larger group of zip codes from employees whose homes were dispersed throughout Maryland.

¹ All numeric entries in tables indicate percentages except in columns labeled “cases” (which indicate the number of cases, also demarcated by “N=”) and where a significance value is given, labeled “Signif.” or p=. Statistical significance is typically associated with a value of .05 or less.

Table 2: Respondents by Zip Code – Employee Survey

	Percent
21401	16
21403	15
21012	8
21037	3
21061	4
21122	6
21146	3
21666	4
All others	41
Total	100.0

N=701

Nevertheless, eight zip codes accounted for 59% of all respondents; 45% were within around ten miles of downtown and 49% were within Anne Arundel county.

The sampling process for this group was more complex than for the telephone survey. A list of businesses (including government) was obtained with the assistance of the Annapolis City Planning and Zoning department. As this produced a list of nearly 4,000 establishments, a decision was made to simply eliminate businesses with fewer than 3 employees. A random sample of the shorter list of businesses was then created. Interns working for the City of Annapolis were given addresses and the appropriate number of questionnaires, which they distributed to the employers. Instructions to employers were provided in a cover letter explaining the purpose of the survey. After three weeks, interns returned to the participating establishments and collected the completed questionnaires. Government offices generally provided the questionnaires to their employees as an attachment to an email message. Employees were expected to print them out and return them; employers in some cases mailed the completed questionnaires to the Annapolis Planning office.

Given the complexities of administering the employee survey, it was more difficult to estimate a statistical margin of error for the findings. Generally, a sample of 725 would produce a relatively small margin of error between 4 and 5 percent.

The Center for the Study of Local Issues eventually obtained all the completed questionnaires and developed the database used for all statistical analysis.

Results

Demographic Aspects

Employment Situation

In the resident survey, respondents had a wide range of employment situations. As depicted on table 3, only about one-half (49%) were employed full-time, with another 11 percent employed part-time. About nine percent claimed to be employed full or part-time but working at home. Over one-fifth (22%) was retired.

Table 3: Employment Situation – Resident Survey

Employed full-time (at least 35 hours) primarily outside the home	49
Employed part-time outside the home	11
Employed full or part-time and work at home (possibly self-employed or telecommuting)	9
A homemaker	5
Retired	22
Unemployed	3
Going to school	2
Other (specify:	1
No answer/refused	0

The employee survey only included those *employed* in downtown Annapolis; 92 percent were employed full time, with the remainder employed part-time. Women were twice as likely to be part-time employees as men (10% vs. 5%, $p=.03$).

Table 4: Employment Situation – Employee Survey

Employed full-time (at least 35 hours) primarily outside the home	92
Employed part-time outside the home	8

When considering occupational categories, the results of the two surveys were not entirely comparable, as there were some categories added to the employee survey. Even so, clearly the occupational situations of the two samples varied.

There were four times as many residents saying that they were employed in sales than in the employee survey (24% vs. 6%). Table 5 also shows that many more respondents in the employee survey chose “clerical/administrative support” than was true for the resident survey (11% vs. 29%). There were a significant number of “technical, skilled workers” participating in the employee survey, a category omitted in the resident survey. There were, however, roughly comparable percentages of “professional, management” – 53 percent for the resident survey and 43 percent for the employee survey.

Women were dramatically less likely to be managers (37% vs. 54%) and much more likely to be in clerical or administrative support (40% vs. 9%, $p=.01$)

Table 5: Occupational Categories – Resident and Employee Surveys

	Resident	Employee
Sales	24	6
Restaurant or hospitality service worker	--	3
Clerical or administrative support	11	29
Manufacturing, construction, or maintenance worker	5	0
Technical, skilled worker	--	16
Professional, management	53	43
Unskilled or semi-skilled worker	--	0
Other	8	2

Only the employee survey followed up the occupational category question with another one concerning industrial setting. Table 6 shows that **the overwhelming majority of respondents was employed by government (71%)** with the rest scattered among the other choices.² Women were slightly more likely to be such workers (73%, 67% p=.5). This may explain the relative absence of employees working in sales.

Table 6: Industrial Setting – Employee Survey (N=715)

	Percent
Advertising/Marketing/ Design	2
Architectural/Engineering	1
Business Support Services	1
Construction	0
Education	1
Finance/Accounting	2
Government	71
Hospitality or restaurant/bars	4
Insurance	0
Legal	7
Manufacturing	0
Medical	0
Real Estate	1
Retail	6
Technology	1
Telecommunications	0
Other	4
Total	101

² The overall percentage of the Annapolitan workforce who was government workers at the time of the survey is unknown. In this sense, the representative accuracy of the survey as a tool for generalizing about the universe of downtown employees remains unclear. It is possible that the survey *disproportionately* showed the situation as it obtains for government employees, but this may be subject to later verification.

Table 7 provides the actual names of the respondents' employers. There were 728 valid responses. Of these 119 (16%) were from Anne Arundel County Government, 31 (4%) from the City of Annapolis, and 300 (41%) from the State of Maryland.

Table 7: Employer – Employee Survey

	Case	Percent	Employer	Cases	Percent
49 West Coffee House	3	0.4%	Galway Bay Restaurant	7	1.0%
A A County-County Council	5	0.7%	Governor's Appointments Office	1	0.1%
AA Co Govt.- Information Technology	28	3.8%	Great Feathers	2	0.3%
AA Co. - Purchasing	1	0.1%	Gregory Guzzi Jewelers	2	0.3%
AA Co. -Board of Appeals	1	0.1%	H&B Products, Inc.	1	0.1%
AA Co. Central Services/ Purchasing	1	0.1%	Hardscapes Construction	3	0.4%
AA Co. County Exec. Office	2	0.3%	Herman Advertising	13	1.8%
AA Co. Dept. of Social Services	6	0.8%	Historic Annapolis Foundation	8	1.1%
AA Co. Gov- Office of Finance	23	3.2%	Hynson & Son Real Estate & Bail Bond	2	0.3%
AA Co. Governmental Relations	1	0.1%	Iatesta & Company, Inc.	2	0.3%
AA Co. Govt - Office of Budget & Finance	1	0.1%	Karma Creations	1	0.1%
AA Co. Govt. - Central Services	4	0.5%	Krause & Ferris	4	0.5%
AA Co. Govt. - County Auditor's Office	4	0.5%	Linowes & Blocher	6	0.8%
AA Co. Govt. Acctg. & Control	1	0.1%	Manpower	1	0.1%
AA Co. Govt.-Land Use	1	0.1%	Manpower2	1	0.1%
AA Co. Office of Finance	8	1.1%	Maryland Dept. of Legislative Services	1	0.1%
AA Co. PIO Office	1	0.1%	McBride Gallery	1	0.1%
AA Co. unknown/unspecified	15	2.1%	MD Retailers Assoc	2	0.3%
AA Co.-Arundel Center	1	0.1%	MD State Police - Exec. Protection Division	1	0.1%
AA Co.-County Executive's Office	5	0.7%	Merrill Lynch	2	0.3%
AA County - CAD office	1	0.1%	Mills Wine & Spirits	2	0.3%
AA County - Dept. of Social Services	3	0.4%	Ron George Jewelers Inc	2	0.3%
AA County - Office of Co. Executive	1	0.1%	Roy Dunshee	1	0.1%
AA County Circuit Court	1	0.1%	Sabina Glasier	2	0.3%
AA County Govt.-Finance-Utility billing	2	0.3%	Schaller & Gorski	3	0.4%
AA County-Administrative Hearings	1	0.1%	Sir Speedy Printing	1	0.1%
AA Co. Dept. of Social Services	1	0.1%	Smith Barney	3	0.4%
ABC-Chesapeake	1	0.1%	Spherion	3	0.4%
Acme Bar & Grill	2	0.3%	State of MD - Board of Public Works	3	0.4%
Alexander & cleaver	1	0.1%	State of MD- - MGA-DLS/OPA	1	0.1%
Alexander & Cleaver	1	0.1%	State of MD - Public Works	1	0.1%
Annapolis Accommodations	7	1.0%	State of MD – unspecified	20	2.7%
Annapolis Chorale	1	0.1%	State of MD Comptroller - Central Payroll Bureau	2	0.3%
Annapolis Public Works, Engineering & Construction	1	0.1%	State of MD Comptroller - General Acctg. Div-Treasury Bldg.	2	0.3%
Assox Builders & contractors	1	0.1%	State of MD Comptroller - Treasury	1	0.1%
Avoca Handweavers	4	0.5%	State of MD Comptroller -Alcohol	4	0.5%

			& Tobacco Tax Division		
Bay Technologies	4	0.5%	State of MD Comptroller -Central payroll Bureau	1	0.1%
Bose	1	0.1%	State of MD Comptroller of MD	64	8.8%
Capitol Strategies LLC	1	0.1%	State of MD Comptroller of MD, Information Technology Div	26	3.6%
Champion Realty	2	0.3%	State of MD Comptroller of Treasury	2	0.3%
Chick & Ruth's deli	9	1.2%	State of MD Comptroller Office Adm. & Finance	1	0.1%
City of Annap. Dept. of Planning & Zoning	10	1.4%	State of MD Comptroller -Office of Personnel Services	1	0.1%
City of Annapolis	9	1.2%	State of MD Comptroller -RAD-State	24	3.3%
City of Annapolis - Finance Dept.	1	0.1%	State of MD Comptroller -State-Motor Fuel Tax Division	8	1.1%
City of Annapolis - HR	1	0.1%	State of MD Comptroller - Taxpayer Services	1	0.1%
City of Annapolis Dept. of Finance	1	0.1%	State of MD Comptroller-Field Enforcement	1	0.1%
City of Annapolis HR	1	0.1%	State of MD Executive office	1	0.1%
City of Annapolis, Dept. of Public Works	1	0.1%	State of MD- General Assembly	18	2.5%
City of Annapolis, Finance	1	0.1%	State of MD- General Assembly-House of Delegates	1	0.1%
City of Annapolis, Inspection & Permits	1	0.1%	State of MD- Governor's Finance Office	2	0.3%
City of Annapolis, Office of Law	1	0.1%	State of MD Revenue Administration	14	1.9%
City of Annapolis/Inspections and permits	1	0.1%	State of MD- State Ethics Commission	4	0.5%
City of Annapolis/Mayor's Office	1	0.1%	State of MD- State Government	1	0.1%
City Office	1	0.1%	State of MD-. Dept. of Legislative Services	91	12.5%
City-Central Services	1	0.1%	State of MD-Governors Office	8	1.1%
Constellation Energy Group	7	1.0%	Stevens Hardware	4	0.5%
Cooter, Mangold, Tanpert & Wayson, LLC	7	1.0%	Synergics Energy Dev. Inc.	5	0.7%
Council, Baradell, Kosmerl, & Nolan, PA	25	3.4%	Ted Levitt	1	0.1%
DBM	52	7.1%	The Paper Gourmet	1	0.1%
DBM/ASM	1	0.1%	The White House/Black Market	4	0.5%
DBM; ASM	1	0.1%	Union Communication Services	3	0.4%
DBM2	1	0.1%	unspecified	5	0.7%
DBM-OIT	1	0.1%	West East Enterprises Inc.	1	0.1%
DBM-OIT-ASM	1	0.1%	Wharton, Levin, Ehrmantrant, Klein	1	0.1%
Dept. of Budget & Management	1	0.1%	ZHA Inc.	4	0.5%
Discovery Channel Store	1	0.1%	Total	728	100.0%
Donald Zuchelli	1	0.1%			
downtown Art Gallery	1	0.1%			
Environmental Systems Analysis Inc.	5	0.7%			
Farmers Bank of MD	4	0.5%			
Fawcett Boat Supplies	18	2.5%			
First Presbyterian Church	2	0.3%			

Age

Employees: The largest age group was those between 34-59 years old (46% vs. 34% for residents), followed mostly by those 30 to 44 (31%). Lesser percentages were younger (13%) or older (10%).

Residents: The largest age group was those between 34-59 years old (34%), followed equally by those 30 to 44 and 60 or more (both 27%). Only eleven percent was between 18 and 29.

Table 8: Age – Employee and Resident Surveys

Variable	Category	Employees	Residents
Age N=707/354	18 to 29	13	11
	30 to 44	31	27
	45 to 59	46	34
	60 or more	10	27

Education

Employees: Respondents were generally *not* as well educated as residents, with only 26 percent having done some postgraduate work (vs. 32% for residents), another 28 percent have finished a four-year degree, and 26 percent having at least some college.

Residents: Respondents were generally well educated, as 32 percent had done some postgraduate work; another 28 percent finished a four-year degree, and 26 percent had at least some college.

Table 9: Education – Employee and Resident Surveys

Variable	Category	Employees	Residents
Highest level of your formal education: N=701			
	Less than a high school degree	1	1
	A high school degree	12	13
	Some college or a two-year degree	37	26
	Completed college with a bachelor's degree	24	28
	Post graduate work	26	32

Income

Employees: There were few differences between employees and residents regarding income. The model income category was also the \$50,000 to \$75,000 range (25%) although a large percentage made at least \$100,000 (28%). Over one-quarter (28%) of the sample earned \$50,000 or less.

Residents: The model income category was the \$50,000 to \$75,000 range (23%) although a large percentage made at least \$100,000 (29%). Over one-quarter (29%) of the sample earned \$50,000 or less.

Table 10: Income – Employee and Resident Surveys

Variable	Category	Employees	Residents
Household income: N=652/295			
	Less than \$30,000	6	10
	\$30,001 to \$50,000	22	19
	\$50,001 to \$75,000	25	23
	\$75,001-\$100,000	19	19
	\$100,001-125,000	12	12
	Over \$125,000	16	17

Race

Employees: Most respondents were non-Hispanic whites (87%) or African-American (9%).

Residents: Most respondents were non-Hispanic whites (85%) or African-American (8%).

Table 11: Race – Employee and Resident Surveys

Variable	Category	Employees	Residents
Regarding race, how would you describe yourself? N=687/355			
	African-American	8	8
	White (non-Hispanic)	85	85
	Hispanic	1	1
	Asian	1	2
	Other or mixed background	2	1

Marital Status

Employees: Sixty-one percent were married, 23 percent were single and 12 percent were divorced or separated.

Residents: Sixty percent were married, 19 percent were single and ten percent were divorced or separated.

Table 12: Marital Status – Employee and Resident Surveys

Variable	Category	Employees	Residents
What is your current marital status? N=698			
	Single	23	20
	Married	61	60
	Separated or Divorced	12	10
	Widowed	2	7
	Other	2	3

Children in the Household

Employees: The largest concentration of children was aged between zero and five (30% having a child in that age range). There were three other age categories for children with similar percentages (between 10% and 17%).

Residents: The largest concentration of children was aged between zero and five (29% having a child in that age range). There were three other age categories for children with similar percentages (between 8 and 12%).

Table 13: Children Living in the Household – Employee and Resident Surveys

Variable	Category	Employees	Residents
What are the ages of any children living in your household			
N=218/107	0-5	30	29
N=69/30	6-10	10	8
N=96/46	11-16	13	12
N=126/40	Over 16	17	11

Housing Situation

Employees: Seventy-one percent lived in a single-family detached house, while 16 percent lived in a townhouse and nine percent in an apartment. Only three percent were in a condominium.

Residents: Seventy percent lived in a single-family detached house, while an equal percent lived in a townhouse or an apartment (11%). Seven percent were in a condominium.

Table 14: Housing Situation – Employee and Resident Surveys

Variable	Category	Employees	Residents
Which of the following best describes your home: A detached single family home, a townhouse, a condo, or an apartment? N=696			
	Detached single family	71	70
	Townhouse	16	11
	Condo	3	7
	Apartment	9	11

Gender

Employees: Most respondents were female (66%).

Residents: Most respondents were female (59%).

Table 15: Gender – Employee and Resident Surveys

Variable	Category	Employees	Residents
Gender N=696/369	Female	66	59
	Male	34	41

Workplace Location

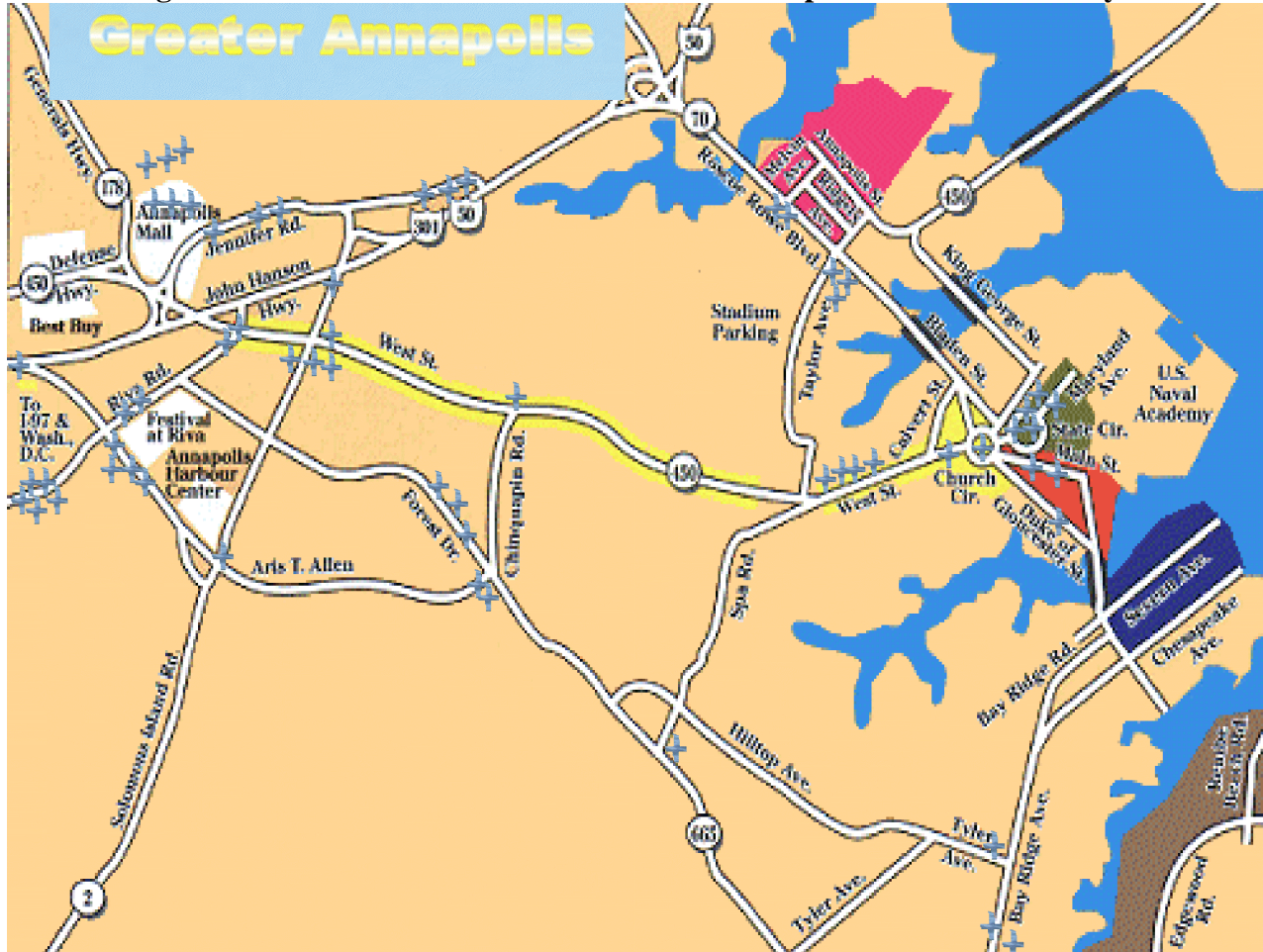
The resident survey included a question requesting the respondents' workplace locations. As shown on table 16, about one-half worked either in the City of Annapolis (35%), Parole (5%), or the immediate suburbs (10%). Over one-third (36%) worked outside of Anne Arundel County.

Table 16: Workplace Location – Resident Survey

	Percent
Annapolis city	35
Parole	5
Suburbs around Annapolis	10
Elsewhere in Anne Arundel County	14
Outside of Anne Arundel County	36
Total	100

Residents who worked in the Annapolis area were also asked to indicate the major intersection nearest their workplace. Figure 1 is a map showing the distribution of responses (noted by a gray “x”). Most respondents worked either just off Route 50 (on Riva Road, Jennifer Road, Annapolis Mall, Old Solomon’s Island Road) or near downtown (West Street, State Circle).

Figure 1: Work Destinations within Greater Annapolis – Resident Survey

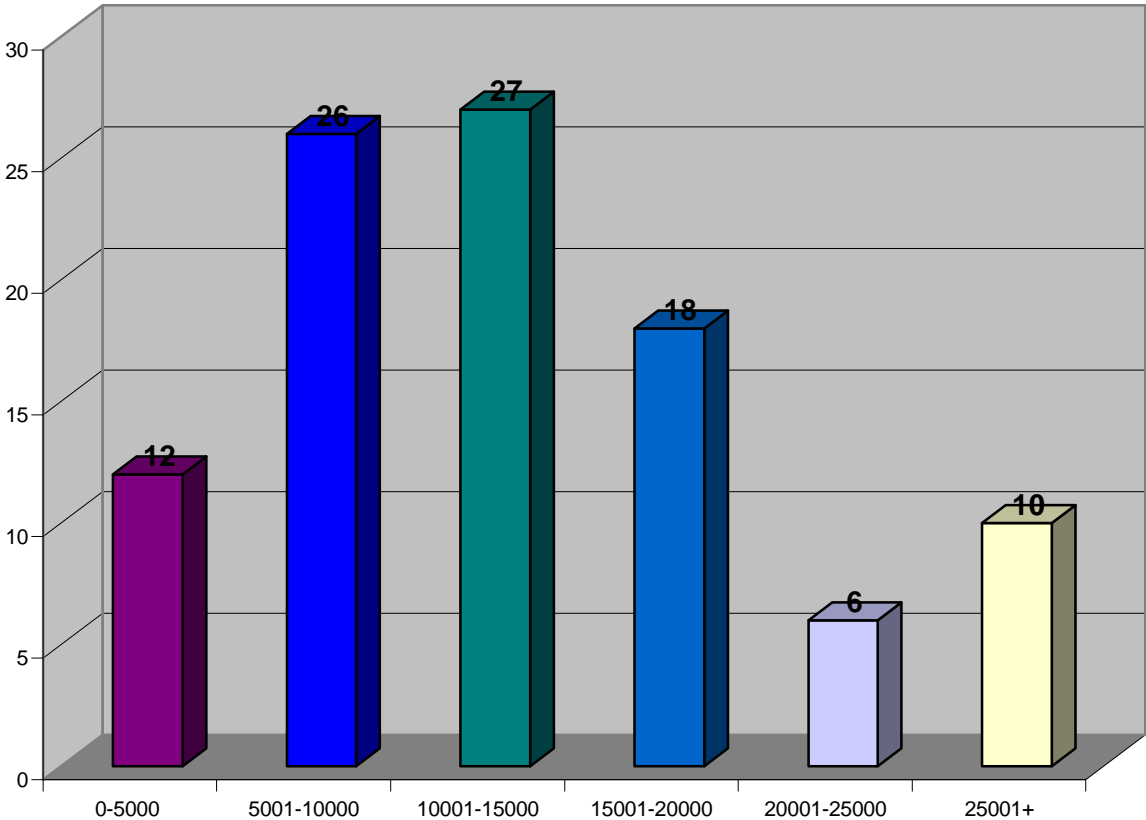


Driving and Parking Patterns

Miles Driven - Residents

Figure 3 shows that there was a large range in the number of miles driven by residents, with the modal range being between 10-15,000 miles a year. However, ten percent drove upwards of 25,000 miles a year, perhaps due to long commutes from Anne Arundel County to e.g., the Washington, D.C. area.

Figure 3: Distance Driven per Year in miles (%)



Preferred Access Route to Annapolis – Employees

The employee survey asked those *not* taking public transportation about their preferred access route for getting to downtown Annapolis. Respondents were able to make multiple entries resulting in 1125 cases.

As shown on figure 4, 27 percent of these responses indicated that they approached Annapolis using Route 50 and crossing the Severn River Bridge. Another 18 percent crossed into Annapolis by using the Naval Academy Bridge. Nearly one-third (32%) claimed to either use Route 50 coming from the East (17%) or Ritchie Hwy (15%). Over one-fifth approached Annapolis either from Route 50 coming from the West (22%) or Route 97 (23%).

Locally based access was more limited, with only eight percent saying that they took Forest Drive into Annapolis, although 16% said that they crossed the Spa Creek Bridge. Only nine percent approached Annapolis from South County.

Figure 4: Access Approaches into Annapolis – Employee Survey



Since a large number of employees used Routes 97 and 50, it was not surprising to find **that 61 percent exited off Route 50 at Rowe Blvd**. None of the other five exit options received more than three percent.

Distance/Time between Home and Workplace

Table 17 shows that there was remarkable similarity regarding the distance traveled both for residents and employees. For both surveys, around three-quarters of the **respondents did not travel more than 30 miles**. Employees had a lower modal travel distance (between 6 and 15 miles – 29%) compared to residents (over 30 miles). This might have been due to the presence of more “bedroom suburbs” outside Annapolis, with residents traveling in many directions to get to work.

Table 17: Distance between Home and Workplace – Residents and Employees

	Resident N=211	Employee N=717
(1) Less than ½ mile	1	2
(2) Between ½ mile and 2 miles	6	8
(3) More than 2 miles but less than 5 miles	21	17
(4) Between 6 and 15 miles	21	29
(5) Between 16 and 30 miles	24	24
(6) Between 31 and 45 miles	26	13
(7) More than 45 miles		7

Table 18 presents a mixed picture regarding travel time. Residents traveled both for shorter and longer amounts of time than employees. For example, 36 percent of residents traveled 15 minutes or less, compared to only 24 percent of employees. On the other hand, 26 percent of residents traveled more than 45 minutes compared to only 18 percent for employees.

Nearly two-thirds (63%) of employees did not travel more than 30 minutes from home to workplace, implying that despite whatever congestion and parking obstacles they encounter, their commute from home to work remained quite short.

Table 18: Time between Home and Workplace – Residents and Employees

	Resident N=212	Employee N=715
(1) Under 10 minutes	18	9
(2) Between 10 and 15	18	15
(3) Between 15 and 20	10	16
(4) Between 20 and 30	11	23
(5) Between 30 and 45	17	19
(6) Between 45 and 60	26	13
(7) More than 60 minutes		5

Employees were asked about the time taken to get from the workplace to home. Table 19 indicates that the trip home was lengthier than that from home to work. While 63 percent travel no more than 30 minutes to get to work, only 52 percent took a comparable amount of time on the return trip home. Women traveled slight less than men (59% under 16 miles, vs. 51% for men).

Table 19: Time between Workplace and Home – Employees

	Home/Work	Work/Home	Difference
(1) Under 10 minutes	9	7	-2
(2) Between 10 and 15	15	11	-4
(3) Between 15 and 20	16	13	-3
(4) Between 20 and 30	23	21	-2
(5) Between 30 and 45	19	23	+4
(6) Between 45 and 60	13	16	+3
(7) More than 60 minutes	5	9	+4

N=714

Reasonable Travel Times

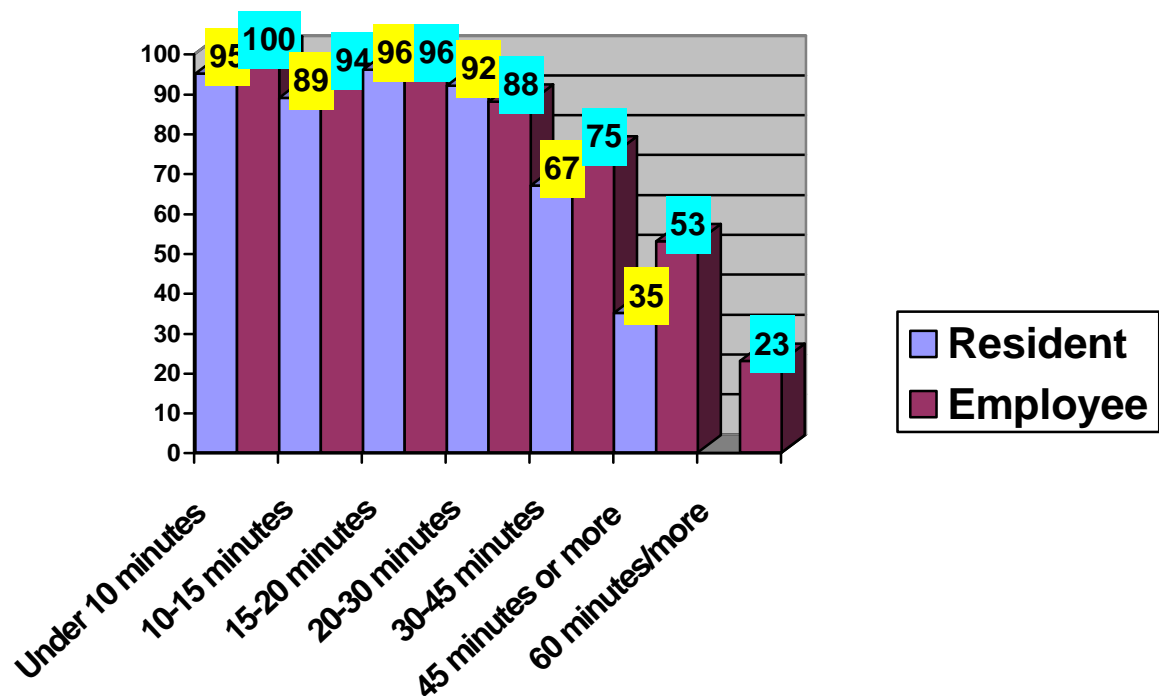
Table 20 shows that most residents and employees felt that their travel times to work were reasonable. Employees were apparently more satisfied than were residents. This is probably due to the fact that respondents were a bit less likely to feel that travel times were “reasonable” as travel times approached the threshold of 45 minutes. As more residents traveled over 45 minutes than did employees, the higher percentage citing “too long” was more likely to be found among the residents.

Table 20: Travel Time – Reasonable or Too Long? (Residents and Employees)

	Resident	Employee
Reasonable	73	81
Too long	27	19

Figure 5 shows the relationship between travel time and perception of “reasonable” for residents and employees. There was a sharp drop-off as times increase, with only 23 percent of employees saying that travel time was reasonable when traveling 60 minutes or more.

Figure 5: Travel Time to Work and Percent Saying “Reasonable”



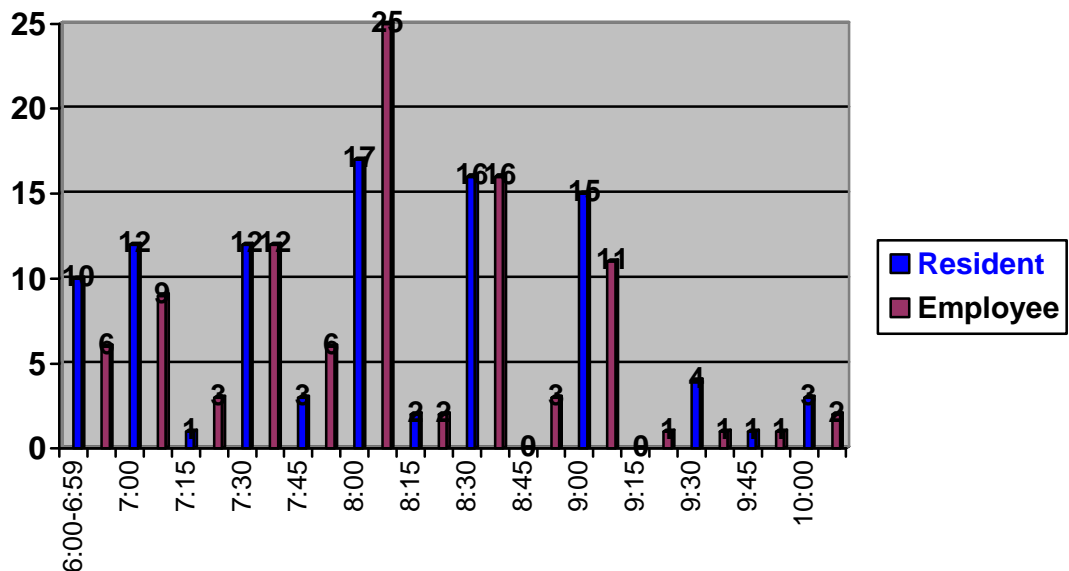
Arrival and Departure Times

A comparison of resident and employee arrival times may point to a cause of exacerbated traffic congestion in downtown Annapolis. **While 16 percent of residents arrived at work pre or off peak, only nine percent of employees did so.** Moreover, while 23 percent of employees got to work between 9:00 a.m. and 10:00 a.m., only 16 percent of employees did so. This suggests that Annapolis employees descended on the city in a highly concentrated period with clear spikes: 7:30, 8:00 and 8:30 a.m. It is not unlikely that this pattern, **rather than distributing the traffic impact into the earlier or later hours, creates a concentration of employees and their cars, thus producing an exceptional scramble for road space and parking.** (See table 21 and figure 6).

Table 21: Arrival Times at Workplace – Employee Survey

Time	Residents	Employees	Time	Residents	Employees
10:15 a.m. to 5:59 a.m.	6	3	8:00 a.m.	17	25
6:00 a.m. – 6:59 a.m.	10	6	8:15 a.m.	2	2
Pre/off peak	16	9	8:30 a.m.	16	16
7:00 a.m.	12	9	8:45 a.m.	0	3
7:15 a.m.	1	3	8:00-8:45 a.m.	35	46
7:30 a.m.	12	12	9:00 a.m.	15	11
7:45 a.m.	3	6	9:15 a.m.	0	1
7-7:45 a.m.	28	30	9:30 a.m.	4	1
			9:45 a.m.	1	1
			10:00 a.m.	3	2
			9:00-10:00 a.m.	23	16

Figure 6: Arrival Times – Employee and Resident Surveys



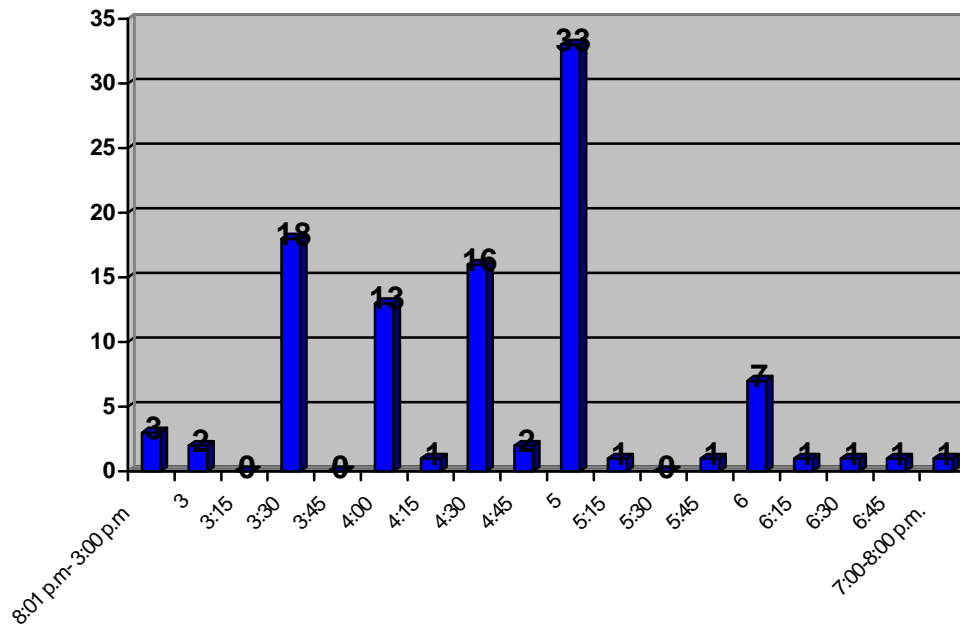
Employees' departure times from the workplace to home also showed a major concentration, this time in the 3:30 – 5:00 p.m. period during which 83 percent of employees left work (see table 22 and figure 7). **This concentration of departing employees and their vehicles was even more skewed than the morning rush hour.**

Table 22: Departure Times from Workplace – Employee Survey

Time	Employees	Time	Employees
8:01 p.m. to 3:00 p.m.	3		
3:00 p.m.	2	6:00 p.m.	7
3:15 p.m.	0	6:15 p.m.	1
3:30 p.m.	18	6:30 p.m.	1
3:45 p.m.	0	6:45	1
3-3:45 p.m.	20	6-6:45 p.m	10
4:00 p.m.	13	7:00 p.m.	1
4:15 p.m.	1	7:15 p.m.	0
4:30 p.m.	16	7:30 p.m.	0
4:45 p.m.	2	8:00 p.m.	0
4-4:45	32	7-8:00 p.m.	1
5:00 p.m.	33		
5:15 p.m.	1		
5:30 p.m.	0		
5:45 p.m.	1		
5:00-5:45	35		

N=656

Figure 7: Departure Times – Employee Survey



Arrival Times and Driving/Parking Concerns

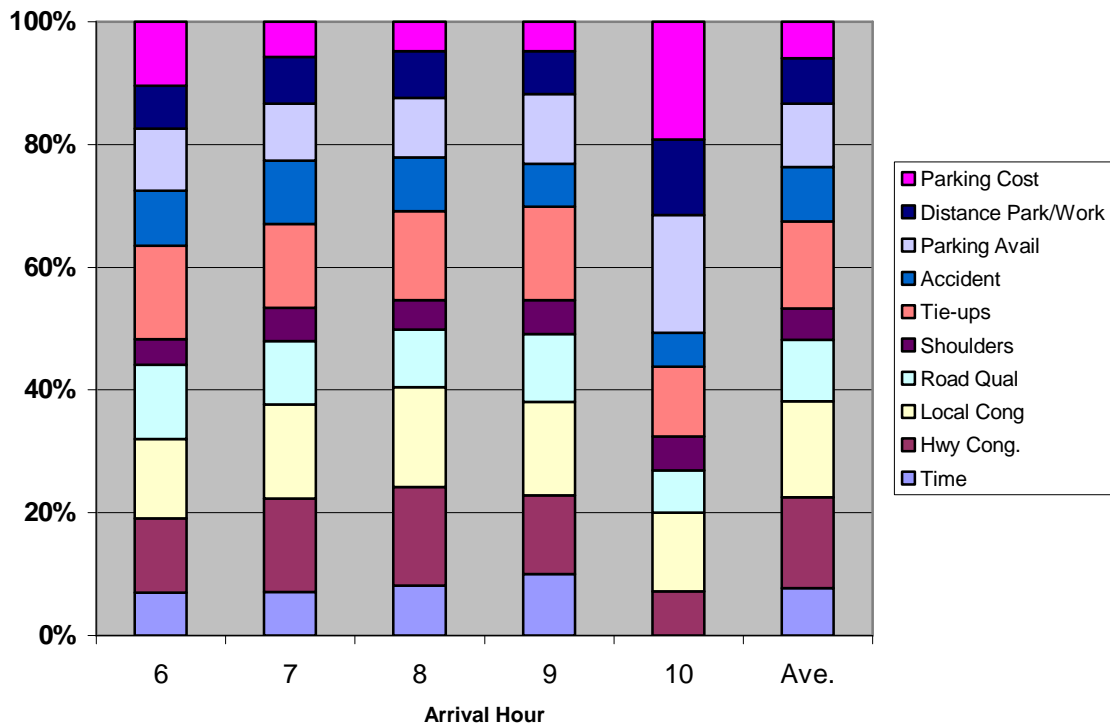
Table 23 and figure 8 show the differences among those arriving at different times regarding various aspects of driving and parking. **Those arriving during the peak hours were more likely to be concerned about traffic congestions**, especially on the highways. Those arriving later were less concerned about congestion, but more preoccupied by the problem of finding and paying for parking. (Compare the 10:00 a.m. bar with the average next to it in Figure 8).

Table 23: Arrival Times by Driving and Parking Concerns – Percent Saying Medium or Large Problem from Employee Survey

Arrival time	Total time		Hwy congstn		Local road congstn		Quality of roads		Inadequate shoulders		Tie-ups		Accident concern		Parking space		Dist. lot and office		Cost of parking	
	S	L	S	L	S	L	S	L	S	L	S	L	S	L	S	L	S	L	S	L
6	75	25	57	43	54	46	57	43	85	15	46	54	68	32	64	36	75	25	63	37
7	74	26	44	56	44	56	62	38	81	20	50	50	62	38	66	34	72	28	79	21
8	73	27	47	53	46	54	69	31	84	16	52	48	71	29	68	32	75	25	84	16
9	71	29	63	37	56	44	68	32	84	16	56	44	80	20	67	33	80	20	86	14
10	100	0	75	25	55	45	76	24	81	19	60	40	81	19	33	67	57	43	33	67
	74	26	50	50	48	53	67	34	83	17	52	48	70	30	66	35	75	25	80	20
Signif.	.14		.01		.4		.4		.9		.7		.03		.03		.2		.01	

Note: "S" means small or not a problem; "L" means medium or large problem.

Figure 8: Concerns by Arrival Hour – Employee Survey



Parking Location and Cost - Employees

The employee survey inquired about respondents' parking locations and cost. Table 24 shows the results. Nearly three-quarters (71%) answered that they parked at a lot or garage within one block of their workplaces (54%) or at a lot or garage between one and three blocks of their workplaces (17%). Another 17 percent parked at a lot or garage and shuttled to their workplaces. A greater percentage of women (19%) parked at the interceptors than men (13% $p=.04$).

Moreover, 68 percent obtained their parking at no cost to themselves; only 13 percent paid the rather hefty modal cost of eight dollars per day to park without any subsidy from their employers.

Table 24: Parking Location and Cost – Employee Survey

Parking Location	
Park at metered parking close to work N=38	5
Park in non-metered parking on a street N=61	8
Park at a lot or garage within 1 block of my workplace N=388	54
Park at a lot or garage between 1 and 3 blocks from my workplace N= 123	17
Park at a lot or garage more than 3 blocks from my workplace N=27	4
Park at a lot or garage and then take a shuttle to my workplace N=121	17
Parking Cost (choose one)	
My employer provides free parking N=496	68
My employer pays for part of my parking <i>≈ What is YOUR share of parking cost (daily)? \$</i>	71% said \$1 (N=14)
I pay for all the cost of my parking <i>≈ How much does parking cost YOU (daily)? \$</i>	73% said \$8 (N=93)

The ones parking at metered spots were the most likely to pay for their parking (only 13% had the employer pay). **By contrast, free parking was available to 75 percent of those parking within a block, 68 percent of those within three blocks and 74 percent of those parking and taking a shuttle.**

Table 25: Parking Location/Cost and Arrival Time – Employee Survey

Arrival Time	Other	6	7	8	9	10
Parking Location						
Park at metered parking close to work N=38	3	9	15	32	18	24
Park in non-metered parking on a street N=61	3	2	14	50	16	16
Park at a lot or garage within 1 block of my workplace N=388	3	5	26	51	13	2
Park at a lot or garage between 1 and 3 blocks from my workplace N= 123	1	5	29	43	15	7
Park at a lot or garage more than 3 blocks from my workplace N=27	0	4	12	52	24	8
Park at a lot or garage and then take a shuttle to my workplace N=121	0	2	29	61	8	0
Overall average	2	4	26	51	14	3
Parking Cost (choose one)						
My employer provides free parking N=496	3	4	25	54	14	1

Table 25 shows the percentage of employees obtaining various types of parking at different arrival times. Thus, 15 percent of those parking at a metered spot arrived around 7:00 a.m. This compares to the fact that the 7:00 a.m. arrival group constituted 26 percent of all respondents. This discrepancy suggests that the 7:00 a.m. arrival group was disproportionately *unlikely* to use metered parking.

By contrast, 24 percent of those parking at a metered spot arrived around 10:00 a.m., despite only constituting three percent of the sample. **This finding implies that those arriving later tended to use metered (and non-metered street) parking disproportionately.**

Those arriving at peak hours were relatively more likely to find garage or lot parking close to their workplaces or to park and shuttle to their workplaces. They were also slightly more likely to have free parking.

A possible inference from this linkage between arrival times and parking would be **that those who come at peak hours (and thus contributed most to road congestion) are likely to be rewarded with ample or convenient parking. Those avoiding the rush hour are more likely to incur higher costs and less convenience.**

Residents Drive Directly to Work

Ninety-three percent of residents drove at least part of the way to work, with 94 percent of those saying that they drove alone, and another six percent claiming to occasionally drive with someone else. Only one percent was any formal ride-sharing arrangement. Ninety-five percent said that they tended to drive directly from home to work and park adjacent to the workplace, rather than use a park and ride, interceptor lot or combination drive/transit solution (see table 25a).

These findings contrast with those of Annapolis employees, 17 percent of whom park at an interceptor lot and use the shuttle. In this sense, **Annapolis employees are already more likely to use multi-modal transportation options than are regular commuters.**

Table 25a: Percent of Residents Using Various Methods for Getting to Work – Resident Survey

Drive directly from home to work and park adjacent to your workplace	95%
Drive from home to work, but park at a outlying parking lot and take a shuttle into work	2%
Drive from home to work, but park at a park and ride and take a bus from there	1%
Drive from home to work, but take light rail, a MARC train or metro the rest of the way	3%

Attitudes about Current Traveling Arrangements – Satisfaction, How Big a Problem, Cost

Satisfaction with Current Traveling Arrangements

The two surveys asked similar but not identical questions regarding satisfaction with current traveling arrangements. Residents, but not employees, were asked to rate their commuting arrangements. Table 25b (and figure 9) shows the results: most residents perceived their commuting arrangements in quite favorable terms (88% saying excellent or good).

Table 25b: Rate Current Commuting Arrangements – Resident Survey

Excellent	58
Good	30
Fair	9
Poor	3

N=197

Figure 9: Evaluation of Current Driving Arrangement - Residents

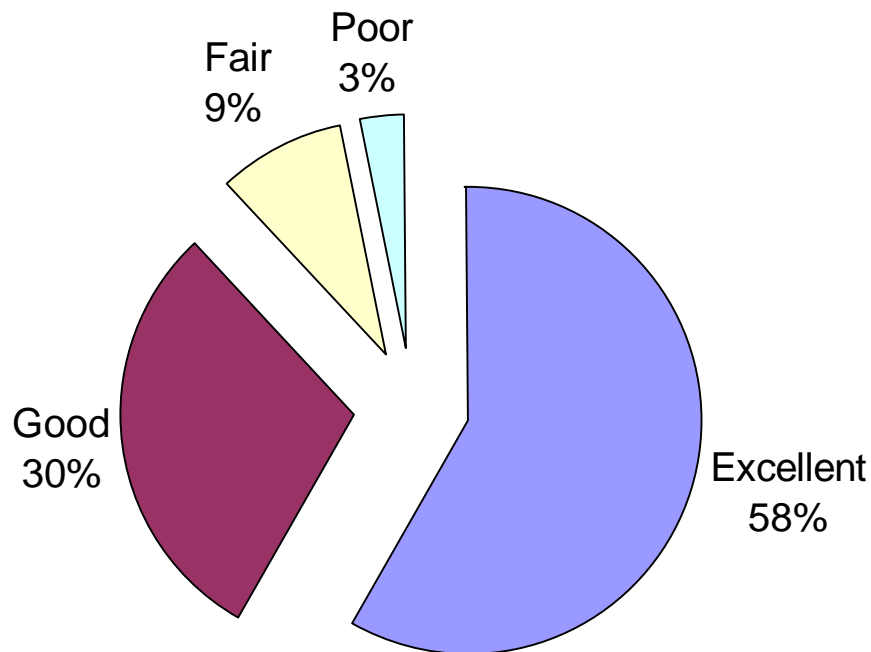


Table 26 shows the combined results for the two surveys, along with the individual results for each survey when questions differed.

Results for the two surveys were quite similar: **Relatively few respondents (9-27%) were dissatisfied (“not very satisfied”) with any of the elements presented.** Employees were especially satisfied with cost (56% saying “very satisfied”) and personal comfort (58%).

Table 26: Satisfaction with Current Traveling Arrangements – Resident and Employee Surveys

	Very satisfied		Somewhat satisfied		Not very satisfied	
	Employee	Resident	Employee	Resident	Employee	Resident
Total amount of time it takes from home to work N=711/199	44%	44	38%	41	18%	14
Convenience N=708/199	48	49	34	46	18	14
Cost N=690/199	56	46	26	37	19	14
Having others with you on your commute to work (if ride-sharing or using public transportation) N=278/182	40	14	32	7	27	9 (70% didn't answer)
Personal comfort N=700	58	--	33	--	9	--
Safety N=702	48	--	40	--	12	--

Importance of Items When Choosing Transportation Mode

The two surveys asked respondents to indicate which item on a list was most important “in determining how you choose to get to work.” The employee survey list had six potential choices and two clearly stood out: **Time (48%) and convenience (36%)**. The results for the residents survey were similar, although the two factors were reversed in rank, with convenience edging out time (50% vs. 44%).³ Women were more concerned with time and safety as opposed to convenience than were men (p=. 01).

Table 27: Importance of Items When Choosing Mode – Resident and Employee Survey

	Resident	Employee
Total amount of time it takes from home to work	44	48
Convenience	50	36
Cost	5	5
Having others with you on your commute to work	2	0
Personal comfort	--	3
Safety	--	8

Cross-tabbing satisfaction with two variables, total time, with the importance of total time and convenience as shown on table 27 provided the following finding (see table 28): **Those who prioritized time did so because they were disproportionately unhappy with the**

³ The resident survey only had a choice of four items, vs. the six items on the employee survey.

time it took to reach their workplaces. By contrast, those who prioritized convenience were disproportionately happy with the time it took. This suggests that that **some respondents would be open to an alternative choice of mode that reduced travel time, if one was available.**

Table 28: Time/Convenience as Most Important by Satisfaction with Travel Time – Employee Survey Only

Priority/Satisfaction with Travel Time	Very satisfied	Somewhat satisfied	Not very satisfied	Cases
Total amount of time it takes from home to work	40	35	25	711
Convenience	50	40	10	708
Overall	43	38	18	

Problems with Aspects of Commuting by Car

A section of the both surveys focused on a set of possible problems when commuting by car, such as congestion, costs and parking. Table 29 shows the results for the employee survey, with each of the answer categories included. Table 29a includes the results for both surveys, with the answer categories recoded into “not/small” (for the employee survey) or “not/little” (for the resident survey) and “medium/large” or “somewhat/serious/severe” problems.

Table 29: How Big a Problem was... - Employee Survey (sorted by ‘medium+large’)

	Not problem	Small Problem	Medium problem	Large problem	Medium + Large	Cases
Congestion on local roads	16	32	33	19	52	684
Not knowing about traffic tie-ups or construction	19	33	23	25	48	684
Highway congestion	24	27	28	22	50	675
Concern about finding a parking space at your workplace	52	13	11	24	35	685
Quality of the roads	33	34	23	10	33	684
Concern about getting into an accident	36	35	18	12	30	686
The distance between the parking lot and your office or worksite	60	14	11	15	26	685
Total amount of time it takes from home to work	48	26	15	11	26	685
The cost of parking, if any	77	2	5	16	21	660
Cost of car ownership overall	54	26	13	7	20	679
Lack of adequate shoulders	52	31	12	5	17	676

Table 29a: How Big a Problem was... - Both Surveys (sorted identically to table 29)

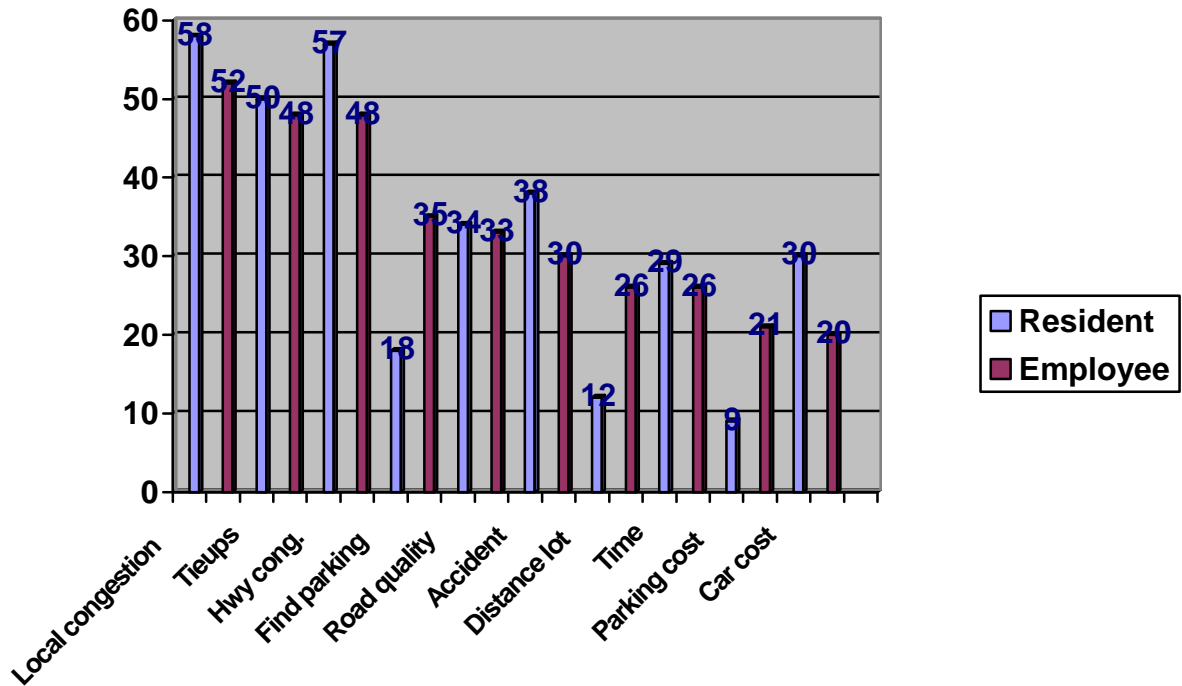
	Not/small/somewhat		Medium/large/serious/severe		Res-Emp	Cases
	Resident	Employee	Resident	Employee		
Congestion on local roads	42	48	58	52	6	684
Not knowing about traffic tie-ups or construction	50	52	50	48	2	684
Highway congestion	43	51	57	48	9	675
Concern about finding a parking space at your workplace	82	65	18	35	-17	685
Quality of the roads	66	67	34	33	1	684
Concern about getting into an accident	62	71	38	30	8	686
The distance between the parking lot and your office or worksite	88	74	12	26	-14	685
Total amount of time it takes from home to work	70	74	29	26	3	685
The cost of parking, if any	91	79	9	21	-12	660
Cost of car ownership overall	70	80	30	20	10	679
Lack of adequate shoulders	63	83	37	17	20	676

Figure 8 highlights some of the differences between the two surveys. Residents were a bit more concerned about highway congestion, the cost of car ownership, or getting into an accident and quite a bit more concerned about the lack of adequate shoulders. (These were represented by the positive numbers in the “Res-Emp” column in table 29a).

Employees were much more concerned about the cost of parking, finding a parking space, and the distance between the parking lot and the workplace. (These were represented by the negative numbers). Women were more concerned with the quality of the roads, getting into an accident, the distance between parking lots and workplaces and the cost of parking.

Thus, the main differences appear to have been that **residents were more concerned about actually traveling to the workplace, while employees were more confident about getting there, but had more concern about the location, cost and availability of parking.** These conclusions should not overlook the fact that traffic congestion was the most cited concern for both groups (see figure 10).

Figure 10: Problems Identified by Residents and Employees



Focusing upon the employee survey only, table 30 shows that **the perception of congestion was clearly related to the time spent on the road** as shown on table 30: overall 19 percent identified local road congestion as a large problem, but 30 percent of those traveling 30 minutes or more did (compared to only 12 percent of those traveling under 30 minutes).

Table 30: Travel Time and Perception of Local Road Congestion as a Problem – Employee Survey

Travel Time/Congestion	not prob	small prob	med prob	large prob
Less than 30 minutes	19	36	33	12
30 minutes or more	10	27	34	30
Overall	16	32	33	19

N=715

Table 31 shows that actual travel time was a decisive factor in shaping respondents’ perceptions of the acceptability of their commute times. **One quarter of those traveling 30 minutes or more identified travel time as a large problem, while only two percent of those traveling less than 30 minutes did so**

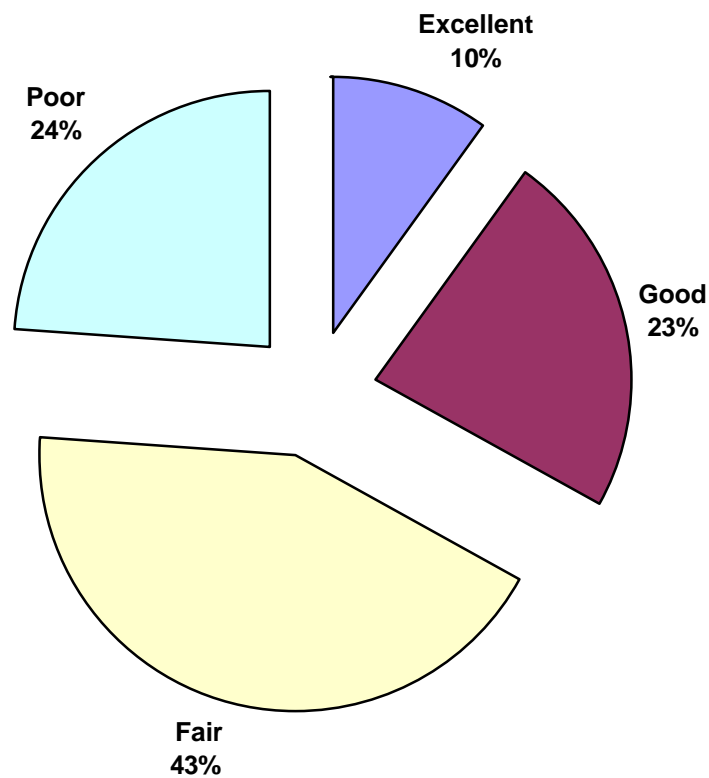
Table 31: Travel Time and Concern about Time it Takes to Get to Work – Employee Survey

Travel Time/Time Concern	not prob	small prob	med prob	large prob
Less than 30 minutes	67	22	8	2
30 minutes or more	15	33	27	25
Overall	48	26	15	11

N=710

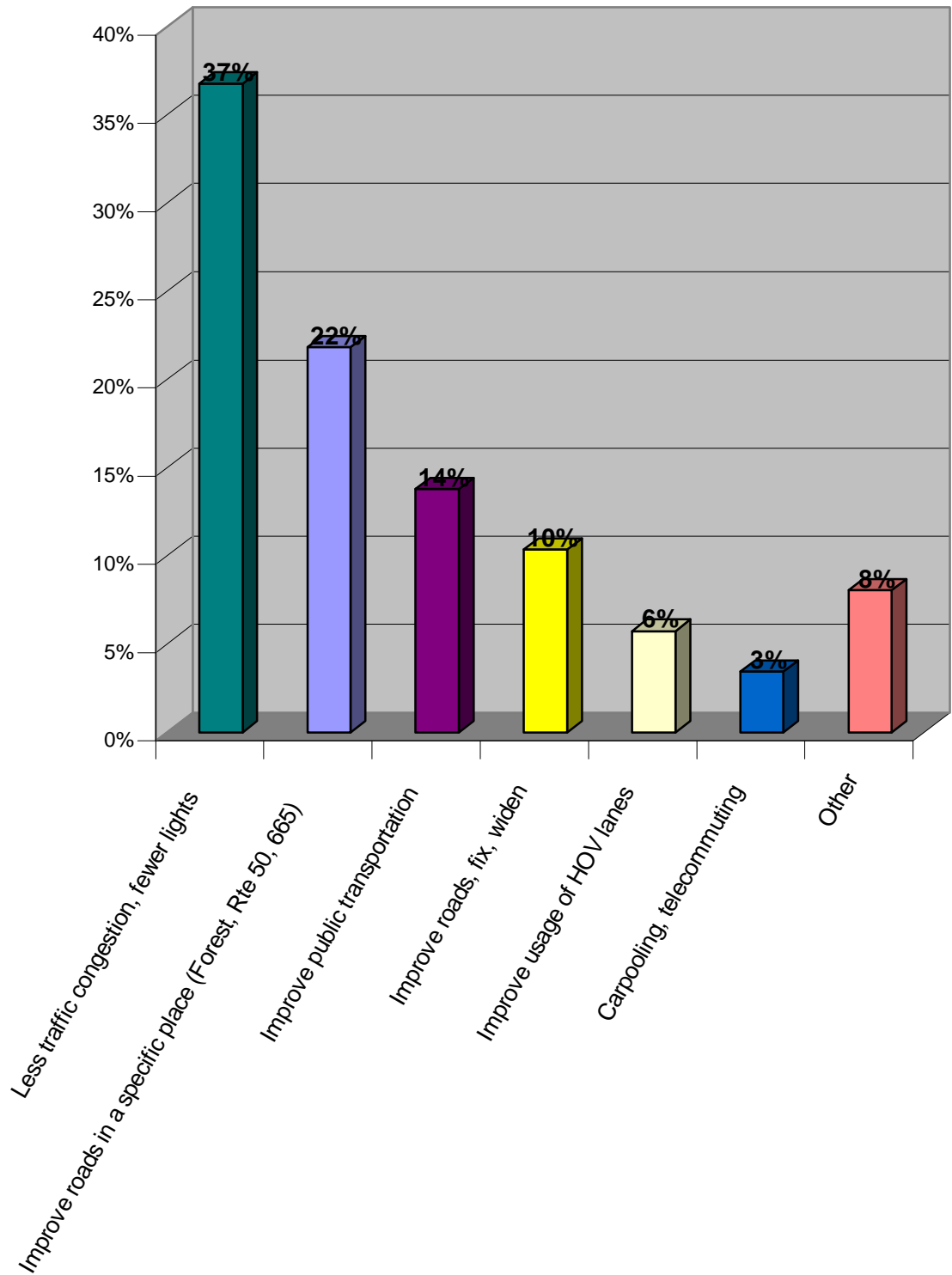
Given the findings above regarding high percentages identifying congestion and tie-ups as the most important problems facing them during their commutes, it was not surprising to find that residents, asked to characterize traffic conditions, did not have a positive view. As seen in figure 10, 43 percent said that conditions were only “fair,” with an even split between those saying “poor” (24%) and “good” (23%). Very few (10%) said “excellent.”

Figure 11: Traffic Condition Evaluation – Resident Survey



Again expressing a notable consistency, residents identified “less congestion” and road improvements as the “one thing” that could most improve their commutes (59% combined, see figure 12). Smaller percentages focused on alternatives to driving such as improving public transportation (14%) or carpooling (3%). Evidently, **most of these commuters have chosen to focus on improvements within the existing paradigm of car usage rather than seek broad new alternatives.**

Figure 12: One thing that would most improve commute (open-ended) - Residents



Cost of Car Usage

Employees were asked to estimate “roughly how much do you spend on your car, taking into consideration all the elements of car ownership such as monthly payments, depreciation, maintenance as well as fuel and parking costs.”

Table 32: Estimated Monthly Cost of Car Ownership – Employee Survey

Cost in dollars per month	Percent Citing
0-100	25
101-200	16
201-300	9
301-400	13
401-500	15
501-600	8
601 or more	13
Total	99

The median cost was \$300. Table 32 shows a wide range of estimated costs however, with one-quarter of the respondents claiming to spend no more than \$100. While it might be tempting to think that this group was wildly underestimating its true expenses, it should be noted that there was a clear relationship between time traveled and estimated cost, as shown on table 33.

Only 18 percent of those traveling over 30 minutes to work stated that their monthly costs were \$100 or less compared to 30 percent of those traveling under 30 minutes. In fact, 21 percent of those traveling over 30 minutes claimed to spend over \$601 a month compared to only eight percent of those traveling under 30 minutes.

Table 33: Travel Time by Estimated Cost per Month – Employee Survey

Travel time/ Estimated cost	\$100 or less	\$101-200	\$201-300	\$301-400	\$401-500	\$501-600	\$601 or more	Total
30 minutes or less	30	15	11	12	15	8	8	100
Over 30 minutes	18	17	8	15	13	8	21	100
Overall	25	16	10	14	15	8	13	100

N=673

A regression analysis revealed that the average basic estimated cost of car ownership was \$196 plus roughly \$5.14 per minute thereafter one way. Thus, a typical commute of around 22 minutes would result in a monthly cost of \$309.08 – about the median value cited for monthly estimated cost.⁴

⁴ Conversely, a regression analysis based on the variable asking for distance from home to workplace indicated a basic cost of \$131 and a per mile cost of \$6.4. A typical 15-mile commute would result in an estimated cost about \$227. Unfortunately, both the time and the mileage was only available using the ranges offered and cannot be precisely known. These calculations are thus only very rough estimates.

Employees Use of Car During the Day at Work

In an effort to evaluate the percentage of employees who leave their cars and do not return to them until returning home, the employee survey asked respondents which of three options best characterized their situation. These options and the relevant percentages are found on table 34.

Table 34: Employee Use of Car during the Day – Employee Survey

I park my car when I arrive and don't return to it until I leave work	50%
I park my car when I arrive and occasionally have to use it during the day prior to leaving work	44%
I park my car when I arrive but frequently have to use it during the day	6%

N=673

Half of the sample claimed that they did not use their cars during the day; another 44 percent replied that they only occasionally had to use it. There was no relationship between gender and propensity to use the car mid-day.

Given the importance of this question for assessing the overall flexibility of employees to leave their cars in an outlying lot, this section examines the characteristics of the fifty percent who did not use their cars during the day in detail. First, demographic variables (age, gender, etc.) and objective behaviors such as travel time will be related to the likelihood that respondents will use their cars during the day. Second, attitudinal variables will be examined.

Table 35 shows which demographic variables were statistically significant when cross-tabulated with the variable measuring employees' use of their cars during the day.

The first column indicates the variable, the second the subcategories within the variable, the third shows the level of statistical significance and presents the answer categories, the fourth shows the percentages found within each of the answer categories as they apply to those *who do NOT use their cars during the day*, the fifth category shows the expected values (those for the sample as a whole) and the last category indicates the difference between the actual and the expected values. The last category has values in the negative or positive range, indicating that those who did not use their cars were more or less prone to answering a particular way compared to the sample as a whole.

The results included the following:

- ✍ Some variables did not have any measurable impact on the propensity to park the car and not use it during the day, including age, race, marital status and gender;
- ✍ Respondents with higher socioeconomic status tended to more likely to use their cars at least occasionally during the day. Traits specifically associated with this included: job (professionals/managers using their cars more), education (those with college

degrees using their cars more), and income (those earning over \$75,000 using their cars more);

Table 35: Demographic Variables with Use of Car during the Day – Employee Survey

Variable	Categories	Stat. Signif.	No Use %	Expected %	Difference
Job/occupation		.01			
	Prof/manager		36	44	-8
	Technical Skilled		22	16	+5
Travel Distance		.01			
	Under 16 miles		46	54	-8
	Over 16 miles		54	46	+8
Travel Time		.12			
	<30		58	61	-3
	30>		43	39	+3
Age		.81	No relationship		
Kids	0-5		46		
	6-10		48		
	11-16		50		
	16+		51		
Education		.01			
	Some college or less		59	50	+9
	Bachelors or graduate		41	50	-9
Income		.03			
	\$75k or less		56	51	+5
	\$75k+		44	49	-5
Race		.9	No relationship		
Marital Status		.9	No relationship		
Gender		.4	No relationship		
Ever Used Public Transportation		.01			
	Yes		28	20	+8
	No		12	20	-8
Parking Situation					
	Metered	.12	No relationship		
	Street, non- metered	.01	6	9	-3
	Lot 1 blk	.01	48	55	-7
	Lot 1-3 blks	.09	19	18	+1
	Lot >3 blks	.06	5	4	+1
	Use shuttle	.01	26	17	+8

☞ There was a weak relationship between having younger children and needing to use a car more frequently;

☞ As travel time and especially distance *decreased*, respondents were *more likely* to use their cars;

- ☞ Those parking closest to work were more likely to use their cars than those parking farther away, such as those currently using a shuttle to get to workplaces;
- ☞ Those who had ever used public transportation were less likely to use their cars during the day.

This findings suggest that there three key groups of variables that affect the propensity to use a car during the day: **socioeconomic status, travel distance to work and the opportunity to get easy access to the car by parking near the workplace or use public transportation.**

A regression analysis including variables for each of these factors yielded the following table:

Table 36: Results of Regression Analysis – Employee Survey

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	4.495E-02	.110		.409	.683
Used Public Transpntn	.160	.055	-.131	2.944	.003
Education	6.987E-03	.003	.105	2.375	.018
Income	8.647E-04	.003	.013	.301	.763
Job	1.982E-02	.013	.067	1.525	.128
Travel distance	-8.331E-03	.003	-.125	-3.016	.003
Park within 1 block	.120	.044	.119	2.696	.007

a Dependent Variable: Propensity to use the car during the day; $R^2 = .092$

Looking at the significance levels (far right column), the strongest predictors (i.e., those with the lowest values in the significance column) were travel distance, use of public transportation and close parking location, with location having a positive effect on car usage (i.e., a greater likelihood to use the car during the day), while use of public transportation and travel distance had a negative effect. Education had some positive impact, with income and job/occupation having insignificant impacts.

These findings imply that as employees have easier access to their cars, they are more likely to use them. Moreover, it is possible that those who living relatively close to work might find possibility of e.g., running errands, plausible.

The employee survey had many attitudinal variables including satisfaction scales, ratings and problem scales. Table 37 presents most of these as cross-tabulated with the variable about car use during the day. The first column indicates the variable, the second the subcategories within the variable, the third shows the level of statistical significance and presents the answer categories, the fourth shows the percentages found within each of the answer categories as they apply to those *who do NOT use their cars during the day*, the fifth category shows the expected values (those for the sample as a whole) and the last category indicates the difference between the actual and the expected values. The last category has values in the negative or positive range, indicating that those who did not use their cars were more or less prone to answering a particular way compared to the sample as a whole.

Some variables did not display statistically significant relationships and were omitted altogether or mentioned with the notation “no relationship.”

Table 37: Attitudinal Variables with Use of Car during the Day – Employee Survey

Variable	Categories	Stat. Signif.	No Use %	Expected %	Difference
Satisfaction with current commuting arrangements					
	Total time to work	.01			
		Very satisfied	36	42	-6
		Somewhat satisfied	44	40	+4
		Not very satisfied	20	18	+2
	Convenience	.02			
		Very satisfied	41	47	-6
		Somewhat satisfied	37	35	+2
		Not very satisfied	22	19	+3
	Cost	.4	No relationship		
	Other riders	.12	No relationship		
	Personal comfort	.04			
		Very satisfied	53	58	+5
		Somewhat satisfied	37	33	-4
		Not very satisfied	10	9	+1
	Safety	.11	No relationship		
Most important factor shaping how to get to work		.07			
	Time		45	48	+3
	Convenience		36	36	0
	Cost		6	5	-1
	Other riders		1	0	+1
	Personal comfort		5	4	+1
	Safety		8	7	+1

Table 37: Continued

Variable	Categories	Stat. Signif.	No Use %	Expected %	Difference
How big a problem is...					
	Time	.25	No relationship		
	Hwy congestion	.6	No relationship		
	Road congestion	.3	No relationship		
	Road quality	.8	No relationship		
	Adequate shoulders	.2	No relationship		
	Tie-ups/accident	.6	No relationship		
	Fear accident	.9	No relationship		
	Finding parking	.7	No relationship		
	Distance between lot and work	.01			
		No/small prob	68	74	+6
		Med/big prob	32	26	-6
	Cost of parking	.8	No relationship		
	Cost of car	.2	No relationship		
Describe traffic conditions in Annap.		.8	No relationship		
Considered any other means to get to work?		.4	No relationship		
Alternatives to driving- don't know who to contact to share a ride to work		.01			
	Not problem		37	39	+2
	Small problem		18	19	+1
	Medium problem		8	11	+3
	Large problem		26	21	-5
	Unsure		11	10	-1
Alternatives to driving- worried you wouldn't be able to run errands		.01			
	Not problem		15	12	+3
	Small problem		20	16	+4
	Medium problem		22	23	-1
	Large problem		43	49	-6
	Unsure		1		
Interceptor use: parking and shuttle use was low cost/free		.01			
	Very likely		30	24	+6
	Somewhat likely		21	26	-5
	Not very likely		42	44	-2
	Unsure		7	6	+1

Table 37: Continued

Variable	Categories	Stat. Signif.	No Use %	Expected %	Difference
Interceptor use: shuttles every 5 minutes		.01			
	Very likely		36	30	+6
	Somewhat likely		24	29	-5
	Not very likely		35	37	-2
	Unsure		5	5	0
Interceptor use: cost of parking went up...		.01			
	Very likely		37	30	+7
	Somewhat likely		20	23	-3
	Not very likely		32	35	-3
	Unsure		12	13	-1
Interceptor use: Employer provides incentives		.1	No relationship		
Interceptor use: everyday		.01			
	Very likely		32	23	+5
	Somewhat likely		17	18	-1
	Not very likely		43	50	-7
	Unsure		7	9	-2
Rate based on travel to downtown Annapolis					
Access to downtown	.02	Excellent/Good	32	37	-5
		Fair /Poor	68	64	+4
Ease of parking downtown	.06	Excellent/Good	11	13	-2
		Fair /Poor	89	87	+2
Adequacy of transit	.9	No relationship			
Adequacy of sidewalks	.9	No relationship			
Adequacy of bike lanes	.3	No relationship			
Improve transpntn in Annap: more frequent shuttles	.01	1	27	22	+5
		2	43	43	0
		3	25	26	-1
		4	4	6	-2
		5	3	4	-1

Below is a summary of the major findings:

- ✍✍ Those not using their cars (nonusers) during the day were less satisfied with the time it took to get to work and the convenience and personal comfort of their current arrangements than were car users;
- ✍✍ Nonusers found that time was less important as a “most important factor shaping how to get to work” than was the case for users;
- ✍✍ Nonusers appeared to be unhappy with the distance between their parking lots and their workplaces, citing this to be a bigger problem than for the overall sample;
- ✍✍ When considering alternatives to driving, nonusers were less clear about “who to contact to share a ride to work” than were users;
- ✍✍ Nonusers, unsurprisingly, considered the issue of being “worried about being able to run errands on the way to or from work” as less pressing than did users;
- ✍✍ Nonusers expressed a greater likelihood to use interceptor lots and shuttles than users.
- ✍✍ Nonusers were more likely to use interceptor lots with the provision of frequent shuttles or in the event that the cost of parking increased. They were also more likely to use these lots “everyday” in the event that incentives were provided;
- ✍✍ Nonusers thought that “access to downtown Annapolis” was a bigger problem than did users; and,
- ✍✍ Nonusers were more likely to favor more frequent shuttles in the downtown area.

Overall, nonusers were less content were several aspects of their current arrangements including the time it took to get to work, the distance between parking lots and their workplaces, and the level of personal comfort and convenience.

They seemed to place less emphasis on being able to run errands, and generally were more open to the use of interceptor lots and shuttles.

The receptivity of nonusers to interceptor lots and shuttles might be due to the fact that they were already using such arrangements. To test this hypothesis, parking arrangements were cross tabulated with car usage during the day, with the results shown on table 38.

Table 38: Users and Nonusers Parking Arrangements – Employee Survey

	Nonusers	Users	Overall	Significance
Metered street	5	6	6	.6
Unmetered street	6	11	9	.03
Within one block	48	63	55	.01
Between 1-3 blocks	19	16	18	.3
Over 3 blocks	5	2	4	.03
Shuttle	26	9	17	.01

Nonusers were about three times more likely to already use lots/shuttles to get to work, possibly both explaining their lesser degrees of satisfaction as well as their willingness to entertain similar arrangements, especially if they were further enhanced.

An open-ended question on the employee survey asked respondents to indicate why they might need to use their cars during the day. Table 39 shows the results.

Table 39: Reasons for using Car during the Workday – Employee Survey

Reason	Percent	Cases
Meetings/Appointments for work purposes	52	210
Lunch and Lunch meetings	12	47
Errands – not work related	33	132
Move car – 2 hour limit	3	14
Total	100	403

About half of the respondents (52%) pointed to a variety of work-related off-site meetings: client appointments, meetings with other agencies, site inspections and the like. One third identified errands of a personal nature (doctors appointments, shopping, etc.). Lunch meetings were also frequently mentioned. Fourteen respondents mentioned the need to move their cars every two hours.

Conclusions about Workday Car Usage - Employees

Judging from the findings mentioned in this section, several observations seem warranted regarding the situation for employees. A significant percentage of downtown employees needed to have mid-day access to their cars at least occasionally for professional reasons. These individuals tended to have higher socioeconomic status. They tended to park their cars close to their workplaces. They seem unlikely to ever find interceptor lots and shuttles to be convenient given their situations.

Another significant percentage do not seem to have pressing business that carries them away from their workplaces during the day. They tended not to be professionals or managers. They already disproportionately used interceptor lots/shuttles and appear to be the most likely to continue to do so.

Those who might be persuaded to use the interceptor lots therefore seem to fall into this profile:

- ☞ ~~L~~ack professional justification for having their cars in close proximity
- ☞ ~~H~~ave a minimum of errands that could be done in a short drive from the workplace, possibly due to extended travel distance (can't go home for lunch, do grocery shopping);
- ☞ ~~A~~re particularly cost sensitive, and would be more likely to respond to low cost/free lots combined with other improvements to the operation of the lots/shuttle system (more frequent shuttles, better lighting/security at the lots, better shelters, etc.).

Willingness to Consider Using Transit or Ride-sharing as Alternatives to Driving to Work Alone

In this section attention turns to the issue of the willingness of respondents to use transit or ride sharing.

The employee survey asked respondents whether they had “considered the use of any means other than driving alone to get to work. About one third (34%) said that they had (SEE TABLE 40).

Table 40: Willingness to Consider Alternatives to Driving Alone to Work – Employee Survey

	Percent
Yes	34
No	66
Total	100

N=674

Demographic Variables

A hypothesis to consider in this regard is that **distance from work** might be a factor affecting the propensity for respondents to consider alternatives. A cross tabulation showed that distance from work was indeed statistically related to alternatives variable ($p=.01$): 29 percent of those living close (within 20 minutes) had considered alternatives, compared to 42 percent of those living farther away. Apparently those with a longer (and perhaps more tiring ride) sought to change their arrangements.

Table 41 summarizes the few demographic variables that were statistically related to the willingness to consider alternatives.

Table 41: Demographic Variables with Willingness to Consider Transit/Ride-sharing – Employee Survey

Variable	Categories	Stat. Signif.	Consider %	Expected %	Difference
Travel Time		.01			
	<30		29	34	-5
	30>		42	34	+8
Ever Used Public Transportation		.01			
	Yes		51	35	+15
	No		30	35	-5
Parking Situation					
	Lot 1 blk	.01	31	34	-3
	Use shuttle	.01	48	34	+14

Other than travel time, **prior usage of public transportation very powerfully induced respondents to answer in the affirmative.** Finally, those currently parking at a lot and using the shuttle were much more likely to consider public transit or ride-sharing than those parking close to work.

As with the issue of car usage during the day, the survey also included an open-ended question asking drivers why “you have not used other means of commuting to work?” The results are depicted on table 42.

Table 42: Open-ended Reasons for Not Considering Alternatives to Driving – Employee Survey

	Cases	Percent
No transit near home that runs to Annapolis	137	29
Inconvenient	109	23
Increase travel time too much	38	8
Scheduling conflicts	36	8
Meetings/Appointments	29	6
Running errands, flexibility, independence	31	6
Kids, daycare, school	24	5
Don't know of anyone with who to ride-share	12	3
I live too far	14	3
Couldn't get home for an emergency	10	2
Overtime	11	2
Comfort/safety	8	2
I live too close	10	2
Reliability of transit/clear schedules	9	2
Total	478	101

Clearly, the lack of transit going from the respondent’s neighborhood to Annapolis was the most obvious rationale for not using public transportation (cited by 29%). Inconvenience was also frequently mentioned (23%) with respondents sometimes explaining that “I would have to drive 10 miles to get to a transit stop, park and then wait...once I’m in the car, I might as well continue driving to work.” Some mentioned the need to work odd hours and difficulties of adhering to limited bus runs that are available. “If the bus stops running at 5:30 p.m. and I miss it, what would I do then...” said one respondent. Many cited either the need for flexibility in dealing with off-site appointments or errands (both 6%). Some individuals mentioned that they didn’t know anyone with whom to share a carpool (“I don’t know anyone who works in Annapolis near where I live...”). Some said that they lived too far; others mentioned that they lived “too close.”

Attitudinal Variables Affecting Willingness to Consider Transit or Ride-sharing

By contrast to the situation regarding demographic variables, there were quite a few attitudinal variables which displayed statistically significant relationships with the “willingness to consider transit or ride-sharing” variable.

Table 43 presents those variables that proved statistically relevant.

Table 43: Attitudinal Variables with Willingness to Consider Transit/Ride-sharing – Employee Survey

Variable	Categories	Stat. Signif.	Would Consider %	Expected %	Difference
Satisfaction with current commuting arrangements					
	Total time to work	.02			
		Very satisfied	36	42	-6
		Somewhat satisfied	40	40	0
		Not very satisfied	24	18	+6
	Convenience	.01			
		Very satisfied	39	46	-7
		Somewhat satisfied	38	35	+3
		Not very satisfied	23	19	+4
	Cost	.01			
		Very satisfied	48	55	-7
		Somewhat satisfied	26	26	0
		Not very satisfied	26	19	+7
	Personal comfort	.02			
		Very satisfied	53	58	-5
		Somewhat satisfied	34	33	+1
		Not very satisfied	13	9	+4
	Safety	.03			
		Very satisfied	43	48	-5
		Somewhat satisfied	41	40	+1
		Not very satisfied	16	12	+4

Table 43: continued

Variable	Categories	Stat. Signif.	Would consider %	Expected %	Difference
Most important factor shaping how to get to work		.01			
	Time		43	49	-6
	Convenience		39	35	+4
	Cost		8	5	+3
	Other riders		1	0	+1
	Personal comfort		3	4	-1
	Safety		7	8	-1
How big a problem is...					
	Time	.02			
		No/small prob	68	74	-6
		Med/big prob	31	26	+5
	Hwy congestion	n			
	Road congestion	Nr			
	Road quality	Nn			
	Adequate shoulders	N			
	Tie-ups/accident	N			
	Fear accident	.06			
		No/small prob	66	70	-4
		Med/big prob	34	30	+4
	Finding parking	.01			
		No/small prob	58	65	-7
		Med/big prob	42	35	+7
	Distance between lot and work	.01			
		No/small prob	66	74	-8
		Med/big prob	34	26	+8
	Cost of parking	.01			
		No/small prob	73	80	-7
		Med/big prob	27	20	+7
	Cost car ownership	.01			
		No/small prob	74	80	-6
		Med/big prob	26	20	+6
Describe traffic conditions in Annap		.05			
		Exc/Good	25	30	-5
		Fair/Poor	75	70	+5
Alternatives to driving-increase travel time		.01			
		No/small prob	26	18	+8
		Med/big prob	74	82	-8

Table 43: continued

Variable	Categories	Stat. Signif.	Would consider %	Expected %	Difference
Alternatives to driving-	don't like switching transp modes	.01			
		No/small prob	69	55	+14
		Med/big prob	31	45	-14
Alternatives to driving-	don't like stand outside	.01			
		No/small prob	32	22	+10
		Med/big prob	68	78	-10
Alternatives to driving-	Requires too much organization	.01			
		No/small prob	48	35	+13
		Med/big prob	52	65	-13
Alternatives to driving-	No transit nr home.	.05			
		No/small prob	29	24	+5
		Med/big prob	71	76	-5
Alternatives to driving-	Couldn't run errands	.01			
		No/small prob	39	28	+11
		Med/big prob	61	72	-11
Interceptor use:	parking and shuttle use was low cost/free	.02			
		Very likely	28	24	+4
		Somewhat likely	30	26	+4
		Not very likely	35	44	-9
		Unsure	7	6	+1
Interceptor use:	shuttles every 5 minutes	.01			
		Very likely	34	30	+4
		Somewhat likely	34	28	+6
		Not very likely	27	37	-10
		Unsure	5	5	0
Interceptor use:	Cost of parking increases	.02			
		Very likely	37	30	+7
		Somewhat likely	24	23	+1
		Not very likely	27	35	-8
		Unsure	13	13	0
Interceptor use:	Employer provides incentives	.01			
		Very likely	41	35	+6
		Somewhat likely	35	28	+7
		Not very likely	18	30	-12
		Unsure	6	8	-2

Table 43: continued

Variable	Categories	Stat. Signif.	Would consider%	Expected %	Difference
Interceptor use:	Use lots everyday	.03			
		Very likely	30	23	+7
		Somewhat likely	17	18	+1
		Not very likely	43	50	-8
		Unsure	10	9	+1
Rate based on travel to downtown Annapolis		.02			
	Adequacy of sidewalks	Excellent/Good	53	59	-6
		Fair /Poor	47	41	+6
Ranking – ways to improve transportation					
	Increase # of garages in Annap.	.07			
		1	22	22	0
		2	48	43	+5
		3	19	26	-7
		4	7	6	+1
		5	4	4	0

Below is a summary of major findings, presented in terms of those characteristics more likely to be found among those who *were* willing to consider alternatives to driving:

- ☞ They were less satisfied with most aspects of their current arrangements such as the time, convenience, cost, personal comfort and safety;
- ☞ They placed greater emphasis on convenience and cost rather than on time as their most important factor determining how to get to work;
- ☞ They were more likely to be concerned with accidents, an inability to find parking spaces, the distance between parking lots and workplace, the cost of parking and car ownership. They were also more critical of traffic in downtown Annapolis;
- ☞ They were less preoccupied by some of the possible obstacles to considering transit including increasing time, difficulties of switching transportation modes, standing outside waiting for transit, self-organizing, proximity to transit, and the greater difficulties of running errands;
- ☞ They were more receptive to all suggestions dealing with interceptor lots such as making their cost low and having more frequent shuttles.

Conclusions about those Willing to Consider Alternatives to Driving Alone

This group appears to be characterized by a more difficult current commute – longer, with parking already less proximate to their workplaces. They were already more likely to have used public transportation (no surprise given the greater likelihood of having to use current interceptor/shuttle arrangements). Clearly, the group was disproportionately unhappy about many aspects of their current arrangements and less preoccupied with transit obstacles.

It is nevertheless important to note that this group only constituted one-third of the sample.

Some ambiguities in the analysis of data remain: Do these findings indicate a greater predisposition to transit use as essentially just an extension and improvement in the current interceptor/shuttle arrangement, or a desire for a more comprehensive solution – fixed rail, express buses – starting from their homes and extending to the workplace. Given that the group travels a longer distance and time, it might be that a comprehensive solution is implied. But given the disproportionate use of interceptor/shuttles, the suggestions for improvements such as “employer incentives” or “more frequent shuttles” might seem like personal gains without any changes in the current paradigm.

Moreover, it is important to remember that when asked to place a priority on the single change that could most improve transportation in Annapolis, 70 percent this group made “increasing the number of parking garages” a first or second choice. It seems prudent not to overestimate the overall receptivity to transit options.

Closed ended Questions about Alternatives

Looking at the whole sample, rather than those willing to consider other means, it is possible to identify perceived impediments to adopting alternatives to driving as solicited in a closed-ended section of the questionnaire. Table 44 shows the possible reasons for not considering alternatives and the percentages indicating that a given item was a problem.

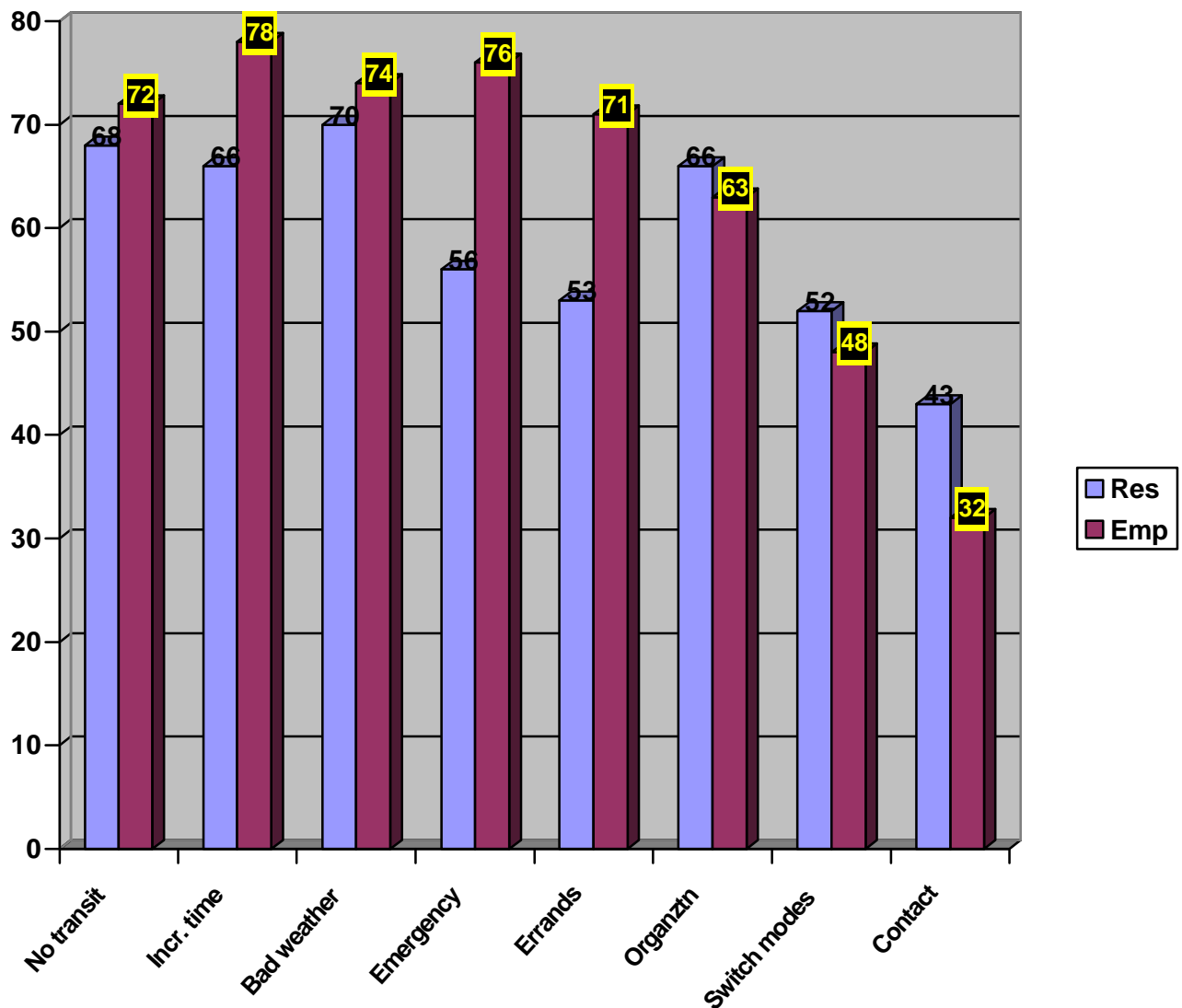
Table 44: Factors Preventing Respondents from Considering Alternatives to Driving – Employee Survey

	Not problem	Small Problem	Medium Problem	Large Problem	Unsure	Cases
There is no public transportation near my house	14	8	10	62	6	641
It would increase your travel time too much	7	11	22	56	4	635
You don't like having to stand outside in poor weather waiting for buses	7	14	22	55	1	635
You are worried that you could not get home in an emergency	10	13	21	55	1	636
You are worried that you wouldn't be able to run errands on the way to or from work	12	16	22	49	1	639
It would require too much organization to avoid missing buses or trains	14	20	23	40	3	626
You don't like to switch from one type of transportation to another	31	21	20	24	4	630
You don't know who to contact to share a ride to work	39	18	11	21	11	613

This list confirms an earlier finding based on the open-ended question: The lack of conveniently situated public transportation (62% saying “large problem”) is the paramount problem, followed closely by the likely increase in travel time (56%). Concerns about getting home in an emergency (55%) and dealing with inhospitable conditions waiting for the bus (55%) were also significant items. Forty-nine percent of the sample mentioned the inability to run errands as a large problem.

The resident survey included a similar set of questions. Table 44a shows the results using the scale employed for the resident survey (having five rather than four answer categories). Based on recoded answer categories, the results for the two surveys can be more easily compared on figure 13.⁵

Figure 13: How big a problem is...Comparison of Surveys



⁵ For the resident survey, the three categories “somewhat,” “severe,” and “serious” – were combined; for the employee survey, the categories “medium” and “large” were combined.

Table 44a: Factors Preventing Respondents from Considering Alternatives to Driving – Resident Survey

	Not problem	Little Problem	Somewhat problem	Serious problem	Severe problem	No answer
There is no public transportation near my house N=166	16	9	11	15	46	7
You don't like having to stand outside in poor weather waiting for buses N=170	17	8	19	17	34	5
You are worried that you wouldn't be able to run errands on the way to or from work N=165	30	12	16	12	26	5
It would increase your travel time too much N=170	20	9	27	18	21	5
You are worried that you could not get home in an emergency N=166	31	8	15	19	21	5
It would require too much organization to avoid missing buses or trains N=167	20	9	27	18	21	5
You don't know who to contact to share a ride to work N=165	47	10	12	7	14	11
You don't like to switch from one type of transportation to another N=169	37	11	21	11	11	8

Employees and residents were quite similar in the emphasis placed on the lack of transit, the increase in time, the desire to avoid standing in bad weather (with women especially preoccupied by this), the need for more organization, and the lack of desire to switch transportation modes. Employees tended to place a greater emphasis on getting home in an emergency and running errands. Indeed, while residents showed a range of responses for the first five items stretching from a low of 53 to a high of 70 percent, employees' range was only from 72 to 78 percent.

Thus, it is likely that the lack of transit, the increased time, poor conditions, difficulties of getting home in an emergency and of doing errands were all part of a complex of important factors impeding employees from considering alternatives to driving.

This finding was reaffirmed by findings based on the following procedure: A computed variable was created using all the items listed in table 44 to form a “small problem-big problem” scale. A disproportionate percentage of respondents on the “big problem” side of the scale were *not* willing to consider alternatives to driving (76% vs. 66% for the whole sample, $p=.01$). Thus, it is likely that these problems are cumulative in nature – the more problems appear to respondents as significant and interrelated, the more likely they will not consider alternatives.

Problems with Alternatives to Driving – Shopping Habits

The resident survey included a section on shopping habits that might partly shed light on the nature of the errands that commuters currently perform. Figure 14 shows that residents tended to

shop both at grocery stores near (within two miles) their houses (56%) as well as near their workplaces (40%, N=216).

Figure 14: Distance to Grocery from Home and Workplace (%) – Resident Survey

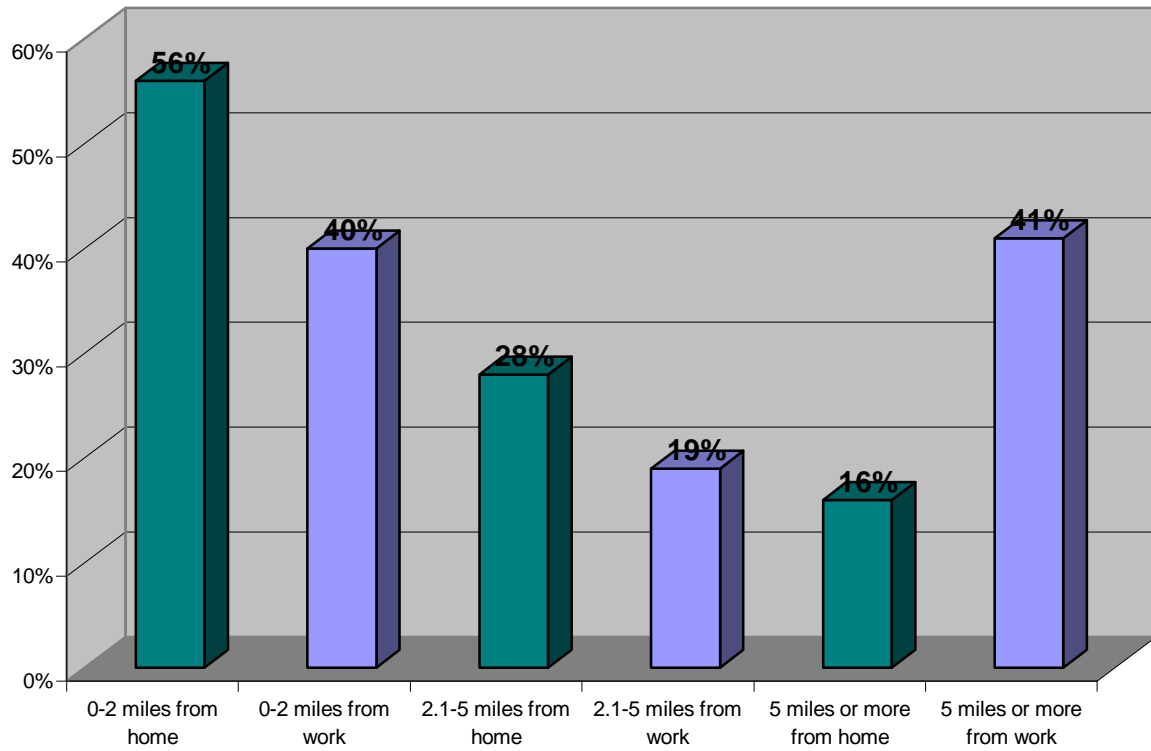


Table 45: “When do you mostly shop – on weekends, on the way to work, the way from work, or some other time?” - Resident Survey

	(1) Weekends	(2) On way to work	(3) Way from Work	(4) Other times	Cases
All respondents	28	1	17	54	351
Full-time workers only	40	1	30	28	169
Retired only	14	1	0	85	79

Table 45 shows that while in general, only 17 percent of residents shopped on their way home (including full/part-time, unemployed, retired, etc.), 30 percent of those working full-time did so. This implies that **shopping is for many workers part of the commute from workplace to home.**

Moreover, as seen in table 46, it is clear that under any circumstances, residents overwhelmingly use their cars (93%) rather than any other means to shop. Most (57%) are “very satisfied” with transportation to get to shopping (with another 28% only “somewhat satisfied and 11% “not very satisfied”).

Thus, the **ownership and use of a car seem virtually mandatory even for running errands,** showing the difficulty of converting car users to other modes given the primordial current need for owning vehicles.

Table 46: “How do you get to your shopping area?” – Resident Survey

	Percent
Own car	93
Friend’s or relative’s car	2
Walk	1
Bicycle	0
Bus	3
Other	1
Subtotal	100

(N=337)

Main Conclusions – Alternatives to Driving

The main conclusion from this section is that **in the absence of a comprehensive, flexible, and reliable system of public transportation, many potential users will inevitably find it more convenient and time efficient to continue driving their cars.** Partial solutions appear unlikely to shift individuals away from primary dependency on their personal vehicles.

Would Commuters Use Interceptor Lots?

Both residents and employees were asked about their willingness to use interceptor lots at the Naval Stadium and in Parole.

Most residents did not plan on using such lots (51% saying not very likely, see table 47).

Table 47: Likelihood to Use Interceptor Lots – Resident Survey

Very likely	21
Somewhat likely	27
Not very likely	51
No opinion	6

N=349

An analysis of **demographic variables** produced only weak associations.⁶ Based on these weak associations, the best characterization of likely users would emphasize the following traits:

- ✘ Not within the 30-44 age group (thus, being older or younger);
- ✘ Younger, rather than older, children;
- ✘ Having only some college (or less);
- ✘ Having income under \$100,000;
- ✘ Being non-white;
- ✘ Being other than married;
- ✘ Being female.

An analysis of attitudinal variables was based on the battery of questions that asked residents to say whether certain changes to the transportation system were important. Table 48 shows the percentages of those favorable or opposed to a particular change that were likely to use interceptors.

⁶ For these calculations, the interceptor variable was recoded into just two categories: very or somewhat likely vs. not very likely. The variables that were statistically significant were: income, race, and to a lesser extent gender. The attitudinal variables were also recoded identically to the interceptor variable.

There was little variance in the likelihood that those **favorable to any** of the changes would or wouldn't use the interceptor lots/shuttles. Among those saying that the various improvements were important, the range of variation in likelihood to use the interceptors was small, starting at 51 percent for those favorable to increasing the number of downtown parking garages to 57 percent for those favorable to creating interceptors with frequent shuttles.

However, what was more revealing was the range of responses for those who were less favorable to the various suggested changes in the transportation system. The range in these cases was from 19 percent saying that would use interceptors (from those saying that the idea of interceptors was not important) to 43 percent (from those saying that improving pedestrian facilities was not important). Apparently, attitudes predict likely behaviors insofar as opposition to the creation of interceptors was strongly correlated to unlikely usage.

Still, it is notable that **43 percent of those favorable to the creation of interceptors were still unlikely to use them**. This implies that **while such respondents thought interceptors to be a good idea, it was probably a good idea for someone else**.

Table 48: Attitudes towards Changes by Likelihood to Use Interceptors – Resident Survey

	Likely to use	Unlikely to use	Cases	Signif.
Improve pedestrian facilities – Important	53	47	240	
- Not Important	43	57	90	.1
Improve bike facilities – Important	53	47	213	
- Not Important	41	59	97	.05
Increase parking garages – Important	51	49	270	
- Not Important	41	59	61	.1
More frequent shuttles – Important	56	44	258	
- Not Important	32	68	47	.01
Create interceptor – Important	57	43	272	
- Not Important	19	81	47	.01

Respondents to the employee survey were also asked about the likelihood that they would use interceptor lots/shuttles. Rather than asking generally how likely they would be to use the lots, the questionnaire asked respondents to consider whether the presence of certain conditions would make them very, somewhat or not very likely to use the interceptor/shuttle system.

Table 49: Likelihood of Using Interceptor/Shuttle Under Various Conditions – Employee Survey

Condition	Very likely	Somewhat likely	Not very likely	Unsure	Cases
Parking and shuttle use at the lots was very low cost or free	25	26	44	5	669
Shuttles were available at least every 5 minutes	30	28	37	5	671
The cost of parking in downtown Annapolis went up significantly	30	23	35	12	655
Your employer provided economic incentives for you to park in the outlying lots	35	28	30	8	658
Assuming that all of the conditions above occurred, what is the likelihood that you would use these lots:					
Everyday?	24	18	49	9	609
At least twice a week?	23	29	38	10	547

As seen on table 49, a majority in each case said they would be at least somewhat likely to use interceptor lots/shuttles. **Between one-quarter and one-third of the sample claimed that it was “very likely” that they would use the system, depending on the conditions.** Frequency of use did not vary for those in the “very likely” column: a similar percentage said they would use the system everyday and at least twice a week. However, **occasional use was somewhat more likely** since only 18 percent said that it was somewhat likely that they would use the system everyday, while 29 percent thought usage twice a week was somewhat likely.

Currently 17 percent of all respondents “park at a lot or garage and then take a shuttle to my workplace.” Two-thirds (67%) of those currently parking at interceptors said they were “very likely” to park at the interceptor/shuttle system “everyday” compared to about one-quarter of the total sample and 17 percent of those not currently parking at interceptors.

While only 19 percent of those currently parking in the interceptor said that they were “not very likely” to park there everyday, 62 percent of those who do *not* park there now said they were “not very likely” to park there even when all the favorable conditions applied.

These findings suggest that a large percentage of the group likely to take advantage of new incentives and improvements at the facilities already parks at such lots in *the absence of incentives and improvements*.

Assuming that the 17 percent currently using such arrangements held were to continue usage in the absence of change, only an additional seven percent (to reach 24% of the sample saying they were “very likely”) would be added through refinements to the system. Naturally, inclusion of the “somewhat likely” users would make that percentage increase considerably.

Table 50 provides a summary of the percentages of each demographic group saying that they were “very likely” to use an interceptor/shuttle system.

Below is a summary of major findings:

- ✍ ✍ Government employees were much more likely to use the system than were others;
- ✍ ✍ Those with clerical or technical/skilled jobs were more likely to use the system than were professionals and managers or salespersons;
- ✍ ✍ A very high percentage of those who have used public transport claimed to be likely to use the system;
- ✍ ✍ Those traveling over 16 miles were more likely to use the system than those traveling less;
- ✍ ✍ Those traveling for more than 20 minutes were more likely to use the system;
- ✍ ✍ Those arriving between 7 and 8 a.m. were more likely to use the system than those arriving earlier or later;
- ✍ ✍ Those likely to use their cars during the day were one-half as likely to use the system as those who do not use their cars;
- ✍ ✍ Those leaving between 4 and 5 p.m. were slightly more likely to use the system;
- ✍ ✍ Those aged 18-29 and 45-59 were somewhat more likely to use the system;
- ✍ ✍ Those with incomes under \$75,000 were more likely to use the system.

These results echo those from the discussion of those most likely to use their cars during the day or consider the use of public transportation. In short, **those most likely to use the system are individuals with lower socio-economic status who travel far, don’t use their cars during the day and otherwise have a very routinized work schedule. Women, whose demographic profile tend to fit into many of the categories listed above, might be especially likely to fall into the set of likely users (and in fact were almost 30 percent more likely than men to say that they would use interceptors with enhancements: 29 vs. 21 percent).**

Table 50: Demographic Groups by Interceptor “Very Likely” Use - Employee Survey

Variable	Category	Percentage very likely to use	Cases	Signif.
Industry	Govt.	31		
	All others	15		.01
Job	Sales	21	39	
	Restaurant	28	18	
	Clerical	35	156	
	Technical	31	91	
	Professional	20	235	.01
Used public transport	Yes	67	116	
	No	14	416	.01
Travel distance	Under 16 miles	22	307	
	Over 16 miles	31	244	.05
Travel time	Up to 20 minutes	22	339	
	More than 20 min.	32	210	.02
Arrival time	6-6:45	26	27	
	7:00-7:45	35	154	
	8:00-8:45	24	256	
	9:00-10:00	19	91	
	Others	6	17	.06
Use car during the day	Yes	16	263	
	No	35	266	.01
Departure time	16:00-16:55	32	158	
	Others	27	339	.5
Age				
	18-29	30	76	
	30-44	22	175	
	45-59	28	250	
	60+	19	43	.3
Education				
	Some college or less	28	254	
	Bachelors or more	25	284	.5
Income	0-\$75,000	31	260	
	Over \$75,000	22	245	.05

This section examines how attitudinal variables were related to the likelihood of using proposed interceptor lots. Table 51 presents a comprehensive list of the attitudinal variables included in the survey, with the percentages of each answer category saying they were “very likely” to use the interceptors. Cases and level of statistical significance are listed to the right of the percentages.

Below is a summary of the major findings stressing the situation for those with a *greater* likelihood of using the interceptor/shuttle arrangement:

- ✍ ✍ Those who were more dissatisfied with all elements of their current arrangements tended to show a higher intended propensity to use the interceptors;
- ✍ ✍ Those who had considered using means of getting to work other than driving along;
- ✍ ✍ Those who considered either changing transportation modes or standing outside in bad weather waiting for buses to be not or a small problem;
- ✍ ✍ Those who considered a medium or large problem not knowing who to contact for ride-sharing;
- ✍ ✍ Those who felt that the ease of access to downtown Annapolis was poor or fair;
- ✍ ✍ Those who thought that it was a high priority to have more frequent shuttles around downtown Annapolis
- ✍ ✍ Those who thought it a high priority that the use of satellite lots with frequent shuttles be encouraged;
- ✍ ✍ Those more likely to use the interceptors when various specific conditions applied such as frequent shuttles or the provision of employer incentives were most likely to use the system in general.

Other correlates with the greater envisioned likelihood to use interceptor lots were:

- ✍ ✍ Those who found the total amount of travel time to be a medium or large problem;
- ✍ ✍ Those who found that not knowing about traffic tie-ups was a medium or large problem;
- ✍ ✍ Those who said that concern about finding parking was a medium or large problem;
- ✍ ✍ Those who said that concern about the distance between parking and work was a medium or large problem;
- ✍ ✍ Those who said that concern about the cost of parking was a medium or large problem.

These findings suggest that **those who were least satisfied with their current arrangements were the most open to using the interceptor/shuttle alternative. They were less likely to put an emphasis on the impediments to public transportation in general. They also were drawn by any additional incentives or improvements to current interceptor/shuttle arrangements.**

Table 51: Attitudinal Variables with “Very Likely” to use Interceptor Arrangement – Employee Survey

Variable	Answer choice	Percentage very likely to use	Cases	Signif.
How satisfied are you with the following aspects of your current arrangement?				
Total time from home to work	Very+somewhat satisfied	22	441	
	Not very satisfied	43	106	.01
Convenience	Very+somewhat satisfied	22	446	
	Not very satisfied	43	99	.01
Cost	Very+somewhat satisfied	23	437	
	Not very satisfied	37	98	.01
Having others with you	Very+somewhat satisfied	37	155	
	Not very satisfied	28	57	.04
Personal comfort	Very+somewhat satisfied	23	497	
	Not very satisfied	53	45	.01
Safety	Very+somewhat satisfied	24	480	
	Not very satisfied	40	62	.01
Which of these items is the most important in determining how you choose to get to work?				
	Time	27	270	
	Convenience	22	189	
	Cost	52	29	
	Having others with you	50	2	
	Personal comfort	5	21	
	Safety	26	38	.02
If you travel to your workplace by car, how much of a problem is each of the following issues for...?				
Total time	Not/small problem	21	386	
	Medium/large problem	37	148	.01
Highway congestion	Not/small problem	22	266	
	Medium/large problem	28	260	.2
Local road congestion	Not/small problem	23	250	
	Medium/large problem	26	281	.4
Road quality	Not/small problem	24	358	
	Medium/large problem	27	175	.6
Lack of adequate shoulders	Not/small problem	24	433	
	Medium/large problem	30	97	.4
Not knowing about tie-ups	Not/small problem	22	272	
	Medium/large problem	28	262	.1
Concern about accident	Not/small problem	21	378	
	Medium/large problem	35	158	.01
Concern finding parking	Not/small problem	22	354	
	Medium/large problem	31	182	.01
Distance between parking/work	Not/small problem	18	398	
	Medium/large problem	46	138	.01
Parking cost	Not/small problem	24	419	
	Medium/large problem	30	101	.02
Car ownership cost	Not/small problem	23	433	
	Medium/large problem	32	100	.2

Table 51: continued

Variable	Answer choice	Percentage very likely to use	Cases	Signif.
Overall, how would you describe traffic conditions around the Annapolis area during your commute				
	Excellent and good	22	164	
	Fair and poor	27	364	.4
Have you considered the use of any means other than driving to get to work?				
	Yes	33	171	
	No	22	357	.02
Using the list below, please indicate how big a problem each of the following might be in preventing you from using alternatives to driving alone:				
Increased travel time	Not/small problem	25	87	
	Medium/large problem	24	406	.1
Don't like switching transp. Modes	Not/small problem	28	271	
	Medium/large problem	19	220	.01
Don't like standing in bad weather	Not/small problem	29	115	
	Medium/large problem	24	388	.01
Requires too much organization	Not/small problem	29	175	
	Medium/large problem	22	108	.09
No public transportation near house	Not/small problem	30	368	
	Medium/large problem	24	206	.3
Don't know who to contact for ride-sharing	Not/small problem	18	279	
	Medium/large problem	34	170	.01
Couldn't get home in emergency	Not/small problem	24	115	
	Medium/large problem	25	387	.5
Couldn't run errands	Not/small problem	31	143	
	Medium/large problem	22	362	.1
Transportation planners are considering ways to maintain or improve access to downtown Annap. In ways other than building additional parking structures in the immediate downtown area. Planners would like your input regarding some of the ideas they are reviewing:				
Parking and shuttle use at the lots was very low cost or free	Very+somewhat likely	45	276	
	Not very likely	6	250	.01
Shuttles were available at least every 5 minutes	Very+somewhat likely	39	321	
	Not very likely	9	213	.01
Cost of downtown parking went up significantly	Very+somewhat likely	34	296	
	Not very likely	12	199	.01
Employer provided economic incentives	Very+somewhat likely	35	342	
	Not very likely	9	174	.01
Assuming that all of the conditions above occurred, what is the likelihood that you use these lots?				
At least twice a week	Very likely	52	109	
	Somewhat likely	3	125	
	Not very likely	1	207	.01

Table 51: continued

Variable	Category	Percentage very likely to use	Cases	Signif.
Based on your travel to downtown Annapolis, please rate the following:				
Ease of access to the downtown area	Excellent and good	21	202	
	Fair and poor	28	327	.2
Ease of parking in downtown area	Excellent and good	17	72	
	Fair and poor	28	466	.03
Adequacy of public transportation	Excellent and good	33	117	
	Fair and poor	30	286	.2
Adequacy of sidewalks	Excellent and good	26	307	
	Fair and poor	29	209	.5
Adequacy of bike lanes	Excellent and good	34	35	
	Fair and poor	27	322	.6
Thinking about the ways in which transportation in and out of downtown Annapolis might be improved for you and others, please rate the following options in terms of their likely contribution to improving conditions:				
Provide improved pedestrian facilities	Top 2	31	117	
	Bottom 3	24	411	.3
Provide improved bicycle facilities	Top 2	28	103	
	Bottom 3	25	421	.7
Increase the number of parking garages in downtown Annapolis	Top 2	26	383	
	Bottom 3	27	153	.3
More frequent shuttles around downtown Annapolis	Top 2	31	340	
	Bottom 3	19	194	.01
Encourage the use of satellite lots with frequent shuttles to downtown	Top 2	31	298	
	Bottom 3	20	141	.01
Transportation planners are considering ways to maintain or improve access to downtown Annapolis in ways other than building additional parking structures in the immediate downtown area. Planners would like your input regarding some of the ideas they are reviewing. One idea is to build outlying lots where commuters could park and then ride a shuttle to their workplaces. The Naval Stadium and Parole Plaza are two sites being considered. Please indicate how likely you would be to use these lots under the following conditions.				
Parking and shuttle use at the lots was very low cost or free	Very likely	47	276	
		6	250	.01
Shuttles were available at least every 5 minutes	Very likely	39	321	
		9	213	.01
The cost of parking in downtown Annapolis went up significantly	Very likely	34	296	
		12	199	.01
Your employer provided economic incentives for you to park in the outlying lots	Very likely	35	342	
		9	174	.01

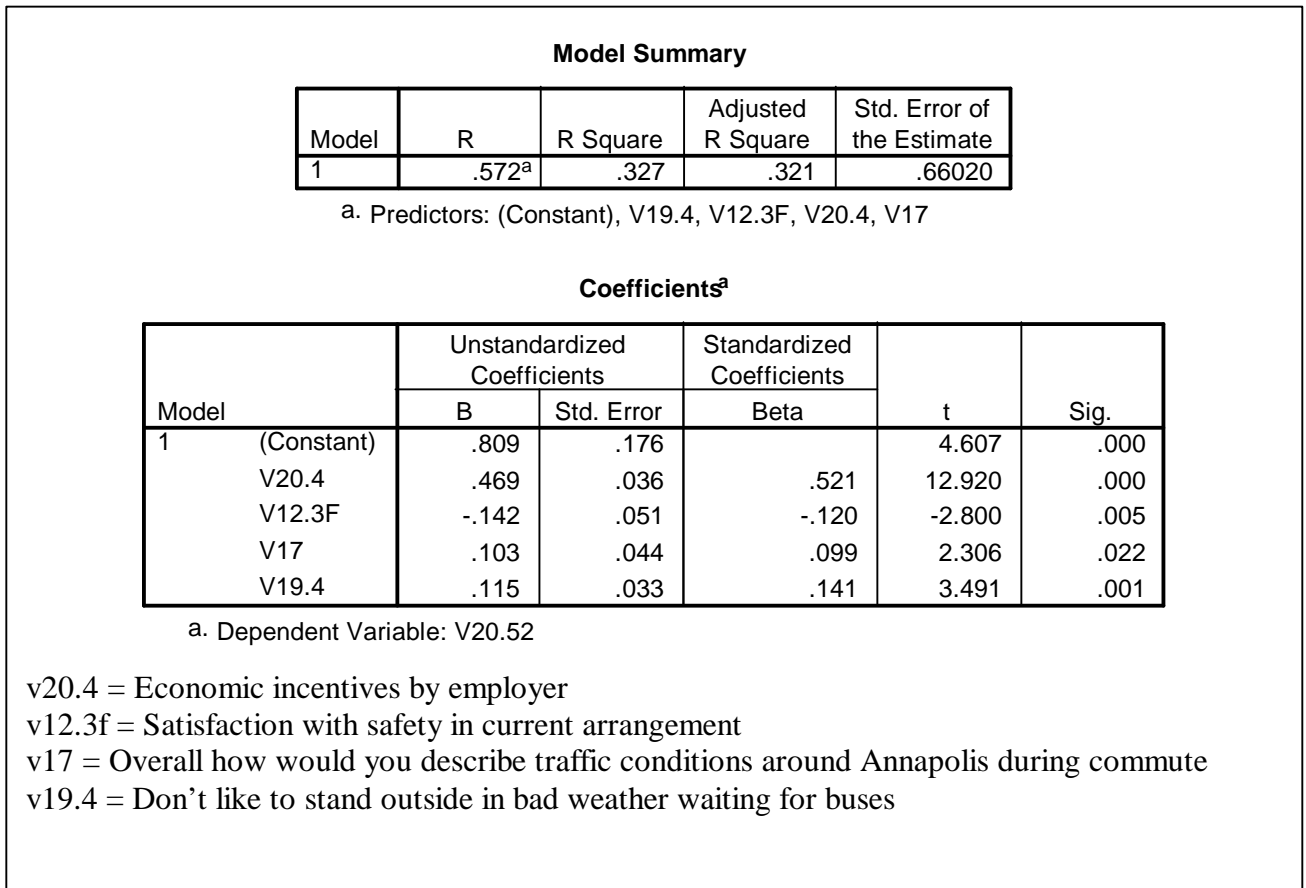
In order to pin down whether any specific set of variables were most likely to explain the variance in respondents' likelihood to use the interceptors, a two-step regression analysis was conducted. In the first step, all 43 attitudinal variables were included as independent variables, which produced an R^2 of .6. While this combination of variables explained a relatively large percentage of variance, four variables stood out as have the largest betas and the greatest statistical significance. A second regression was conducted using only these four variables.

Figure 15 shows the output from the second regression analysis. The four variables produced an R^2 of .327, thus explaining about half as much variance as when the other 39 variables were included.

The four variables were as follows:

- ☞☞ “Your employer provided economic incentives for you to park in the outlying lots.” This variable had the largest beta (.521) and the greatest statistical significance;
- ☞☞ “You don’t like having to stand outside in poor weather waiting for buses.” The larger this was perceived as a problem, the lower the probability for using interceptors;
- ☞☞ The greater the satisfaction with safety, the lower the probability for using interceptors; and,
- ☞☞ The poorer the perception of traffic conditions in Annapolis, the lower the probability for using interceptors.

Figure 15: Regression Analysis – Likelihood to Use Interceptors by Four Top Independent Variables – Employee Survey



A third regression (figure 16) was performed on the four suggested improvements/incentives meant to encourage use of the interceptors. The variable with the largest beta value was again employer: economic incentives. **This tends to confirm the conclusion that economic incentives should be considered a vital part of any plan to increase the use of interceptors.**

Figure 16: Regression Analysis Likelihood to Use Interceptors by Specific Conditions Meant to Encourage Interceptor Use – Employee Survey

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.681	.086		7.891	.000
	V20.1	.120	.049	.128	2.425	.016
	V20.2	.217	.050	.235	4.345	.000
	V20.3	9.534E-02	.034	.118	2.832	.005
	V20.4	.288	.038	.322	7.561	.000

a. Dependent Variable: V20.52

V20.1 = Parking and shuttle use low cost or free
V20.2 = Shuttles were available at least every 5 minutes
V20.3 = The cost of parking in downtown Annapolis went up significantly
V20.4 = Your employer provided economic incentives for you to park in the outlying lots

Questions Directed at Users of Public Transportation, Pedestrian and Bicycle Facilities

Resident Survey

Bus Users

The resident survey separated those who did not use a car even partially for commuting to work from the others who did. There were only ten respondents who exclusively used any other means for getting to work. Of these, seven used the bus (80% saying the MTA bus and 20% an Annapolis City bus), two used a ride-sharing arrangement, one walked and none biked or use light rail/MARC trains.

Those using a bus traveled from two blocks to five miles and took no more than thirty minutes. Daily costs varied a bit, with 71 percent paying under \$2 a day, but the others paying between \$5 and \$6 a day.

These few respondents were asked to convey how much of a problem several variables constituted. The results are seen on table 52.

The two biggest problems mentioned were the time it took to get from home to work (25% saying it was a severe problem) and the quality of the bus shelter (62%).

Table 52: Non-drivers Asked about “How Big a Problem” for Several Elements of Commuting – Residents Survey

	Not problem	Little Problem	Somewhat problem	Serious problem	Severe problem	Cases
Total amount of time it takes from home to work	0	0	63	13	25	8
Time waiting for the bus to arrive	14	29	29	29	0	8
Time spent on the bus	0	38	38	25	0	8
Time it takes to get to the bus stop or station	38	13	13	25	13	8
Quality of the bus shelter	38	0	0	0	62	8
Quality of the bus ride itself	50	13	37	0	0	8
Cost of using the bus	50	37	0	0	13	8

Some open-ended suggestions to improve the transit oriented commuting experience included:

- ✍️ Improve bus shelters, mentioning the Truman park and ride and also volunteering that it needed more parking;
- ✍️ Improve the condition of buses; hire safer drivers;
- ✍️ Extend the hours of the bus routes, which end at 7:00 p.m.;
- ✍️ Increase the frequency of buses as one an hour is insufficient;

- ✍️ Provide cleaner buses and have more frequent stops; and,
- ✍️ Provide weekend service.

Light Rail, MARC train or subway users

Only five individuals indicated that they used light rail, MARC trains or the subway to commute to work. While the percentages responding to specific questions are included in the appendix, no analysis seems warranted given the very small number of cases.

Distance to Bus/Shuttle

The employee survey sought to get a better idea about the distance between bus/shuttle stops and the respondents’ homes. Unfortunately, responses varied widely probably due the likely shorter commute to bus stops when compared to the distance to shuttles. The median number of blocks was two, while the median mileage was 13. This finding implies that people who used buses were generally very close to the bus stop, while those taking the shuttle were essentially commuters parking at an interceptor lot and then shuttling into town from there. (See table 53).

Table 53: Travel Distance to Bus/Shuttle– Employee Survey

Blocks:	%	Miles	%
0-1	48	0-4	21
2	33	5-10	24
3	5	11-16	15
4	5	17-25	19
5	10	Over 25	21
Total	101		100

N=109

Time Waiting for Bus/Shuttle

The median time spent waiting for a bus or shuttle was ten minutes. Table 54 shows that 52 percent of the 109 users waited ten minutes or less.

Table 54: Minutes Waiting for Bus or Shuttle – Employee Survey

Minutes	%
0-5	27
6-10	25
11-15	31
15 or more	17
Total	100

N=109

Cost of Using Bus/Shuttle

When asked about the daily cost of taking the bus, 85 percent said that there was no cost, perhaps pointing to extensive shuttle use. Among the few who provided a cost, the range was between 75 cents and \$3.20, with a modal cost of \$1.60.

Problems with Bus/Shuttle Usage

Table 42 focuses on elements of bus usage such as the time it takes getting from home to work, time spent waiting for the bus, etc. Respondents were asked to identify the magnitude of problem which each of these constituted. The results listed on table 55 have been sorted by the size of the percentage saying “Large problem.”

Table 55: Bus Usage - How Big a Problem were these Factors – Employee Survey

	Not problem	Small problem	Medium problem	Large problem	Medium +large	Cases
Predictability of the service (always on time...)	10	30	22	38	60	144
Convenience of the schedule	19	29	24	28	52	144
Time waiting for the bus to arrive	20	28	25	27	52	144
Total amount of time it takes from home to work	23	26	26	25	51	138
Quality of the bus shelter	31	23	23	23	46	145
Quality of the bus ride itself	18	35	27	20	47	142
Time it takes to get to the bus stop or station	44	29	14	13	27	142
Time spent on the bus	35	32	22	11	33	139
Cost of using the bus	92	3	4	1	5	141

A majority of the sample (60%) said that the “predictability of the service” was a medium or large problem. Smaller majorities mentioned the “convenience of the schedule” and the “time waiting for the bus to arrive” (both 52%), and the “total amount of time it takes from home to work” (51%). Sizable minorities also mentioned the “quality of the bus shelter” (47%) or of the “bus ride itself” (47%).

By contrast, relatively few users found the time it takes to get to the bus stations/stop or the time spent on the bus to be major problems. Ninety-two percent said that the cost of the bus was not an issue, a finding that complements the discovery that 85 percent cited no cost at all.

These findings reinforce points made earlier about **the importance of providing predictable, reliable service without imposing long wait times or unpleasant bus stops upon actual and potential users.**

The employee survey asked how many times a week did the respondent bicycle or walk to work. Table 56 shows that only ten percent walked at least once, while only three percent used their bicycles that frequently.

Table 56 “How many times a week do you walk/bicycle to work?” – Employee Survey

	Walk	Bicycle
Never	90	97
Once or twice	6	2
3 to 5 times	2	1
More than 5 times	2	0

N=708/704

The next question was meant to be answered only by those who had walked at least once to work, but the number of cases was larger than expected, perhaps due to partial walkers. The question asked, “How would you describe the availability and quality of pedestrian facilities such as sidewalks, crosswalks and trails – would you say that they are excellent, good, fair or poor?” A similar question was posed to bicycle users regarding bike lanes and shoulders on roads.

Table 57: Rating of Pedestrian Facilities – Employee Survey

	Pedestrian N=81	Bicycle N=86
Excellent	16	1
Good	30	16
Fair	42	34
Poor	12	49

The results shown on table 57 show that respondents generally felt that the pedestrian facilities were in better shape than the bicycle lanes and shoulders. While only 12 percent said that pedestrian facilities were in poor shape, nearly half of those answering (49%) gave bike facilities a “poor” rating (with fair and poor combined equaling 83%).

The poorer rating for bicycle facilities may not be the only reason for which only a tiny minority chose to ride their bicycles to work, but certainly cannot be overlooked.

In addition, it may be the case that potential cyclists were further dissuaded from riding to work by the lack of access to lockers and showers. Only one percent of those answering the question “How important is the lack of access to showers/lockers in shaping your decision to bike to work (or do you already have access to such facilities)?” did in fact have such access. As shown on table 58, 65% of those responding said that access was either very or somewhat important. In order to make **bicycling a serious alternative for commuting to work, it seems that major efforts to create appropriate conditions, both in the street and in the workplace, would be necessary.**

Table 58: Access to Showers/Lockers, How Important – Employee Survey

Very important	43
Somewhat important	22
Not important	34
Already have access	1

N=107

The resident survey also asked about walking and bicycling habits. As shown on table 59, about 63 percent walked at least three times a week for exercise *or* to commute to work (the survey did not segregate respondents by commuters vs. others).

Table 59: How Often Respondents Walked per Week – Resident Survey

Never	17
Once or twice	20
3 to 5 times	30
More than 5 times	33
Total	100

N=359

Those who answered positively to this question were in turn asked to describe the availability and quality of pedestrian facilities (see table 60). While the favorable percentages for both employees and residents were similar, **residents had a much more accentuated negative impression** (30% saying poor compared to employees 12%).

Table 60: Evaluation of Pedestrian Facilities – Resident vs. Employee Survey

	Residents	Employees
Excellent	18	16
Good	31	30
Fair	22	42
Poor	30	12
	101	100

N=81/294

Residents were also asked about their bicycle use. Only 24 percent used bicycles at least once a week (for any purpose, see table 61).

Table 61: How Often Respondents Used a Bicycle – Resident Survey

Never or don't own a bike	76
Once or twice	17
3 to 5 times	3
More than 5 times	4
Total	100

N=353

While 52 percent said that pedestrian facilities were poor or fair, 78 percent expressed a similar sentiment for bicycle facilities (see table 62). As the far-right column on table 54 shows, evaluations of pedestrian facilities were much more favorable.

Table 62: Evaluation of Bicycle Facilities – Resident Survey

	Pedestrian N=81	Bicycle N=110	Ped-Bike
Excellent	18	6	+12
Good	31	15	+16
Fair	22	32	-10
Poor	30	46	-16

All respondents to the employee survey were asked how important it was to improve pedestrian and bicycling facilities when thinking about major improvements to the Annapolis transportation system.

Given the smaller base of cyclists, the somewhat larger percentage saying that improvements to pedestrian facilities (42%) rather than bicycle facilities (32%) were “very important” was not unexpected. However, only small minorities of respondents were inclined to say that such improvements were “not very” important, as seen in table 63.

Table 63: Importance of Improving Pedestrian and Bicycle Facilities – Employee Survey

	Level of Importance		
	Very	Somewhat	Not very
When thinking about major improvements to the transportation system in the Annapolis area, would you say that improving <u>pedestrian facilities</u> is very important, only somewhat important or not very important? N=697	42	43	15
How about <u>bicycle facilities</u> , would you say that improving bicycle facilities (e.g., road shoulders, bike racks) is very important, only somewhat important or not very important? N=677	32	43	25

A cross-tabulation of recoded “do you walk/bike” variables with recoded “level of importance” variables in table 64 showed that 54 percent of those who walk at least once a week felt that pedestrian improvements were “very important” compared to only 40 percent of those who never walked.

The difference was even sharper among those who biked to work, with 51 percent saying bike facility improvements were “very important” compared to only 40 percent of those who never used their bicycles. Overall, it seems that the base of individuals favoring improvements to the pedestrian side is larger, but about the same percentage of those who currently walked or biked favored improvements in their respective infrastructures.

The resident survey also asked respondents to evaluate the importance of improvements to pedestrian and bicycle facilities, but this time used a “major” vs. “minor” distinction.

Table 64: Importance of Improving Pedestrian Facilities - Resident Survey

	Percent	Non Walkers	Walkers	Non Bikers	Bikers
Major	49	34	51	46	60
Minor	51	67	49	54	40
	100.0	101	100	100	100

N=346

Table 64 shows that the sample was evenly divided on the importance of improving pedestrian facilities. Walkers and especially bikers were more likely to cite it as a major concern.

Table 65: Importance of Improving Bicycling Facilities - Resident Survey

	Percent	Non Walkers	Walkers	Non Bikers	Bikers
Major	51	39	54	46	75
Minor	49	61	46	54	25
	100	99	100	100	100

N=299

Table 65 again shows the sample to be evenly divided about the importance of improving bicycling facilities. This time the division between bikers/walkers on the one hand, and non-walkers or non-bikers on the other was sharper, with 75 percent of bikers, but only 51 percent of the entire sample citing it as a major concern. These results were a bit different than those obtained for the employee survey, where there was a greater propensity for the general sample to place greater importance on improving pedestrian facilities. (See table 63).

Access to the downtown Annapolis area

The resident survey asked respondents to indicate *how frequently and by what means* they accessed Annapolis, and *what they did there* other than go to work. Table 66 shows how often respondents went to Annapolis using four different transportation modes.

Table 66: How often did Respondents Access Annapolis Using Various Modes – Resident Survey

	Never or rarely	Occasionally	Often	Always	Cases
Walked	52	19	14	16	342
Bicycle	88	8	5	1	335
Car	9	15	24	52	346
Bus	93	5	2	1	337

A majority of the sample had “always” used their cars, but a substantial 48 percent had at least occasionally walked. Only a small percentage had used their bicycles (12%) or the bus (7%).

When asked about the purpose of their visits to Annapolis (table 67), 90 percent said that they had visited a restaurant or bar, 72 percent had shopped and another 64 percent had visited a “non-eating tourist site.” Relatively few had attended a meeting (37%). About half (51%) had traveled to Annapolis to “see family or friends.”

Table 67: How often did Respondents Come to Annapolis for Various Purposes – Resident Survey

	Never	Once or twice	Several times	Often	Cases
Visited a restaurant or bar	10	30	29	31	352
Visited non-eating tourist sites	36	37	15	11	350
Shopped	28	36	19	18	349
Attended a meeting	63	24	7	5	350
Seen family or friends	49	22	13	16	350

As with the employee survey, residents were asked to evaluate the ease of access and the adequacy of transportation infrastructure (table 68). Oddly, the most favorable evaluation of infrastructure concerned the “adequacy of sidewalks and/or bike lanes” in which nearly a majority (49%) thought the adequacy to be excellent or good.

By comparison, very few were favorably disposed to the “ease of parking” (63% saying “poor”) or “adequacy of public transportation” although the latter had a very large number of respondents with no opinion. A quick glance at table 70 (next page) shows that employees had a very similar reaction to the “ease of parking” item (62% saying “poor”).

Table 68: Based on your travel to downtown Annapolis, please rate the following – Resident Survey

	Excellent	Good	Fair	Poor	Excellent +good	No opinion	Cases
Ease of access to the downtown area	11	33	37	18	44	1	348
Ease of parking in downtown area	3	9	22	63	12	4	346
Adequacy of public transportation	3	16	20	16	19	45	344
Adequacy of sidewalks and/or bike lanes	13	36	27	15	49	10	345

Respondents were generally favorable to all suggested improvements to the transportation system (improving ped/bike facilities, more shuttles, park and ride), **although the largest majority (57%) of those citing one item as “very important” favored increasing the number of parking garages in downtown Annapolis.**

**Table 69: Importance of Making Various Improvements to Transportation Infrastructure
– Resident Survey**

	Very important	Somewhat important	Not very important	No opinion	Cases
Provide improved pedestrian facilities	34	26	37	4	346
Provide improved bicycle facilities	31	32	29	9	345
Increase the number of parking garages in downtown Annapolis	57	22	18	3	345
More frequent shuttles around downtown Annapolis	49	26	14	11	345
Create a Park and Ride with frequent shuttles to downtown	51	30	15	6	342

A section of the employee survey asked respondents to ponder the ease or adequacy of elements of the Annapolis transportation grid. Table 70 shows the results. None of the items received notable “excellent” scores; the combined excellent/good categories only produced a single item with a majority: 56 percent thought that the “adequacy of sidewalks” was good or excellent. Only six percent thought the same about bike lanes (although 36% had no opinion). The ease of parking only received 13 percent saying good or excellent, barely exceeded by the 21 percent saying the same for public transportation (although note the high ‘no opinion’ scores for public transportation and bike lanes). Overall, 35 percent said that the ease of access to the downtown area was good or excellent.

As 62 percent indicated they thought that parking in downtown was poor, this item was apparently the **most problematic** for the sample of employees (as it was for residents).

**Table 70: Based on your travel to downtown Annapolis, please rate the following –
Employee Survey**

	Excellent	Good	Fair	Poor	Excellent +good	No opinion	Cases
Ease of access to the downtown area	7	29	42	20	36	2	694
Ease of parking in downtown area	3	10	23	62	13	2	699
Adequacy of public transportation	2	19	32	21	21	26	696
Adequacy of sidewalks	11	45	30	8	56	6	700
Adequacy of bike lanes	1	5	18	40	6	36	692

As shown on table 71, those who were least able to park in a lot/garage close to their workplaces were the most likely to be critical of the downtown parking situation.

Table 71: Appraisal of Downtown Parking by Current Parking Location – Employee Survey

	Excellent/good	Fair/poor	Signif.
Park at a lot or garage and then take a shuttle to my workplace N=121	4	96	.01
Park at a lot or garage more than 3 blocks from my workplace N=27	4	96	.14
Park at metered parking close to work N=38	6	94	.05
Park in non-metered parking on a street N=61	7	93	.1
Park at a lot or garage within 1 block of my workplace N=388	16	84	.02
Park at a lot or garage between 1 and 3 blocks from my workplace N= 123	19	81	.06
Overall	13	87	--

Improving Annapolitan Transportation – Factors with Largest Contribution

Employees were asked to rank five options for improving “transportation in and out of downtown Annapolis” on a scale, using a one for the option with the greatest impact. Table 72 shows that the sample’s verdict was clear: **increase the number of parking garages**, which was cited as the first priority by 59 percent. Combining the first two priority levels resulted in a majority also favoring an increase in the frequency of shuttles (66%) or encouraging the use of satellite lots with frequent shuttles to downtown (54%). Using the combined indicator, improving pedestrian facilities (24%) and bike facilities (19%) were clearly lesser priorities.

Table 72: Factors Likely to Improve Transportation In and Out of Annapolis by Rank – Employee Survey

	1	2	3	4	5	Cases
Increase the number of parking garages in downtown Annapolis	59	12	15	4	10	682
Encourage the use of satellite lots with frequent shuttles to downtown	26	28	30	8	7	681
More frequent shuttles around downtown Annapolis	22	44	25	6	3	682
Provide improved pedestrian facilities	9	15	15	37	24	672
Provide improved bicycle facilities	9	10	14	27	39	667
Average	25	22	20	16	17	

Residents seemed to share employees’ priorities (see table 73). While the scale used to measure residents’ priorities differed from that used with employees, it is clear that **increasing the number of parking garages was the most significant improvement** (57% saying “very important”), although creating a park and ride lot as well as more frequent shuttles were also highly ranked (51%, 49%). Again, improving pedestrian or bicycle facilities, while not unimportant, still ranked lower than providing more options for car-oriented commuters.

Table 73: Factors Likely to Improve Transportation In and Out of Annapolis by Importance – Resident Survey

	Very important	Somewhat important	Not very important	No opinion	Cases
Increase the number of parking garages in downtown Annapolis	57	22	18	3	345
Create a Park and Ride with frequent shuttles to downtown	51	30	15	6	342
More frequent shuttles around downtown Annapolis	49	26	14	11	345
Provide improved pedestrian facilities	34	26	37	4	346
Provide improved bicycle facilities	31	32	29	9	345

Residents also offered a range of open-ended suggestions about how planners might evaluate transportation alternatives over the next twenty years. Table 74 shows that the leading suggestions were divided as follows:

- ✍ ✍ Bus improvements (15%)
- ✍ ✍ Road improvements (13%)
- ✍ ✍ Extend Metro (9%) and Light Rail (8%)
- ✍ ✍ Pedestrian improvements (8%)
- ✍ ✍ Bike improvements (7%)

Table 74: Suggestions to Planners for Transportation Improvements – Resident Survey

Suggestion	Percent	Cases
Bus improvements (more service, to certain areas, particularly congested ones and to major destinations)	15	35
Road improvements , limit/reduce congestion, add more lanes, reduce number of signals, synchronize signals	13	30
Metro – extend to Annapolis	9	20
Pedestrian improvement (sidewalks, longer signal time for crossing streets, crossing guards)	8	18
Light Rail – extend to Annapolis	8	19
Parking , provide more in downtown, make sure it is handicap adapted	8	19
Bike improvements (bike lanes and racks)	7	15
Shuttles (around town, during special events)	6	13
Public transportation – favors in general, use more, provide incentives	6	13
Alternative roads , in highly congested areas such as Forest, Bay Ridge	5	12
Better planning , of construction, of general development, of systemic relationships between modes of transport	5	12
Park and Ride , establish	1	2
HOV – do more with these, allow use by hybrids	1	2
Other	8	19
Total	100	229

Conclusion

This report has provided insight into the structure of current commuting arrangements and the challenges they pose for alleviating traffic congestion and generally increasing the satisfaction of residents and employees. Issues such as the high concentration of commuters arriving and departing within a short period of time were highlighted.

The relative preference of residents and employees for the maximum in convenience, flexibility and time efficiency was underscored by the findings. These factors tended to push them to favor solutions that facilitated using their cars such as increasing the number of parking garages in downtown Annapolis.

However, some groups of respondents were more willing than others to consider alternatives to the paradigm of driving alone to work. These were individuals who were generally less satisfied with their current arrangements, driving longer and farther, parking farther from their workplaces and with fewer needs to run mid-day errands and attend offsite meetings. Such individuals seemed particularly favorable to transportation solutions that improved the functioning of interceptor/shuttle arrangements. They were also likely to modify their behaviors if provided with appropriate economic incentives.

The report also urges caution in anticipating great receptivity to innovative solutions to commuting problems. The percentage of employees very likely to use interceptors/shuttles even when all improvements and incentives have been provided did not increase much from the percentage now using these arrangements in the absence of any changes. It may be possible to improve the chances of successfully introducing new transportation solutions, but only if the greatest priorities of commuters – time and convenience – are not sacrificed in the process. While a trade-off between cost on the one hand, and time or convenience on the other appears to be feasible, it is important to remember that over two-thirds of employees currently receive free parking anyway.

Thus, a combined set of policy options might include:

- ☞ ☞ Encouragement of more staggered commuting times;
- ☞ ☞ Avoidance of parking disincentives for those electing not to come during peak hours (parking set asides, parking close in for those coming off-peak);
- ☞ ☞ Increase the economic incentives for those willing to assist in the reduction of congestion and close-in parking (by either charging for close-in parking or providing income subsidies to those parking in satellites or taking other forms of public transportation);
- ☞ ☞ Consider non-economic incentives for those helping to alleviate congestion and parking problems, such as a special day off of work, a free dinner at an Annapolis restaurant, special flexibility in work hours, etc.
- ☞ ☞ Give employees confidence that even occasional use of interceptors/shuttles will be rewarded;

- ☞ ☞ Help those who might be interested in ride-sharing find out who lives nearby – develop a database and/or inform employees about the availability of ARTMA’s services;
- ☞ ☞ Ensure that those willing to consider alternatives have some means to provide for emergency situations;
- ☞ ☞ Carefully screen the needs of employees, developing a scale that determines parking situation not just by seniority but by need for offsite work-related meetings and appointments;
- ☞ ☞ Be especially sensitive to the situation of women, who tend to fall into the profile of likely interceptor users, particularly since women value safety more highly than do men;
- ☞ ☞ Coordinate bus schedules with the core commuting patterns of employees, ensuring that should employees have to work late, the employer will provide alternative transportation given the lack of bus frequency during off-peak hours;
- ☞ ☞ Give top consideration to the safety and comfort of bus and shuttle stops, with proper lighting, security patrols, comfortable benches, proper sheltering about bad weather, and ideally a comprehensive system for knowing the status of forthcoming buses;
- ☞ ☞ Implement the other suggested improvements to the interceptor/shuttle system – more frequent shuttles, low or no cost, etc.
- ☞ ☞ Consider developing at least one safe bike access route to downtown Annapolis (perhaps using sites such as the Naval Academy for through bicycle traffic);
- ☞ ☞ Conduct a survey of sidewalks to ensure that they provide ample opportunity for those parking on the periphery or who wish to run errands by frequenting downtown shopping sites can do so, thus avoiding recourse to mid-day use of their cars;
- ☞ ☞ Discourage the belief that additional parking garages will ever be built in downtown Annapolis, obliging employees (and residents) to resign themselves to new commuting patterns;
- ☞ ☞ Develop educational campaigns on the benefits of walking and local shopping – perhaps providing incentives to those who shop and otherwise run errands locally;
- ☞ ☞ Hold regular meetings with major employers to monitor efforts to implement any new policies;
- ☞ ☞ Make sure that all stakeholders are familiar with policy initiatives and see the value for the long-term benefit of Annapolis of complying with such measures.

Appendix A: Employee Survey with Frequencies

Instructions: Where appropriate, **CIRCLE** the number corresponding to the answer which best describes your situation.

Since many transportation issues are based on getting people from their homes to work, the first few questions ask about your employment situation.

1. Which of the following best describes your current employment situation. Are you... N=723

Employed full-time (at least 35 hours) primarily outside the home	92
Employed part-time outside the home	8%
Other (specify: _____)	0%

2. If you answered (1) or (2) to question 1, which of the following categories best describes the industry in which you work? (Circle one)

- | | | |
|--|--|---|
| (1) Advertising/Marketing/Design 2% | (8) Hospitality or restaurant/bars 4% | (14) Retail 6% |
| (2) Architectural/Engineering- 1% | (9) Insurance 0% | (15) Technology 1% |
| (3) Business Support Services- 1% | (10) Legal 7% | (16) Telecommunications -0% |
| (4) Construction 0% | (11) Manufacturing- 0% | (17) Other (specify on line below): 4% |
| (5) Education 1% | (12) Medical 0% | |
| (6) Finance/Accounting 2% | (13) Real Estate 1% | |
| (7) Government 71% | | |

3. Which of the following best describes your current job or occupation? N=715

Sales	6%
Restaurant or hospitality service worker	3
Clerical or administrative support	29
Manufacturing, construction, or maintenance worker	0
Technical, skilled worker	16
Professional, management	43
Unskilled or semi-skilled worker	0
Other	2

4. What is the name of your employer?

If a government employee, indicate Department or Division as well as City, County, or State.

5.0 Do you ever
(1) Yes 21%

(2) No 79%
 Go to question



5.1 How far do you have to travel in order to get to the bus or shuttle stop?
 _____ blocks or _____ miles

Blocks:	Miles
0-1 = 48%	0-5 =28%
2 = 33%	0-5 =17%
3 = 5%	0-5 =28%
4 = 5%	0-5 =23%
5 = 10%	

5.2 How long did you typically have to wait at a bus stop for the bus or shuttle to arrive?
 _____ minutes

0-5 = 25% 6-10 = 26% 11-15 = 31% 20+ = 18%

5.3 How much does it cost you to take the bus each day? _____ dollars

5.4 Thinking about your bus usage, please tell me how much of a problem each of the following issues is for you. Use a number between 1 and 4, where 1 means that is it NOT a problem, and 4 means it is large travel problem for you:

	Not problem	Small Problem	Medium problem	Large problem
5.5a Total amount of time it takes from home to work N=138	23%	26%	26%	25%
5.5b Time waiting for the bus to arrive N=144	20	28	25	27
5.5c Time spent on the bus N=139	35	32	22	11
5.5d Time it takes to get to the bus stop or station N=142	44	29	14	13
5.5e Quality of the bus shelter N=145	31	23	23	23
5.5f Quality of the bus ride itself N=142	18	35	27	20
5.5g Convenience of the schedule N=144	19	29	24	28
5.5h. Predictability of the service N=144 (always on time...)	10	30	22	38
5.5g Cost of using the bus N=141	92	3	4	1

If you only use public transportation go to question 9.0 on page 6, otherwise proceed to question 6.0 below.

6.0 Which of the following do you typically use on your way to work: (circle all that apply)

- 6.1 Cross over the Naval Academy Bridge at the Severn River 18% N=130
- 6.2 Cross over the Severn River Bridge on Route 50 27% N=196
- 6.3 Use Route 97 23% N=164
- 6.4 Use Ritchie Hwy 15% N=109
- 6.5 Use Route 50 coming from the west (e.g., D.C., Bowie) 22% N=159
- 6.6 Use Route 50 coming from the east (e.g., Eastern Shore) 17% N=121
- 6.7 Take Forest Drive (e.g., from Bay Ridge, Hillsmere) into Annapolis 8% N=61
- 6.8 Cross over the Spa Creek bridge into downtown Annapolis 16% N=116
- 6.9 Take Forest Drive towards Route 50 and exit on either Solomon Island Road or Riva Road 1% N=6
- 6.10 Use Route 2 or Riva Road from South County into Annapolis/Parole 9% N=63

7.1 Which of the following, if any, best describes a route you typically take to get to your workplace: (circle all that apply)

- 7.2 Exit Route 50 at Rowe Blvd. 61% - N=441
- 7.3 Exit Route 50 at Route 2/Solomon Island Road 3% - N=21
- 7.4 Exit Route 50 at Jennifer Road 1% - N=5
- 7.5 Exit Route 665 at Riva Road 1% - N=10
- 7.6 Exit Route 665 at Solomon Island Road 1% - N=5
- 7.7 Take Route 665 to Forest Drive 3% - N=23

8.0 Which of the following describe your typical parking location and cost:

	Circle each number if applicable
Parking Location	
8.1 Park at metered parking close to work N=38	5%
8.2 Park in non-metered parking on a street N=61	8
8.3 Park at a lot or garage within 1 block of my workplace N=388	54
8.4 Park at a lot or garage between 1 and 3 blocks from my workplace N= 123	17
8.5 Park at a lot or garage more than 3 blocks from my workplace N=27	4
8.6 Park at a lot or garage and then take a shuttle to my workplace N=121	17
8.7 Parking Cost (choose one)	
My employer provides free parking N=496	68
My employer pays for part of my parking <small>☞ 8.7a What is YOUR share of parking cost (daily)? \$</small>	
I pay for all the cost of my parking <small>☞ 8.7b How much does parking cost YOU (daily)? \$</small>	

 ALL RESPONDENTS:

9.0 What is the:

9.1 Name of the town or community where you live? _____

9.2 Community's zipcode: _____

21012 = 8%
21037 = 3%
21061 = 4%
21122 = 6%
21146 = 3%
21401 = 16%
21403 = 15%
21666 = 4%
All others: 41%

10.0 What is the distance between your home and your workplace?

N=717

- (1) Less than 1/2 mile 2%
- (2) Between 1/2 mile and 2 miles 8%
- (3) More than 2 miles but less than 5 miles 17%
- (4) Between 6 and 15 miles 29%
- (5) Between 16 and 30 miles 24%
- (6) Between 31 and 45 miles 13%
- (7) More than 45 miles 7%

11.0 How many minutes does it usually take to get from home to the workplace and from the workplace back to home? (Use the scale below and write #, e.g., 1,2,3) N=715

11.1 Home to workplace _____

N=715

Scale	
(1) Under 10 minutes	9%
(2) Between 10 and 15	15%
(3) between 15 and 20	16%
(4) Between 20 and 30	23%
(5) Between 30 and 45	19%
(6) Between 45 and 60	13%
(7) More than 60 minutes	5%

11.2 Workplace to home _____

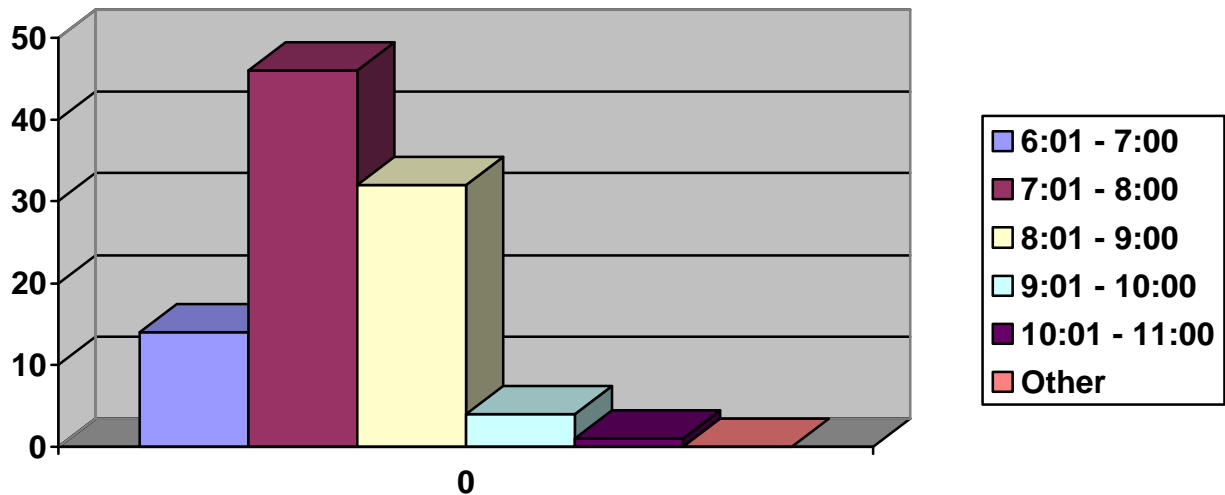
N=714

Scale	
(1) Under 10 minutes	7%
(2) Between 10 and 15	11%
(3) between 15 and 20	13%
(4) Between 20 and 30	21%
(5) Between 30 and 45	23%
(6) Between 45 and 60	16%
(7) More than 60 minutes	9%

12.0 What is your arrival time at work? _____ a.m/p.m. (circle one)

5:01 a.m. – 6:00 a.m. = 0%
6:01 a.m. – 7:00 a.m. = 14%
7:01 a.m. – 8:00 a.m. = 46%
8:01 a.m. – 9:00 a.m. = 32%
9:01 a.m. – 10:00 a.m. = 4%
10:01 a.m. – 11:00 a.m. = 1%
11:01 a.m. – 5:00 a.m. = 0%

Arrival Times



12.1 Do you consider the time it takes to get to work to be: $N=707$

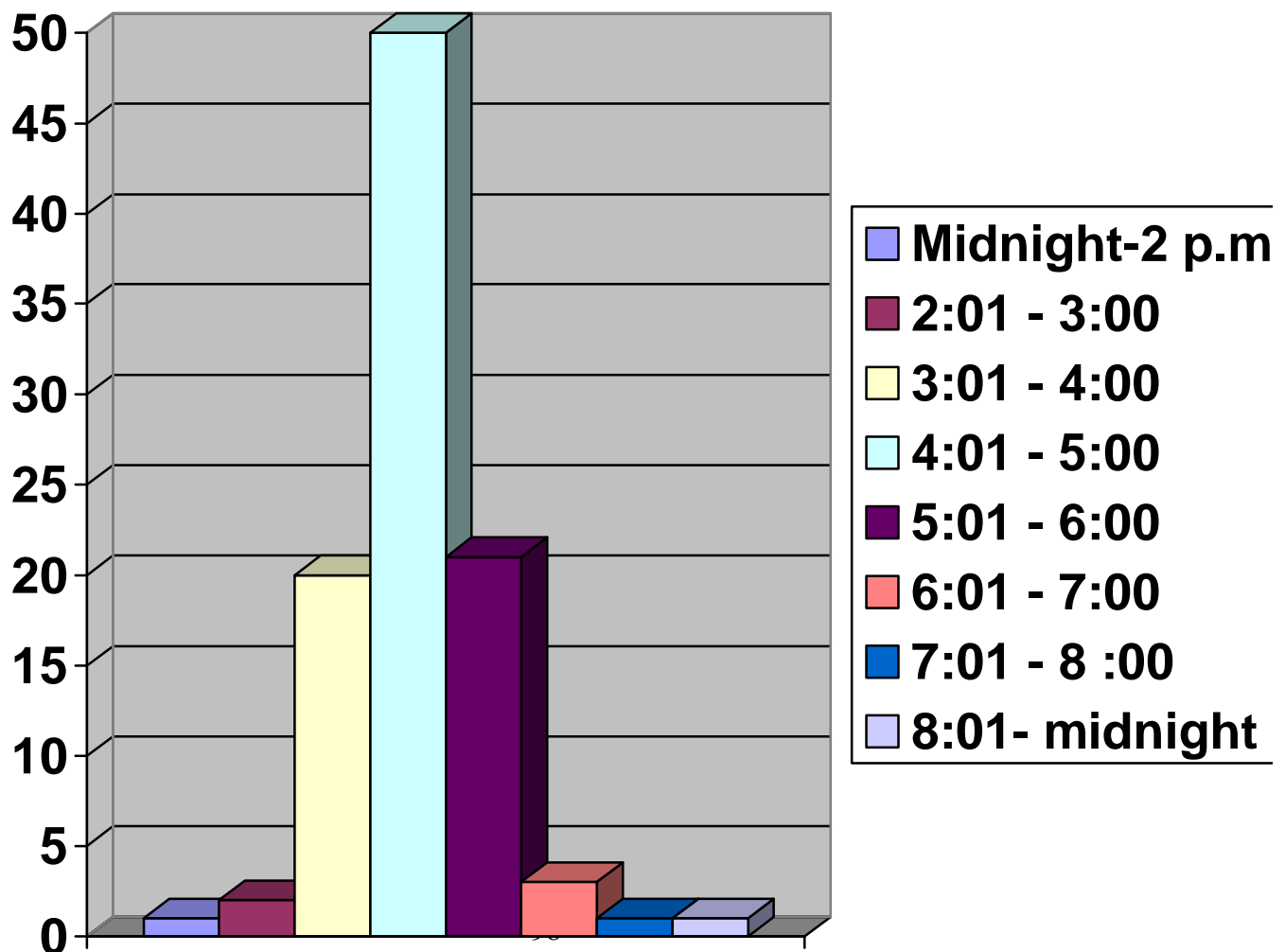
(1) reasonable 81% or (2) too long? 19%

12.2 What is your departure time from work? _____ a.m/p.m

(circle one)

Midnight-2:00 p.m. = 1%
2:01 p.m.-3:00 p.m. = 2%
3:01 p.m. – 4:00 p.m. = 20%
4:01 p.m. – 5:00 p.m. = 50%
5:01 p.m. – 6:00 p.m. = 21%
6:01 p.m. – 7:00 p.m. = 3%
7:01 p.m. – 8:00 p.m. = 1%
8:01 p.m. – midnight = 1%

Departure Times



12.3 How satisfied are you with the following aspects of your current arrangement:

	Very satisfied	Somewhat satisfied	Not very satisfied
12.3a Total amount of time it takes from home to work N=711	44%	38%	18%
12.3b Convenience N=708	48	34	18
12.3c Cost N=690	56	26	19
12.3d Having others with you on your commute to work (if ride-sharing or using public transportation) N=278	40	32	27
12.3e Personal comfort N=700	58	33	9
12.3f Safety N=702	48	40	12

13. Which of these items is the most important in determining how you choose to get to work? N=713

Circle one only

1	Total amount of time it takes from home to work	48%
2	Convenience	36%
3	Cost	5%
4	Having others with you on your commute to work	0%
5	Personal comfort	3%
6	Safety	8%

14.0 If you travel to your workplace by car, how much of a problem is each of the following issues for you?

(If you don't travel to work by car, skip to question 20 on page 10)

Use a number between 1 and 4, where 1 means that it is NOT a problem, and 4 means it is a large travel problem for you:

	Not problem	Small Problem	Medium problem	Large problem	Medium+ large
14c Congestion on local roads N=684	16	32	33	19	52
14b Highway congestion N=675	24	27	28	22	50
14f Not knowing about traffic tie-ups or construction N=684	19	33	23	25	48
14.h Concern about finding a parking space at your workplace N=685	52	13	11	24	36
14d Quality of the roads N=684	33	34	23	10	33
14.g Concern about getting into an accident N=686	36	35	18	12	30
14.i The distance between the parking lot and your office or worksite N=685	60	14	11	15	26
14a Total amount of time it takes from home to work N=685	48%	26%	15%	11%	26
14.j The cost of parking, if any N=660	77	2	5	16	21
14.k Cost of car ownership overall N=679	54	26	13	7	20
14e Lack of adequate shoulders N=676	52	31	12	5	17

15. Thinking about the cost of your commute on a monthly basis, estimate roughly how much do you spend on your car, taking into consideration all the elements of car ownership such as monthly payments, depreciation, maintenance as well as fuel and parking costs?

\$ 300 median _____ per month

16. Which of the following best describes your situation: N=673

I park my car when I arrive and don't return to it until I leave work	50%
I park my car when I arrive and occasionally have to use it during the day prior to leaving work	44%
I park my car when I arrive but frequently have to use it during the day	6%

16.1 If you answered (2) or (3) to question 16 above, indicate why you might need to use your car during the day prior to leaving work:

17. Overall, how would you describe traffic conditions around the Annapolis area during your commute? N=675

(1) Excellent 2% (2) Good 28% (3) Fair 47% (4) Poor 24%

18. Have you considered the use of any means other than driving alone to get to work? N=674

(1) Yes 34%
(2) No 66%

19. As you are NOT already using public transportation OR ride-sharing for traveling to your workplace, we are interested in knowing the importance of factors that may have prevented you from considering any alternatives to driving alone to work.

19.1 First, what is the main reason why you have not used other means of commuting to work?

Second, using the list below, please indicate how big a problem each of the following might be in preventing you from using alternatives to driving alone:

	Not problem	Small Problem	Medium Problem	Large Problem	Unsure
19.2 It would increase your travel time too much N=635	7%	11%	22%	56%	4%
19.3 You don't like to switch from one type of transportation to another N=630	31	21	20	24	4
19.4 You don't like having to stand outside in poor weather waiting for buses N=635	7	14	22	55	1
19.5 It would require too much organization to avoid missing buses or trains N=626	14	20	23	40	3
19.6 There is no public transportation near my house N=641	14	8	10	62	6
19.7 You don't know who to contact to share a ride to work N=613	39	18	11	21	11
19.8 You are worried that you could not get home in an emergency N=636	10	13	21	55	1
19.9 You are worried that you wouldn't be able to run errands on the way to or from work N=639	12	16	22	49	1

✍ ALL RESPONDENTS

20.0 Transportation planners are considering ways to maintain or improve access to downtown Annapolis in ways other than building additional parking structures in the immediate downtown area. Planners would like your input regarding some of the ideas they are reviewing.

One idea is to build outlying lots where commuters could park and then ride a shuttle to their workplaces. The Naval Stadium and Parole Plaza are two sites being considered. Please indicate how likely you would be to use these lots under the following conditions.

	Very likely	Somewhat likely	Not very likely	Unsure
20.1 Parking and shuttle use at the lots was very low cost or free N=669	25%	26%	44%	5%
20.2 Shuttles were available at least every 5 minutes N=671	30	28	37	5
20.3 The cost of parking in downtown Annapolis went up significantly N=655	30	23	35	12
20.4 Your employer provided economic incentives for you to park in the outlying lots N=658	35	28	30	8
20.5 Assuming that all of the conditions above occurred, what is the likelihood that you would use these lots:				
20.51 Everyday? N=609	24	18	49	9
20.52 At least twice a week? N=547	23	29	38	10

21. How many times a week do you walk to work? N=708

- (1) Never (Go to question 22) 90%
- (2) Once or twice (Go to question 21.1) 6%
- (3) 3 to 5 times (Go to question 21.1) 2%
- (4) More than 5 times (Go to question 21.1) 2%

21.1 ✍ IF you answered by saying at least once, answer: **How would you describe the availability and quality of pedestrian facilities such as sidewalks, crosswalks and trails – would you say that they are excellent, good, fair or poor?** N=644

- (1) Excellent 16%
- (2) Good 30%
- (3) Fair 42%
- (4) Poor 12%

✍ 22. How many times a week do you use your bicycle to commute to work? N=704

- (1) **Never or don't own a bike** (Go to question 23.0 on next page) 97%
- (2) **Once or twice** (Go to question 22.1) 2%
- (3) **3 to 5 times** (Go to question 22.1) 1%
- (4) **More than 5 times** (Go to question 22.1) 0%

IF you answered by saying at least once, answer:

✍ 22.1 How would you describe the availability and quality of bicycle facilities such as bike lanes and shoulders on roads – would you say that they are excellent, good, fair or poor? N=86

- (1) **Excellent** 1%
- (2) **Good** 16%
- (3) **Fair** 34%
- (4) **Poor** 49%

22.2. How important is the lack of access to showers/lockers in shaping your decision to bike to work (or do you already have access to such facilities)? N=107

(1) Very important 43%	(2) Somewhat important 22%	(3) Not important 34%	(4) You already have access to such facilities 1%
----------------------------------	--------------------------------------	------------------------------	---

✍ ALL RESPONDENTS

	Level of Importance		
	Very	Somewhat	Not very
23.0 When thinking about major improvements to the transportation system in the Annapolis area, would you say that improving <u>pedestrian facilities</u> is very important, only somewhat important or not very important? N=697	42	43	15
23.1 How about <u>bicycle facilities</u>, would you say that improving bicycle facilities (e.g., road shoulders, bike racks) is very important, only somewhat important or not very important? N=677	32	43	25

24. Based on your travel to downtown Annapolis, please rate the following:

	Excellent	Good	Fair	Poor	No opinion
24.1 Ease of access to the downtown area N=694	7%	29%	42%	20%	2%
24.2 Ease of parking in downtown area N=699	3	10	23	62	2
24.3 Adequacy of public transportation N=696	2	19	32	21	26
24.4 Adequacy of sidewalks N=700	11	45	30	8	6
24.5 Adequacy of bike lanes N=692	1	5	18	40	36

25. Thinking about ways in which transportation in and out of downtown Annapolis might be improved for you and others, please rate the following options in terms of their likely contribution to improving conditions.

There are five options – rank them using a 1 for the option likely to have the greatest impact, a 2 for the option likely to have the second greatest impact, and so on.

Identify the rank (each option should have a *unique* number, e.g., 1, 2, 3...)

25.1 Provide improved pedestrian facilities 1 = 9%, 2 = 15%, 3=15%, 4=37%, 5=24% N=672
25.2 Provide improved bicycle facilities 1=9%, 2=10%, 3=14%, 4=27%, 5=39% N=667
25.3 Increase the number of parking garages in downtown Annapolis 1=59%, 2=12%, 3=15%, 4=41%, 5=10% N=682
25.4 More frequent shuttles around downtown Annapolis 1=22%, 2=44%, 3=25%, 4=6%, 5=3% N=682
25.5 Encourage the use of satellite lots with frequent shuttles to downtown 1=26%, 2=28%, 3=30%, 4=8%, 5=7% N=681

26. Thinking generally about transportation in the Annapolis area, is there anything you would like transportation planners to consider as they evaluate transportation alternatives for the next 20 years?

(If your comments exceed the space available, write on the back of the questionnaire or attach a note)

DEMOGRAPHICS: To help us better understand your responses, please tell us the following:

<p>27. Age N=707</p> <p>(1) 18 to 29 13%</p> <p>(2) 30 to 44 31%</p> <p>(3) 45 to 59 46%</p> <p>(4) 60 or more 10%</p>	<p>28. What are the ages of any children living in your household? [circle all that apply]</p> <p>(24.1) 0-5 30% N=218</p> <p>(24.2) 6-10 10% N=69</p> <p>(24.3) 11-16 13% N=96</p> <p>(24.4) Over 16 17% N=126</p>
--	---

<p>29. Highest level of your formal education: N=701</p> <p>1 less than a high school degree 1%</p> <p>2 a high school degree 12%</p> <p>3 some college or a two-year degree 37%</p> <p>4 completed college with a bachelor's degree 24%</p> <p>5 post graduate work 26%</p>
--

<p>30. Household income: N=652</p> <p>1 Less than \$30,000 6%</p> <p>2 \$30,001 to \$50,000 22%</p> <p>3 \$50,001 to \$75,000 25%</p> <p>4 \$75,001-\$100,000 19%</p> <p>5 \$100,001-125,000 12%</p> <p>6 Over \$125,000 16%</p>

31. **Regarding race, how would you describe yourself? N=687**

(1) African-American 8% (2) White (non-Hispanic) 87%

(3) Hispanic 1% (4) Asian 1%

(5) Other or mixed racial background 2%

32. **What is your current marital status? N=698**

1 Single	2 Married	3 Separated	4 Widowed	5
23%	61%	or	2%	Other
		Divorced		2%
		12%		

33. **Which of the following best describes your home: A detached single family home, a townhouse, a condo, or an apartment? N=696**

1 Detached single family	2 Townhouse	3 Condo	4 Apartment
71%	16%	3%	9%

34. **Gender:** (1) Female 66% (2) Male 34% N=696

Please make sure to return this questionnaire to the appropriate person!

Appendix B: Resident Questionnaire with Frequencies
Annapolis Area Regional Transportation Survey, 2002
Conducted November 18-26, 2002. Cases 370
Annapolis Area Regional Transportation Survey, 2002

Since many transportation issues are based on getting people from their homes to work, let me first ask about your employment situation.

3. Which of the following best describes your current employment situation. Are you...

N=369

Employed full-time (at least 35 hours) primarily outside the home	49
Employed part-time outside the home	11
Employed full or part-time and work at home (possibly self-employed or telecommuting)	9
A homemaker	5
Retired	22
Unemployed	3
Going to school	2
Other (specify:	1
No answer/refused	0

4. IF R responded 1 or 2 to Q1 ask:

Into which of the following four categories of occupations does your job fall?

N=367

Sales or service	24
Clerical or administrative support	11
Manufacturing, construction, maintenance or farming	5
Professional, management or technical	53
Other	8
Refused	0

5. Are you required to drive a vehicle as a part of your job, as might a taxi or truck driver? (N=370)

14 (1) Yes (if yes, go to Q 4) **42** (2) No (Go to Q5) **43** (0) No answer/refused

IF YES TO Q 3: 3.1 Where does most of your driving occur? (N=48)

- 20 (1) Annapolis city
- 4 (2) Parole
- 13 (3) Other suburbs around Annapolis
- 17 (4) Elsewhere in Anne Arundel County
- 46 (5) Outside of Anne Arundel County

4.0 What is your job or occupation?

Job/Occupation Mentioned N=55		
	Frequency	Percent
No Answer	315	85.1
Admin. support	1	.3
architect	1	.3
Architect	1	.3
carpenter	1	.3
computer specialist	1	.3
consultant	1	.3
contractor	1	.3
contstruction worker	1	.3
Corp. Communications	1	.3
Dep.Sheriff	1	.3
Energy Mgmt	1	.3
Financial Officer	1	.3
financial planner	1	.3
Foundation Director	1	.3
gov't employee	1	.3
govt. contractor	1	.3
grazler	1	.3
home health care	1	.3
Ins. Adjuster & Appraiser	1	.3
Janitor	1	.3
lawyer	1	.3
Management	1	.3
manager	1	.3
Manager	1	.3
Mechanical Engineer	1	.3
medical	1	.3
nurse asst.	1	.3
Pharmaceuticals	1	.3
photographer	1	.3
Physician	1	.3
public health	1	.3
Real Estate	1	.3
registered nurse	1	.3
repair air conditioning	1	.3
Retain Mgmt	1	.3
sales	3	.8
sales & designing	1	.3
sales consultant	1	.3
sales rep	2	.5
secretary	1	.3
Senior labor relations specialist	1	.3
service for the disabled	1	.3

state forestry	1	.3
teacher	3	.8
telecommunications	1	.3
trade assoc.	1	.3
VP MD Chamber of Commerce	1	.3
VP of Marketing	1	.3
work at thrifty car rental	1	.3
work in hospital	1	.3
Total	370	100.0

5. In which of the following locations is your workplace located?

35 (1) Annapolis city

5 (2) Parole

10 (3) Suburbs around Annapolis

14 (4) Elsewhere in Anne Arundel County

36 (5) Outside of Anne Arundel County

[If R answers 1 or 2 ask]: **5.1** What is a major intersection nearest to your workplace?

V5.1

	Frequency	Percent
	292	78.9
450 @ Naval Bridge	1	.3
6th and 2nd St.	1	.3
97 & Rt 50	1	.3
Annapolis Mall	2	.5
Bay Ridge Ave.	1	.3
Bayridge Ave/Forest Drive	1	.3
Bayside & Arundel on the Bay	1	.3
Best Gate & 178	1	.3
Bestgate/General Highway	1	.3
Bestgate/Generals Hwy	1	.3
Chinquapin & 655 & Forest Dr	1	.3
Chinquapin & Forest Dr.	1	.3
Church Circle	1	.3
Compromise & Market Circle	1	.3
Courthouse	1	.3
downtown Annapolis	1	.3
Duke of Gloster	1	.3
Forest Drive	3	.8
Forest Drive/West St.	1	.3
Forest Spa	1	.3
Glen Burnie	1	.3
Jenifer & West St.	1	.3
Jennifer & Admiral	1	.3
Jennifer West	1	.3
King George St & MD Ave.	1	.3
Legion Ave & West St.	1	.3
Main St. and Dock St.	1	.3
Main St/Greeb St	1	.3
MD Ave & King George	1	.3
Naval Academy 450/Decador road	1	.3

North Bestgate & Bestgate	1	.3
Riva	1	.3
Riva & Aris T Allen	1	.3
Riva & Forest	1	.3
Riva Rd	2	.5
Riva Rd & 665	1	.3
Riva Rd & Admiral Cochran Blvd	1	.3
Riva Rd & Rt 2	1	.3
Riva Rd.	2	.5
Riva Rd. & Aris T. Allen	1	.3
Riva Road	1	.3
Riva/Aris T. Allen	1	.3
Riva/Harry Truman Hwy	1	.3
Rowe & Melvin Ave	1	.3
Rowe & Taylor	1	.3
Rowe Blvd	1	.3
Rowe Blvd & Melvin Ave	1	.3
Rt 100 & 97	1	.3
Rt 2	2	.5
Rt 50 & Jennifer Rd	1	.3
Rt 50/Riva Rd	1	.3
Rte 2 /West St.	1	.3
rte 50	2	.5
Rte 50	1	.3
Spa - Forest Drive	1	.3
Taylor & Rowe Blvd.	1	.3
Taylor & West St.	1	.3
Tyler/Bayridge Ave	1	.3
Washington DC	1	.3
West & Calvert	1	.3
West St & Calvert	1	.3
West St & Rt 50	1	.3
West St & Rt. 2	1	.3
West St.	3	.8
West St. & Cathedral	1	.3
West St. & Chinquinic	1	.3
West St./Forest Dr	1	.3
West St/Church Circle	1	.3
West St/Rt 2	1	.3
Total	370	100.0

[If R answers **3 through 5** ask]:

5.2 What is the name of the town, city or suburb of your workplace location? (N=110)

V5.2

	Frequency	Percent
No answer (% calculated on the basis of 370 cases)	260	70.3
214 & 424	1	.3
Alexandra VA	1	.3
Annapolis Junction	1	.3
Arlington VA	2	.5
Arnold	1	.3
Baltimore	12	3.0
Baltimore Parkway	1	.3
Beltsville	1	.3
Beltsville MD	1	.3
Bethesda	5	1.4
Bladensburg	2	.5
Bowie	1	.3
Broadneck Peninsula	1	.3
BWI Airport	3	.8
Cheverly	1	.3
College Park & Wash D.C	1	.3
College Park MD	1	.3
Columbia	2	.5
Crofton	1	.3
Crownsville	1	.3
Eastport	2	.5
Edgewater	5	1.4
Ellicott City	2	.5
Falls Church VA	1	.3
Fort Meade	2	.5
Gambrills	1	.3
Glen Burnie	3	.8
Greenbelt	2	.5
Hanover	1	.3
Howard County	1	.3
Jessup	1	.3
Landover	1	.3
Lanham	2	.5
Laurel	2	.5
Linthicum	2	.5
Millersville	3	.8
Pasadena	3	.8
Philadelphia PA	1	.3
Ridgely MD	1	.3
Riva	2	.5
Rockville	1	.3
Sandy Spring MD	1	.3
Severn	1	.3
Severna Park	1	.3
Silver Spring	2	.5
Suitland	2	.5
Timonium	1	.3
Upper Marlboro	1	.3
Wash D C	18	5
West Annapolis	1	.3
West River	1	.3
Total	370	100.0

6. What is the distance between your home and your workplace? (N=211)

- 1 (1) **Less than ½ mile**
- 6 (2) **Between ½ mile and 2 miles**
- 21 (3) **Between 2 miles and 5 miles**
- 21 (4) **Between 5 and 15 miles**
- 24 (5) **Between 15 and 30 miles**
- 26 (6) **More than 30 miles**

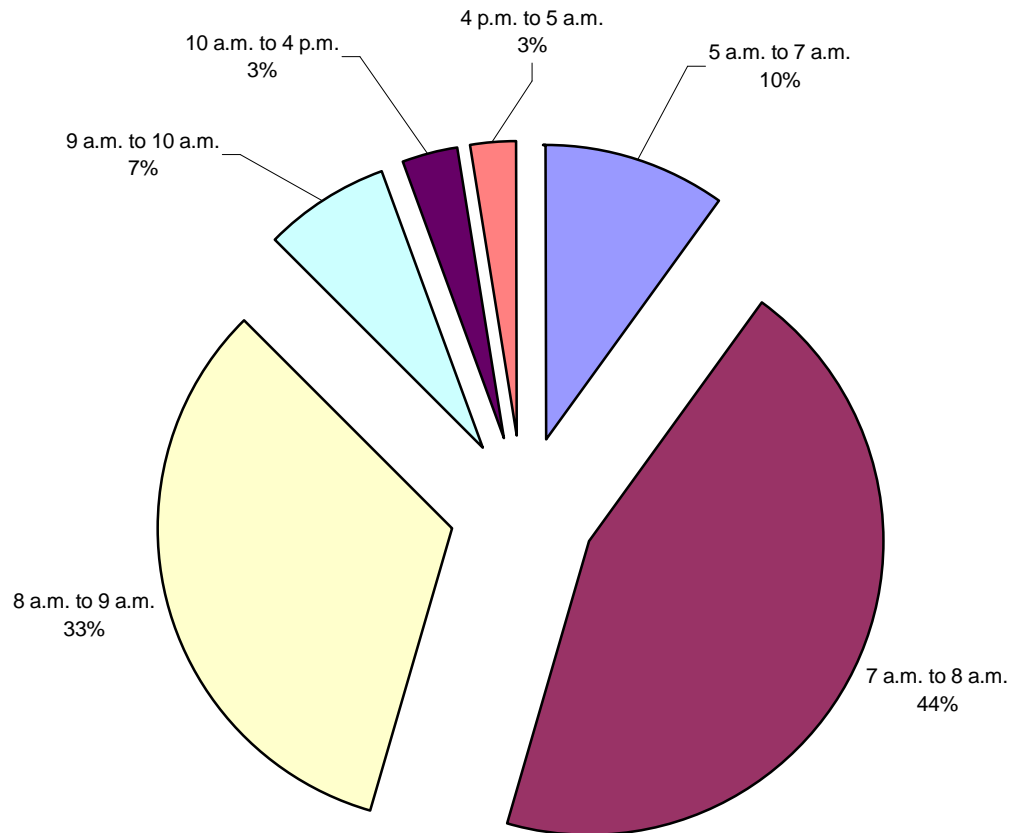
7. How many minutes does it usually take to get from home to the workplace? (N=212)

- 18 (1) **Under 10 minutes**
- 18 (2) **Between 10 and 15**
- 10 (3) **between 15 and 20**
- 11 (4) **Between 20 and 30**
- 17 (5) **Between 30 and 45**
- 26 (6) **More than 45 minutes**

7.1 What is your arrival time at work? _____ a.m/p.m. (circle one)

V7.1

Workplace Arrival Times (in %)



7.2 Do you consider the time it takes to get to work to be: (1) reasonable or (2) too long?

73% (1) reasonable

27% (2) too long?

8. How often during the last month have you worked at home? _____

	Frequency		Percent
No answer	216		58
0	117		32
		Of those citing any days working at home (N=38)	
1 day	8	21	2
2 days	5	13	1
3 days	4	11	1
4 days	3	8	1
5 days	4	11	1
1 to 5 days	24	63	6
7 days	1	3	.0
8 days	3	8	1
8days	1	3	0
10 days	3	8	1
6 to 10 days	8	22	2
12 days	1	3	0
15 days	2	5	1
20 days	2	5	1
25 days	1	3	0
Over 10 days	6	16	2
Total	370		100.0

9. I am going to read you several ways in which you might get from home to work. First, let me ask – do you take a car at least part of the way to work?

- 93% (1) Yes (Go to Q 9.1)
- 7% (2) No (Go to Q 10)
- 0 % (0) Refused (Go to Q 14)

9.1. Please tell me the way that you are most likely to use a car to get to work:

- 94% (1) Drive alone
- 6% (2) Drive with someone else sometimes
- 1% (3) Use a car in a formal ride-sharing arrangement

9.2 Please tell me, how satisfied are you with the following aspects of your current arrangement

	Very satisfied	Somewhat satisfied	Not very satisfied	No answer	Total
9.2a Total amount of time it takes from home to work (n=199)	44%	41%	14%	1%	100%
9.2b Convenience (n=199)	49	46	14	1	100
9.2c Cost (n=199)	46	37	14	2	100
9.2d Having others with you on your commute to work (n=182)	14	7	9	70	100

9.2e Which of these items is the most important in determining how you choose to get to work?

(N=190)

44%	Total amount of time it takes from home to work
50%	Convenience
5%	Cost
2%	Having others with you on your commute to work

9.3. Since you use a car for commuting, do you typically:

95%	Drive directly from home to work and park adjacent to your workplace (Go to Q11.3 p. 7)
2%	Drive from home to work, but park at a outlying parking lot and take a shuttle into work (Go to 11.1a p. 5)
1%	Drive from home to work, but park at a park and ride and take a bus from there (Go to 11.1 p. 5)
3%	Drive from home to work, but take light rail, a MARC train or metro the rest of the way (Go to 11.2b p. 6)

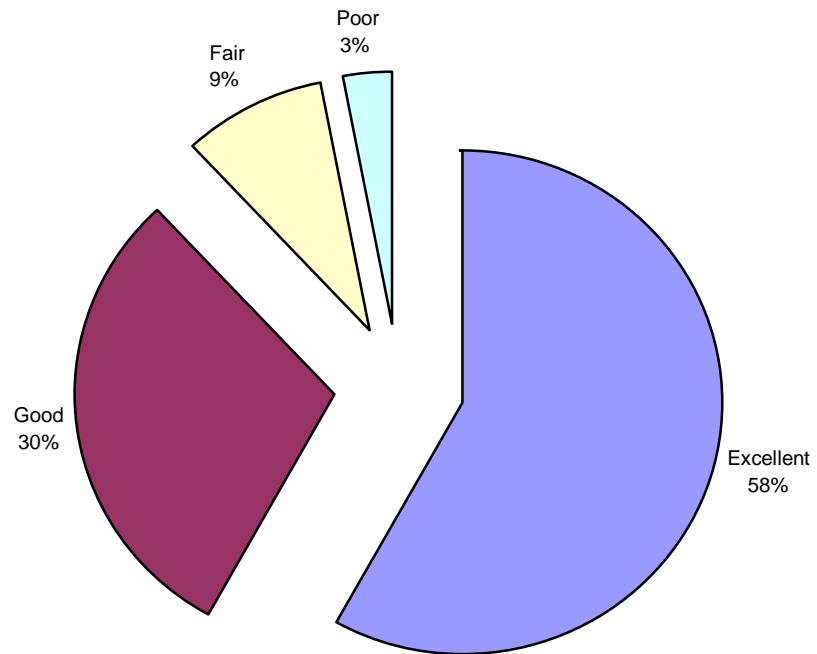
- (1) **Drive directly from home to work and park adjacent to your workplace (Go to Q11.3 p. 7)**
- (2) **Drive from home to work, but park at a outlying parking lot and take a shuttle into work (Go to 11.1a p. 5)**
- (3) **Drive from home to work, but park at a park and ride and take a bus from there (Go to 11.1a p. 5)**
- (4) **Drive from home to work, but take light rail, a MARC train or metro the rest of the way (Go to 11.2b p. 6)**

[Read 9.4 BEFORE skipping to the “Go to” page]

9.4 How would you rate this arrangement, as excellent, good, fair or poor?

(1) Excellent (2) Good (3) Fair (4) Poor (0) No answer

Evaluation of Current Driving Arrangement



10 RESPONDENT *DOESN'T USE A CAR*

10. Since you do NOT use a car to get to work, which of the following types of transportation do you typically use in your daily commute? (N=10)

[Read list, checking off all that R mentions, then ask if more than one method is named]:
“Which is the most typical method” (and go to the appropriate page)]

- 10% **Walk** (Go to Q 15 on page 9)
- 0% **Bicycle** (Go to Q 15 on page 9)
- 20% **Ride-sharing van** (Go to Q11.3a on page 7)
- 70% **Bus** N=5 [ask]: (1) **Annapolis City bus** (Go to 11.1a p. 5) 20%
(2) **MTA bus** (Go to 11.1a p. 5) 80%
(3) **Private bus service like Dillon's** (Go to 11.1a p. 5)
- 0% (5) **Light rail, MARC train, metro** (Go to 11.2a p.6)
- 0% (6) **Other – specify:** _____ (Go to Q15 p. 9)

11.1a IF BUS: ✍

11.1a How far do you have to travel in order to get to the bus or shuttle stop? _____
blocks/ miles

(circle)

V11.1A

Distance	Frequency	Percent
	362	97.8
2 blocks	1	.3
3 blocks	1	.3
5 blocks	1	.3
9 blocks	1	.3
2 miles	1	.3
3 miles	1	.3
5 miles	1	.3
120 miles	1	.3
Total	370	100.0

11.1b How long did you typically have to wait at a bus stop for the bus or shuttle to arrive?

minutes

V11.1B

Minutes	Frequency	Percent
	362	97.8
5	1	.3
7	1	.3
10	1	.3
15	1	.3
20	2	.5
30	2	.5
Total	370	100.0

11.1c How much does it cost you to take the bus each day? _____ **cents/dollars**

(circle)

V11.1C

Cost	Frequency	Percent
	363	98.1
\$1.35	3	.8
\$1.50	1	.3
\$1.95	1	.3
\$5.00	1	.3
\$6.00	1	.3
Total	370	100.0

Thinking about your bus usage, please tell me how much of a problem each of the following issues is for you. Use a number between 1 and 5, where 1 means that is it NOT a problem, and 5 means it is the worst travel problem for you:

	Not problem	Little Problem	Somewhat problem	Serious problem	Severe problem	Cases
11.1d Total amount of time it takes from home to work	0%	0%	63%	13%	25%	8
11.1e Time waiting for the bus to arrive	14	29	29	29	0	8
11.1f Time spent on the bus	0	38	38	25	0	8
11.1g Time it takes to get to the bus stop or station	38	13	13	25	13	8
11.1h Quality of the bus shelter	38	0	0	0	62	8
11.1i Quality of the bus ride itself	50	13	37	0	0	8
11.1j Cost of using the bus	50	37	0	0	13	8

11.1k What is the one thing that would most improve your commuting experience?

V11.1K

	Frequency	Percent
	363	98.1
better bus shelter--H. S. Truman park -n-ride and more parking spaces	1	.3
better condition of buses & safer drivers	1	.3
extend the hours of bus route: runs only until 7:00 p.m.	1	.3
improve traffic on Fridays	1	.3
more buses--not one every hour	1	.3
more cleaner bus and frequent stops	1	.3
weekend service	1	.3
Total	370	100.0

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11.2a ~~IF~~ IF LIGHT RAIL, MARC TRAIN OR SUBWAY (PART OR WHOLE):

11.2a How long did you typically have to wait at the station? _____ minutes

V11.2A

Minutes	Frequency	Percent
No answer	365	98.6
5	1	.3
6	1	.3
10	1	.3
15	1	.3
20	1	.3
Total	370	100.0

11.2b If you drove your car to a parking area prior to taking the rail transport, how many minutes did it take you to find a parking space? _____ minutes

V11.2B

Minutes	Frequency	Percent
	365	98.6
0	1	.3
1	1	.3
2	1	.3
5	1	.3
10	1	.3
Total	370	100.0

11.2c About what time do you typically arrive at the parking lot? _____
am/pm (circle)

V11.2C

Time	Frequency	Percent
	365	98.6
6:30 a.m.	1	.3
7:10 a.m.	1	.3
8:00 a.m.	2	.5
8:10 a.m.	1	.3
Total	370	100.0

11.2d About how much does the rail transportation cost you each day? _____
dollars

V11.2D

Cost	Frequency	Percent
	365	98.6
\$4.00	2	.5
\$8.00	1	.3
\$9.70	1	.3
\$20.00	1	.3
Total	370	100.0

Thinking about your rail usage, please tell me how much of a problem each of the following issues is for you. Use a number between 1 and 5, where 1 means that is it NOT a problem, and 5 means it is the worst travel problem for you:

	Not problem	Little Problem	Somewhat problem	Serious problem	Severe problem	Cases
11.2e Total amount of time it takes from home to work	20	20	40	0	20	5
11.2f Time waiting for the train to arrive	40	20	40	0	0	5
11.2g Time spent on the train	20	60	0	20	0	5
11.2h Time it takes to get to the train stop or station	0	20	60	20	0	5
11.2i Quality of the train shelter	40	40	20	0	0	5
11.2j Quality of the train ride itself	40	40	20	0	0	5
11.2k Cost of using the train	20	0	20	40	20	5

11.2L What is the one thing that would most improve your commuting experience?

V11.2L

Recommendation	Frequency	Percent
	365	98.6
Extension of service towards Annapolis	1	.3
Less traffic on route 50	1	.3
Light rail in Annapolis/Parole area	1	.3
lower the cost of Metro	1	.3
the train to be on time	1	.3
Total	370	100.0

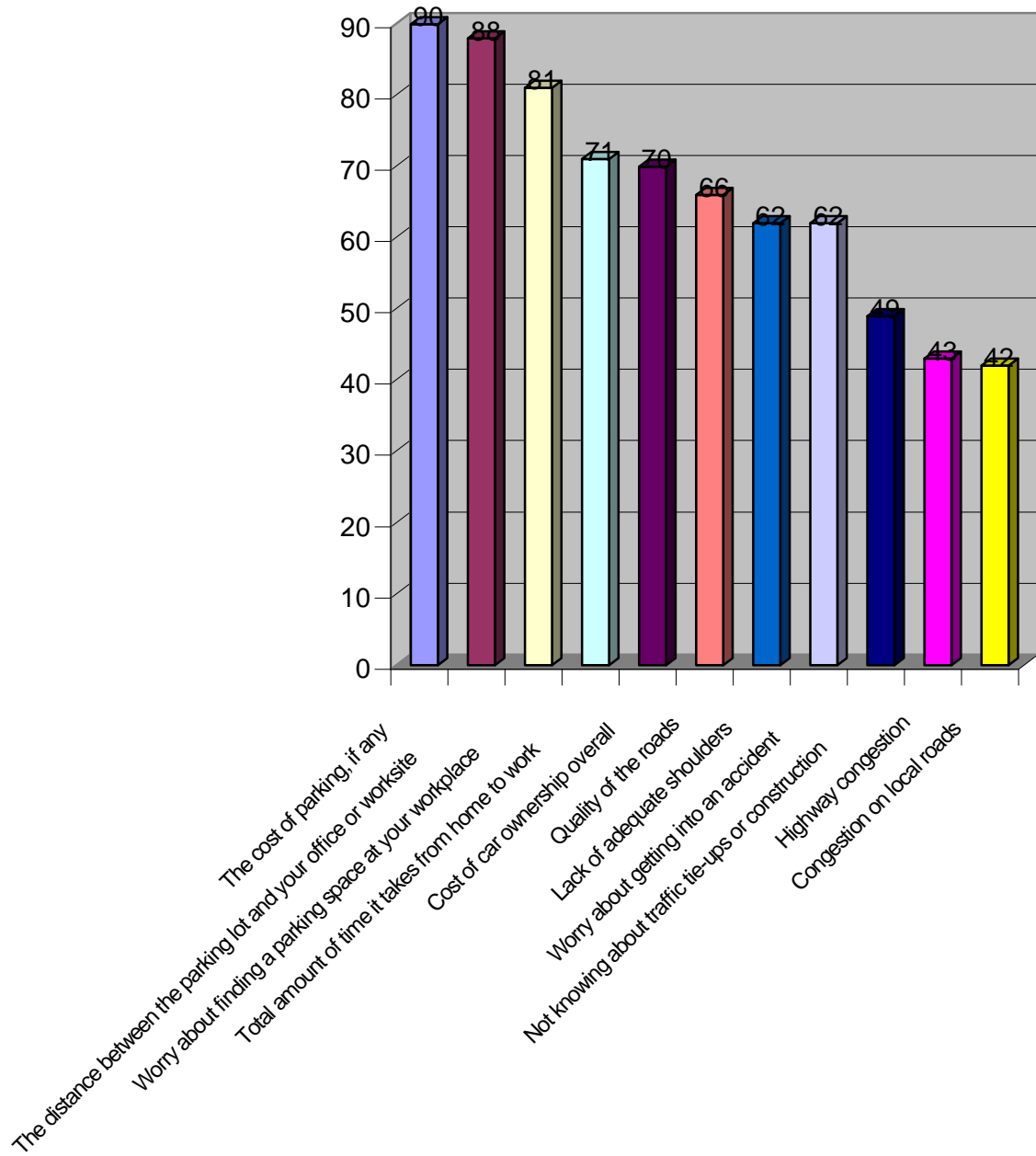
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11.3a ✂ IF CAR and NO BUS OR TRAIN

Thinking about your CAR [or VAN] usage, please tell me how much of a problem each of the following issues is for you. Use a number between 1 and 5, where 1 means that is it NOT a problem, and 5 means it is the worst travel problem for you:

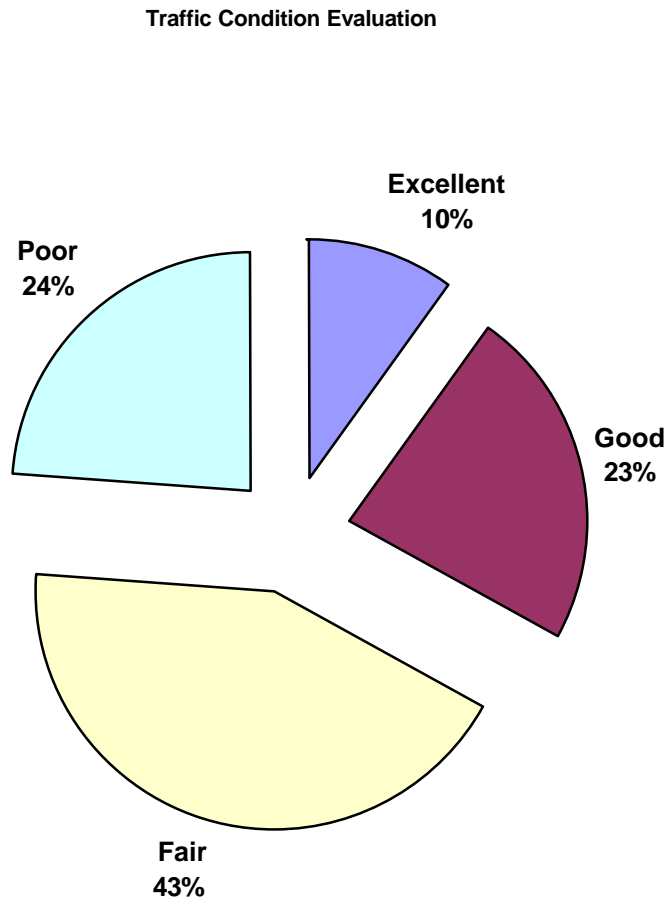
	Not problem	Little Problem	Somewhat problem	Serious problem	Severe problem	No answer
	(1)	(2)	(3)	(4)	(5)	(0)
11.3a Total amount of time it takes from home to work						
11.3b Highway congestion						
11.3c Congestion on local roads						
11.3d Quality of the roads						
11.3e Lack of adequate shoulders						
11.3f Not knowing about traffic tie-ups or construction						
11.3g Worry about getting into an accident						
11.3h Worry about finding a parking space at your workplace (NO VAN)						
11.3i The distance between the parking lot and your office or worksite (NO VAN)						
11.3j The cost of parking, if any (NO VAN)						
11.3k Cost of car ownership (<i>Van use</i>) overall						

Drivers: % saying not or little problem



11.4 Overall, how would you describe traffic conditions on the way to and from work:

(1) Excellent (2) Good (3) Fair (4) Poor (0) No answer



11. Have you investigated the use of any means other than driving alone to get to work?
[SKIP IF USING A VAN OR OTHERWISE RIDE SHARING]

(1) Yes 36%
(2) No 63%
(0) No answer 1% N=181

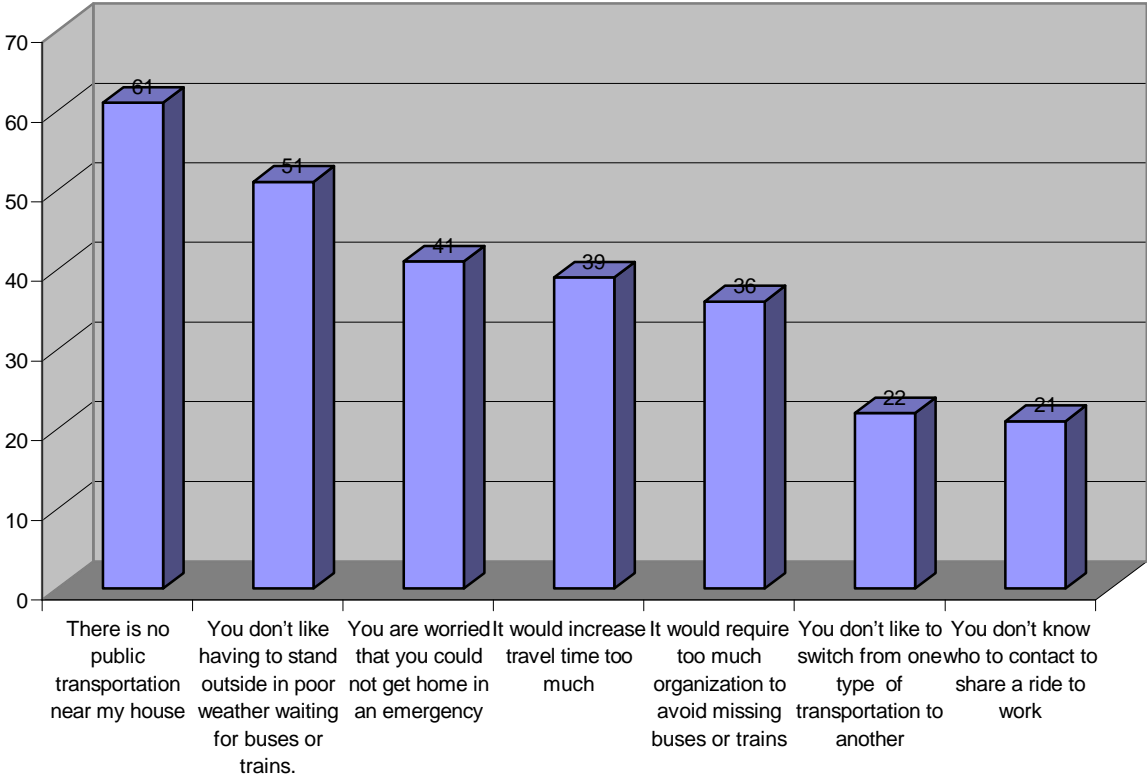
12. Are you actively considering using another means of transportation at this time?

(1) Yes 10%
(2) No 89%
(0) No answer 1% N=176

13. Since you currently use your car for commuting to work, tell me how much of a problem each of the following issues might be in preventing you from considering any alternatives to driving alone to work: [SKIP IF USING A VAN OR OTHERWISE RIDE SHARING]

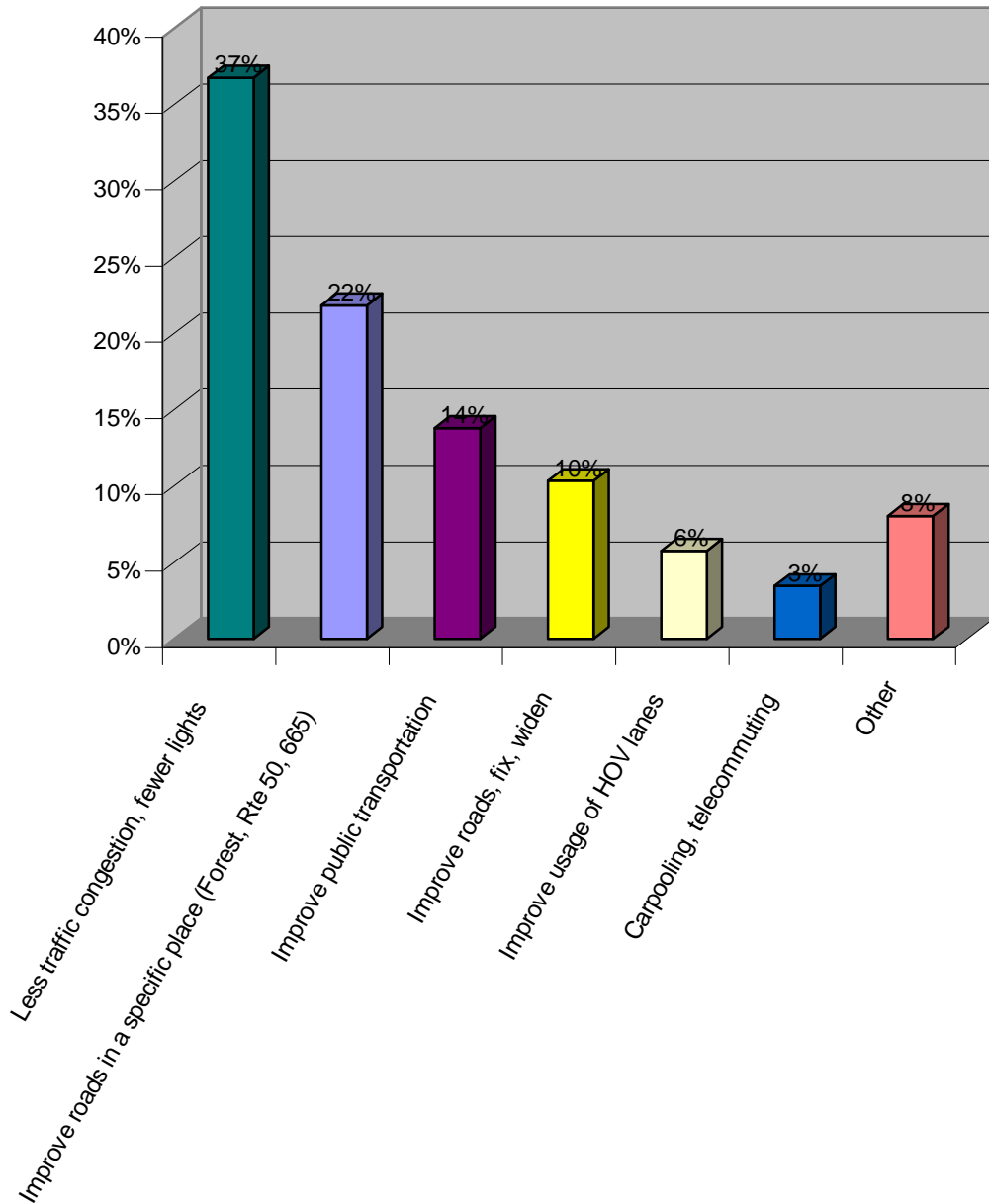
	Not problem	Little Problem	Somewhat problem	Serious problem	Severe problem	No answer
	(1)	(2)	(3)	(4)	(5)	(0)
14.1 It would increase travel time too much						
14.2 You don't like to switch from one type of transportation to another						
14.3 You don't like having to stand outside in poor weather waiting for buses or trains.						
14.4 It would require too much organization to avoid missing buses or trains						
14.5 There is no public transportation near my house						
14.6 You don't know who to contact to share a ride to work						
14.7 You are worried that you could not get home in an emergency						
14.8 You are worried that you wouldn't be able to run errands on the way to or from work						

Percent citing problem as serious or severe



14.9 What is the one thing that would most improve your commuting experience?

One thing most improve commuting (open-ended) in %



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ALL RESPONDENTS

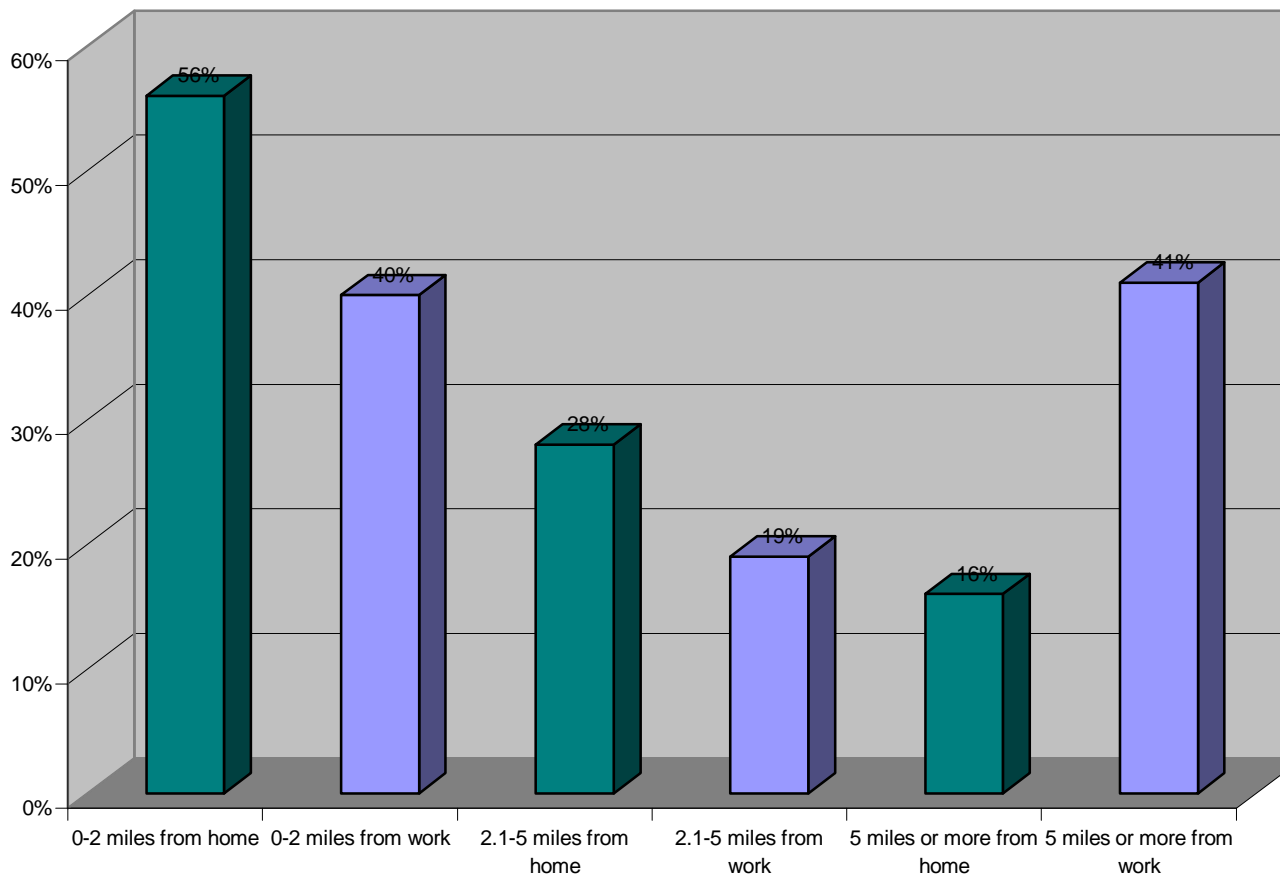
When thinking about grocery shopping, please answer the following questions:

N=353/216

15.0 How far from your home is the grocery store you use the most?
_____ **blocks/miles**

15.1 How far from your work is the grocery store you use the most?
_____ **blocks/miles**

Distance to Grocery from Home and Workplace(%)



15.2 When do you mostly shop – on weekends, on the way to work, the way from work, or some other time?

(1) Weekends (2) On way to work (3) Way from Work (4) Other times

N=351

	(1) Weekends	(2) On way to work	(3) Way from Work	(4) Other times
All respondents (N=351)	28	1	17	54
Full-time workers only (N=169)	40	1	30	28
Retired only (N=79)	14	1	0	85

15.3 What type of transportation do you typically use to go shopping?

- (1) Own car
 (2) Friend's or relative's car
 (3) Walk
 (4) Bicycle
 (5) Bus
 (6) Other (Specify: _____)

	Frequency	Percent
Own car	337	93.4
Friend's or relative's car	8	2.2
Walk	3	.8
Bicycle	1	.3
Bus	9	2.5
Other	3	.8
Subtotal	361	100.0
Missing	9	
Total	370	

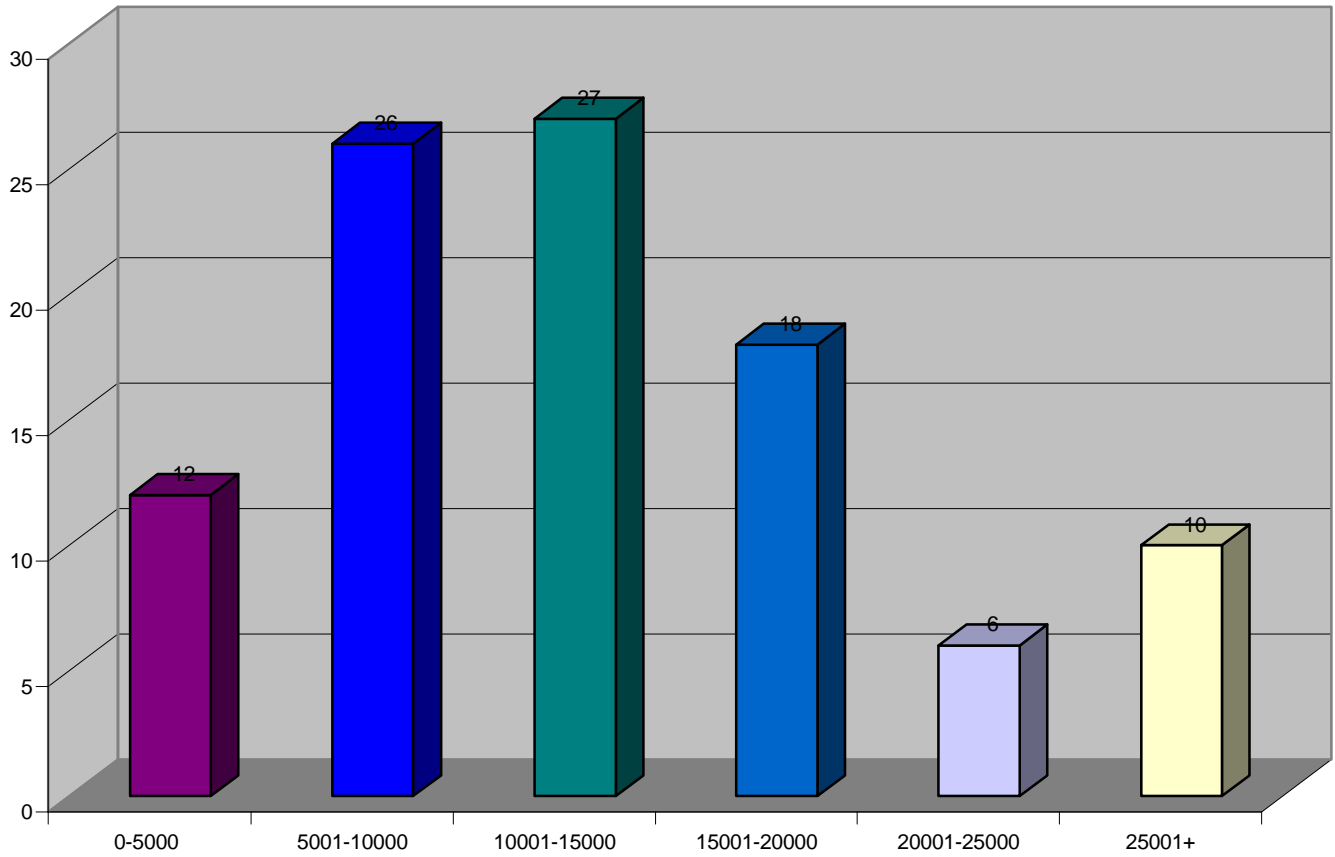
15.4 How satisfied are you with the choices you have to get to shopping areas?

(1) Very satisfied (2) Somewhat satisfied (3) Not very satisfied (0) No answer

(1) Very satisfied	(2) Somewhat satisfied	(3) Not very satisfied	(0) No answer
57	28	11	1

15.5 . If you own a car, how many miles a year do you drive?
_____ miles

Distance Driven per Year in miles (%)



16. How many times a week do you walk outside for exercise or to commute to work

- (4) Never
- (5) Once or twice
- (6) 3 to 5 times
- (7) More than 5 times

	Frequency	Percent
Never	62	17.3
Once or twice	70	19.5
3 to 5 times	107	29.8
More than 5 times	120	33.4
	359	100.0
Missing	11	
Total	370	

IF R says 2, 3, 4 ask: How would you describe the availability and quality of pedestrian facilities such as sidewalks and trails – would you say that they are excellent, good , fair or poor?

- (1) Excellent (2) Good (3) Fair (4) Poor (0) No answer

	Frequency	Percent
No answer	6	2.0
Excellent	52	17.3
Good	90	30.0
Fair	64	21.3
Poor	88	29.3
	300	100.0
Missing	70	
Total	370	

17. How many times a week do you use your bicycle for exercise or to commute to work?

- (4) Never or don't own a bike
- (5) Once or twice
- (6) 3 to 5 times
- (4) More than 5 times

	Frequency	Percent
Never or don't own a bike	267	75.6
Once or twice	60	17.0
3 to 5 times	12	3.4
More than 5 times	14	4.0
	353	100.0
Missing	17	
Total	370	

IF R says 2, 3, 4 ask:

17.1 How would you describe the availability and quality of bicycle facilities such as bike lanes and shoulders on roads – would you say that they are excellent, good , fair or poor?

- (1) Excellent
- (2) Good
- (3) Fair
- (4) Poor
- (0) No answer

	Frequency	Percent
No answer	15	12.0
Excellent	7	5.6
Good	17	13.6
Fair	35	28.0
Poor	51	40.8
	125	100.0
Missing	245	
Total	370	

17.2 When thinking about major improvements to the transportation system in our area, would you say that improving pedestrian facilities is a major or just a minor concern?

(1) Major (2) Minor (0) No answer

	Frequency	Valid Percent	Cumulative Percent	Non Walkers	Walkers	Non Bikers	Bikers
No answer	9	2.5	2.5	4	2	3	2
Major	171	48.2	50.7	32	50	45	59
Minor	175	49.3	100.0	65	48	52	38
	355	100.0		101	100	100	99
Missing	15						
Total	370						

17.3 How about bicycle facilities, would improving them be a major or a minor concern?

(1) Major (2) Minor (0) No answer

	Frequency	Valid Percent	Cumulative Percent	Non Walkers	Walkers	Non Bikers	Bikers
No answer	50	14	14	12	15	18	3
Major	151	46	60	33	47	37	73
Minor	140	40	100	54	38	45	23
	349	100		99	100	100	99
Missing	21						
Total	370						

18. If you have been to downtown Annapolis within the last two months, about how often have you used the following types of transportation:

	Never or rarely	Occasionally	Often	Always	Cases
18.1 Walked	52	19	14	16	342
18.2 Bicycle	88	8	5	1	335
18.3 Car	9	15	24	52	346
18.4 Bus	93	5	2	1	337

19. If you have traveled to downtown Annapolis for reasons other than work, how often have you done the following:

	Never	Once or twice	Several times	Often	Cases
19.1 Visited a restaurant or bar	10	30	29	31	352
19.2 Visited non-eating tourist sites	36	37	15	11	350
19.3 Shopped	28	36	19	18	349
19.4 Attended a meeting	63	24	7	5	350
19.5 Seen family or friends	49	22	13	16	350

20. Based on your travel to downtown Annapolis, please rate the following: [skip if no travel]

	Excellent	Good	Fair	Poor	No opinion	Cases
20.1 Ease of access to the downtown area	11	33	37	18	1	348
20.2 Ease of parking in downtown area	3	9	22	63	4	346
20.3 Adequacy of public transportation	3	16	20	16	45	344
20.4 Adequacy of sidewalks and/or bike lanes	13	36	27	15	10	345

21. Thinking about ways in which transportation in and out of downtown Annapolis might be improved for you and others, please rate the following options as very important, somewhat important or not very important to helping the transportation situation:

	Very important	Somewhat important	Not very important	No opinion	Cases
21.1 Provide improved pedestrian facilities	34	26	37	4	346
21.2 Provide improved bicycle facilities	31	32	29	9	345
21.3 Increase the number of parking garages in downtown Annapolis	57	22	18	3	345
21.4 More frequent shuttles around downtown Annapolis	49	26	14	11	345
21.5 Create a Park and Ride with frequent shuttles to downtown	51	30	15	6	342

The creation of park and ride centers in Parole and at the Naval Stadium are being considered. Please tell me how likely you would be to use it to get to locations in downtown Annapolis or around Parole under the following conditions. Please tell me if you would be very likely, somewhat likely, or not very likely:

21.6 Based on your current travel patterns, would you be very likely, somewhat likely or not very likely to use such a center?

Very likely	Somewhat likely	Not very likely	No opinion
21	27	51	6

Do you think the likelihood that you would use these centers would be greater, less or unchanged if:

	Greater	Less	Unchanged	No opinion	Cases
21.7 Parking and shuttle use at the centers was very low cost or free	56	5	34	6	346
21.8 Shuttles were available at least every 5 minutes	60	6	28	6	345
21.9 The cost of parking in downtown Annapolis went up significantly	50	10	30	9	346

22. Thinking generally about transportation in our area, is there anything you would like transportation planners to consider as they evaluate transportation alternatives for the next 20 years?

	Percent	Cases
Bus improvements (more service, to certain areas, particularly congested ones and to major destinations)	15	35
Road improvements, limit/reduce congestion, add more lanes, reduce number of signals, synchronize signals	13	30
Metro – extend to Annapolis	9	20
Pedestrian improvement (sidewalks, longer signal time for crossing streets, crossing guards)	8	18
Light Rail – extend to Annapolis	8	19
Parking, provide more in downtown, make sure it is handicap adapted	8	19
Bike improvements (bike lanes and racks)	7	15
Shuttles (around town, during special events)	6	13
Public transportation – favors in general, use more, provide incentives	6	13
Alternative roads, in highly congested areas such as Forest, Bay Ridge	5	12
Better planning, of construction, of general development, of systemic relationships between modes of transport	5	12
Park and Ride, establish	1	2
HOV – do more with these, allow use by hybrids	1	2
Other	8	19
	100	229

To help us better understand your responses, please tell us the following:

23. I am going to read some categories of age classifications. Please stop me when I reach the category in which your age falls.

V23

	Frequency	Percent
No Answer	2	.6
18 to 29	40	11.3
30 to 44	96	27.1
45 to 59	120	33.9
60 or more	96	27.1
	354	100.0
Missing	16	
Total	370	

24. What are the ages of any children living in your household? [check all that apply]

30% (1) 0-5

8% (2) 6-10

12% (3) 11-16

11% (4) more than 16

24.1 I am going to read some categories relating to education. Please stop me when I reach the category in which the highest level of your formal education falls.

V24.1

	Frequency	Percent
No Answer	6	1.7
less than a high school degree	2	.6
a high school degree	45	12.7
some college or a two-year degree	92	25.9
completed college with a bachelor's degree	98	27.6
post graduate work	112	31.5
	355	100.0
Missing	15	
Total	370	

25. I am going to read some categories relating to income. Please stop me when I reach the category in which your household income falls.

	Frequency	Percent
No Answer	59	16.7
Less than \$30,000	30	8.5
\$30,000 to \$50,000	56	15.8
\$50,000 to \$75,000	69	19.5
\$75,000-\$100,000	57	16.1
\$100,000-125,000	34	9.6
Over \$125,000	49	13.8
	354	100.0
Missing	16	
Total	370	

26. Regarding race, how would you describe yourself?

V26

	Frequency	Percent
No Answer	13	3.7
Black	28	7.9
White (non-Hispanic)	300	84.5
Hispanic	5	1.4
Asian	6	1.7
Other or mixed racial background	3	.8
	355	100.0
Missing	15	
Total	370	

27. What is your current marital status? N=354

(1) Single	(2) Married	(3) Separated or Divorced	(5) Widowed	(6) Other	(0) Won't say
19	59	11	7	1	2

28. Which of the following best describes your home: A detached single family home, a townhouse, a condo, or an apartment?

N=357

(1) Detached single family	(2) Townhouse	(3) Condo	(4) Apartment	(0) No answer
70	11	7	11	

29.1 What is the name of your community if it has one (such as Admiral Heights or Hillsmere):

V29

	Frequency	Percent
	73	19.7
Admiral's Reach	1	.3
Admiral Farragot	1	.3
Admiral Height	1	.3
Admiral Heights	7	1.9
Admiral Oaks	1	.3
Admirals Reach	1	.3
Amberly	2	.5
Anchorage	2	.5
Ann Cove	1	.3
Annapolis	2	.5
Annapolis City	1	.3
Annapolis Cove	3	.8
Annapolis cover	1	.3

Annapolis Cover	1	.3
Annapolis Overlook	1	.3
Annapolis Rhodes	1	.3
Annapolis Roads	1	.3
around Edgewater	1	.3
Arundel on the bay	1	.3
Arundel on the Bay	3	.8
Avalon Landing	1	.3
Bau Rodge	1	.3
Bay Bridge	1	.3
Bay Head in Annapolis	1	.3
Bay Highlands	1	.3
Bay Hills	2	.5
Bay Ridge	3	.8
Bay Ridge Gardens	1	.3
Bay Ridge Hills	1	.3
Bayhills	1	.3
Bayridge	1	.3
Beachwood on the Burley	1	.3
Beechwood on the Burley	2	.5
Black Walnut	1	.3
Black Walnut Cover	1	.3
Bluffs at Bay Ridge	1	.3
Briarwood	2	.5
Broadneck	3	.8
Broadview	1	.3
Brown Woods	1	.3
Brownwoods	1	.3
By Water Farms	1	.3
Bywater	1	.3
Cape St. Claire	17	4.6
Cape St. John	3	.8
Cape St.Claire	1	.3
Cedar Ridge	1	.3
Chesapeake Bay Harbor	1	.3
Chesapeake Harbor	2	.5
College Creek	1	.3
College Creek Terrace	1	.3
College Parkway	1	.3
Colony Heights	1	.3
Copperwoods	1	.3
Crownsville	1	.3
East Port	1	.3
Eastprt	1	.3
Eastpoint	1	.3
Eastport	22	5.9
Epping Farms	1	.3
Epping Forest	3	.8
Fairwinds	3	.8
Fishing Creek Farm	1	.3
Fishing Creek Farms	1	.3
Forest Drive	1	.3
Forest Glen	1	.3
Forest Hills	1	.3
Forest Meadows	1	.3

Forest Village	1	.3
Georgetown Grove	1	.3
German Homewood	1	.3
Germantown Homewood	1	.3
Green Acres	1	.3
Greenslanding	1	.3
Harlequin	1	.3
Harness Creek	3	.8
Harness Creek Overlook	1	.3
Heritage harbor	4	1.1
Heritage Harbor	12	3.2
Heritage Harbour	1	.3
Highland Beach	1	.3
Hillsmere	19	5.1
Hillsmere Shores	5	1.4
Hilltop Village	1	.3
Historic Annapolis	2	.5
Historical Annapolis	1	.3
Holmstead	1	.3
Homewood	2	.5
Hornpoint	1	.3
Hunt Meadow	3	.8
Hunt Meadows	1	.3
Huntmeadow	1	.3
Hutts Home	1	.3
Kitty Creeks	1	.3
Leshire	1	.3
Lindmore	3	.8
Londentown	1	.3
Mariners Point	1	.3
Meadows	1	.3
Mulberry Hill	1	.3
Murray Hill	1	.3
Murray Hills	1	.3
Murry Hills	1	.3
Naval Academy	1	.3
Naval Station Housing in Annapolis	1	.3
Newtown	1	.3
North Green	1	.3
Oxford Landing	2	.5
Oxford Landing in Annapolis	1	.3
Parole	3	.8
Perserves & Broadcreek	1	.3
Pleasant Plains	1	.3
Present Hills Assoc	1	.3
President's Hill	1	.3
Quag Harbor	1	.3
Quaterfield Crossing	1	.3
Quiet Water Park	1	.3
Revel Downs	1	.3
Revell Down	1	.3
Riva Trace	6	1.6
Riva Woods	2	.5
Rivergate	1	.3
Rolling Hills	1	.3

Rolling Knolls	4	1.1
Rosewood	1	.3
Sae Fern	2	.5
Saefern	1	.3
Safrin	1	.3
Saint Margaret	1	.3
Salt Works	1	.3
Sea Breeze	1	.3
Seabreeze	2	.5
Severn	1	.3
Severn Manor of Annapolis	1	.3
Severna Park	1	.3
Sherwood Forest	1	.3
SouthHaven	1	.3
Southtown shores	1	.3
St Margarets	2	.5
St Martins	1	.3
St. Margaret's Landing	2	.5
Taniger Forest	1	.3
The Gentry	1	.3
The Meadows	1	.3
The Point	1	.3
Therrystone	1	.3
Tidewater Colony	1	.3
Truxton High	1	.3
Tyler Heights	1	.3
Waldorf	3	.8
Walnut Ridge	1	.3
Water Gate Village	1	.3
Watergate	1	.3
Watergate Village	2	.5
Wencester on the Severn	1	.3
West Annapolis	4	1.1
Whispering Woods	2	.5
Wild Rose Shores	2	.5
Wimbelton Farms	1	.3
Winchester	1	.3
Windfern Forest	1	.3
Wings Creek	1	.3
Wispering Woods	1	.3
Woods Landing	2	.5
Total	370	100.0

30.0 Gender (N=369): 41% (1) Male 59% (2) Female

31.0 Zipcode

V31

	Frequency	Percent
Unknown	2	.5
21114	1	.3
21401	232	62.7
21402	3	.8
21403	130	35.1
21405	2	.5
Total	370	100.0

Detailed, Individual Responses for Question “Suggestions for Transportation Planners...”

	Frequency	Valid Percent
	119	32.2
a lightrail that connects Balto, Annapolis I& DC	1	.3
a trolley line through the city of Annapolis	1	.3
add more public transportation	1	.3
add more side walks	1	.3
adequate transp. for dev. of certain areas	1	.3
alternate routes durilng sporting events	1	.3
alternative access to Annapolis area near Forest Drive	1	.3
analyze grid lock in parole area	1	.3
another road--Bayridge Rd	1	.3
assign bike lanes; mandatory cross walk enforcement	1	.3
better access roads than just 495	1	.3
better access to Taylor Avenue	1	.3
better bike lanes	1	.3
better bike lanes; shuttles on big event nights; bike lane on Forest Drive	1	.3
better bus parking	1	.3
better bus routes	1	.3
better bus service; more service to surrounding counties	1	.3
better bus, lightrail, train to come to Annapolis	1	.3
better control of hhighway, more cameras at stop lights; improving shoulders & yield areas	1	.3
better parking & better signs	1	.3
better planning prior to development	1	.3
better road conditions	1	.3
better roads	1	.3
better south county bus transportation	1	.3
better walking conditions for certain areas	1	.3
bike-popular trail extended into downtown	1	.3
bike lanes	4	1.1
bike lanes and parking	1	.3
bike roads needed	1	.3
Bike trails/ Light rail routes	1	.3
bring Lightrail to Annapolis; bus lines to Edgewater	1	.3
bring Megtro to get from Annapolis to Washington	1	.3
bring Metro into Annapolis	1	.3
bring Metro out to Annapolis	1	.3
bring Metro to Annapolis	1	.3

bring shuttles to apartment complexes & drop them off closer to living quarters	1	.3
build as many roads as there are houses	1	.3
build wider roads; parking garages; improve walkways around commercial areas	1	.3
buses up the 178 corridor	1	.3
check with parking and transp. authorities in Silver Spring & Tacoma Park	1	.3
combination of different methods of transp. e.g. metro	1	.3
commuter buses	1	.3
commuter rail system	1	.3
congestion; overdevelopment	1	.3
connect metro in DC & Baltimore & Annapolis	1	.3
consider life around highways/residents	1	.3
consider the elderly	1	.3
constant improvement of roads isn't necessary. Allow parking everywhere like in Europe	1	.3
construction during day time	1	.3
construction should be during non-busy hours	1	.3
create "bus only" lanes	1	.3
create alternate routes	1	.3
create more bus services around the community	1	.3
create more roads in Annapolis	1	.3
create more sidewalks and bike lanes in Annapolis	1	.3
create more sidewalks on local roads	1	.3
DC commuters, airport commute	1	.3
DC Metro to Annapolis	1	.3
direct line to downtown shopping mall	1	.3
do roadwork during night instead of day	1	.3
Don't raise parking prices in downtown.	1	.3
Downtown Annapolis-provide incentives for people who walk and do not use their cars	1	.3
downtown traffic bicycle lanes	1	.3
Downtown walking only/ use shuttles	1	.3
ease of access to Annapolis	1	.3
easier access to & from Annapolis	1	.3
easier access to downtown	1	.3
Eastport needs bus routes	1	.3
easy access roads	1	.3
easy public transp. to D.C. & Balto. ; low price transp to & from B.W.I	1	.3
emphasize bike lanes	1	.3
employees should not have to move car every two hours	1	.3
encourage use of public transportation	1	.3
encouraging tourists to park elsewhere than downtown	1	.3
expand bus service to Heritage Harbor	1	.3
expand Forest Drive	1	.3
expand roads where most traffic occurs	1	.3
extend light rail. More comprehensive network of light rail & buses	1	.3
extend Metro toward Annapolis Area	1	.3
extend roads; metro public transp.; bring everything up to modern standards	1	.3
extend the light rail from Balto to Annapolis	1	.3
extend train from New Carrollton to Annapolis	1	.3

extension of Light Rail to Annapolis	1	.3
fewer roads, more shuttles	1	.3
fix Forest Drive	2	.5
fix up West St.	1	.3
Forest Drive congestion	1	.3
free parking downtown on specific days	1	.3
get Metro to Annapolis	1	.3
going outside of Annapolis too	1	.3
greater access to Balto & D.C. bus	1	.3
help getting out of the Jennifer Road area	1	.3
high speed train between Wash. & Balto.	1	.3
HOV lane laws changed for hybrid car	1	.3
improve parking; safe bicycling routes	1	.3
improve Parole; West St. & Riva intersection	1	.3
improve sidewalks & cross walk. Bike lanes on all major roads	1	.3
improve traffic on Severn River Bridge	1	.3
improvement on bridges & roads	1	.3
increase alternative forms of transportation	1	.3
increase bus lines and service	1	.3
increase bus routes	1	.3
increase bus routes from Eastport to downtown	1	.3
increase buses, rails etc	1	.3
increase garages in downtown Annapolis	1	.3
increase HOV lanes; remove tolls from bridges	1	.3
increase public transportation	1	.3
increase road size	1	.3
increase service on roads	1	.3
increase transp. for elderly & youth	1	.3
increase ways to get across Severn River also work on traffic around Annapolis Mall	1	.3
increased bus service	1	.3
increased public transp. to Parole & Eastport. Consideration for people with disability	1	.3
just traffic	1	.3
lack of public transp. to D.C. Extend Baltimore light rail and DC Metro to Annapolis	1	.3
less congestion	1	.3
less traffic	1	.3
less traffic congestion; easier access to roads	1	.3
light rail	1	.3
Light rail from Annapolis to D.C. to Baltimore	1	.3
Light Rail out of Annapolis going to Baltimore & Washington	1	.3
Light Rail System	1	.3
Light rail to DC	1	.3
Light Rail/Shuttle from Annapolis Neck to Rt. 2 park & ride areas	1	.3
light rail to Wash DC from Annapolis	1	.3
light rails, road expansion	1	.3
low cost	1	.3
make crosswalks more efficient	1	.3
make handicap accessible; expand public parking	1	.3
make sure one-way streets are clearly marked	1	.3
make sure there is no Metro to Annapolis	1	.3
Metro DC & Light Rail to BWI	1	.3
Metro from Annapolis to D.C.	1	.3
Metro or lightrail from Annapolis to DC, Baltimore etc	1	.3

Metro to Annapolis	1	.3
Metro to DC & Baltimore Light Rail	1	.3
minimize traffic downtown Annapolis	1	.3
mono rail; improving highways (access to rt. 50)	1	.3
more available parking downtown Annap. & more use of public transp	1	.3
more bike friendly; shuttle service	1	.3
more bike lanes when roads are improved	1	.3
more bike lanes; more frequent bus service	1	.3
more bus accesss to everywhere	1	.3
more bus lines that go into suburbs more	1	.3
more bus routes	1	.3
more bus service	1	.3
more bus service to the suburbs	1	.3
more buses	2	.5
more buses & bus stops	1	.3
more buses on Rt 50	1	.3
more connections via rail to Metro New Carrollton& D.C. especially on weekends	1	.3
more lanes on highway	1	.3
more lanes on Rt.50 and access from Rt 50 to mall	1	.3
more lanes to match new houses & development	1	.3
more mass transit (state level), frequent shuttles, improved bike paths	1	.3
more newer buses; more bus routes	1	.3
more options to Balto & Wash DC	1	.3
more park & rides	1	.3
more parking	1	.3
more parking downtown	1	.3
more public transp. also speed limits enforced	1	.3
more public transp. around Arnold	1	.3
more public transp. to downtown;; better planning for construction in downtown areas	1	.3
more public transportation	4	1.1
more public transportation to BWI and major shopping centers	1	.3
more reliable buses	1	.3
more roads	2	.5
more shuttles	1	.3
more shuttles to and from cities	1	.3
more sidewalks	1	.3
more sidewalks needed	1	.3
more transportation to BWI, stadiums	1	.3
more walking & bicycle trails around Annapolis & more parking	1	.3
must reduce traffic noise and put up barriers	1	.3
need kiosks and shelters for bus stops	1	.3
need parking in downtown Annapolis	1	.3
no more HOV!!	1	.3
no more subdivision	1	.3
not adequate inter-urban & interstate public transportation	1	.3
not enough marked crosswalks; do not allow tour buses in downtown; have bus in surrounding suburbs to downtown	1	.3
park & rides	1	.3
parking	2	.5
parking arrangements	1	.3
parking downtown	1	.3

Parole exit(east bound) needs improvement	1	.3
privatized transportation	1	.3
Problem at Forest Drive & Aris T Allen Blvd--too many lights or something	1	.3
provide buses to the stores	1	.3
provide more parking for tourists	1	.3
provide more public transp. to Annapolis	1	.3
provide seats at bus stops	1	.3
public transportation to Balto. and DC until 10 pm.	1	.3
put speed bumps in residential areas	1	.3
rail connections with Washington & Balto	1	.3
redesign of traffic lights/traffic flow	1	.3
reduce individual cars	1	.3
reliable buses between Annapolis, Wash., & Balto.; high speed rail	1	.3
replace bridges on Rowe Blvd	1	.3
seriously looking at metro from Annapolis to D.C.; look at Forest Drive	1	.3
short term parking-more of it	1	.3
Shuttle from Annapolis to Community College and shuttles from populated areas to downtown	1	.3
shuttle from eastport	1	.3
shuttle to many different parts of Annapolis	1	.3
shuttles	1	.3
sidewalks on Riva Rd& more buses in Riva with shelters. Increase shoulders for bikes	1	.3
signs & awareness of lane changes	1	.3
smooth out the sidewalks in the area	1	.3
speed up road construction, unsafe for pedestrians	1	.3
stop building on Forest Drive	1	.3
stop lights	1	.3
stop overdevelopment	1	.3
subway extension	1	.3
subway in different areas	1	.3
synchronize traffic lights so you don't have to keep stopping	1	.3
take Rt. 665 all the way to Hillsmere and Bay Ridge	1	.3
too much development	2	.5
too much traffic-please reduce	1	.3
traffic circle on West St.	1	.3
traffic from Riva to the mall	1	.3
traffic guards for pedestrian crossings	1	.3
traffic on Forest Drive	1	.3
traffic out of downtown	1	.3
traffic patterns in Eastport -parking along streets is a problem	1	.3
traffic signals on West St for bicycles	1	.3
train to Balto - Wash DC connecting Amtrack from BWI	1	.3
train/light rail from Annapolis to Baltimore	1	.3
trains to Balto from Annapolis	1	.3
transportation from Annapolis to Edgewater & airport	1	.3
transportation to Eastern Shore	1	.3
trffic back up to Bay Bridge	1	.3
upgrade the road conditions in the county	1	.3
using buses	1	.3
water taxi	1	.3
West St. & the Mall	1	.3

widen roads & more lanes	1	.3
widen roads, add more lanes	1	.3
widen the roads	1	.3
wider highways; more roads	1	.3
wider shoulders on road for bike riding	1	.3
would like city bus to come into Heritage Harbor	1	.3
Total	370	100.0