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Potential Initiatives that Military Leadership Can Take to Reduce Automobile  
Dependency for Service-members and Employees at Naval Base Kitsap - Bremerton  
and the Puget Sound Naval Shipyard in Bremerton, WA

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This work is dedicated to my wife, Julie. I have always loved you and your steadfast heart, honest answers, and timely advice.

In the final analysis, however, action urgently needs to be taken to promote other modes of transport rather than the private car, in order to avoid creating a climate of mobility comparable to that in the United States.

*European Conference of Ministers Transport Round Table, Paris 2001*

As he was approaching Damascus on this mission, a light from heaven suddenly shone down around him. He fell to the ground and heard a voice saying to him, "Saul! Saul! Why are you persecuting me?" "Who are you, lord?" Saul asked. And the voice replied, "I am Jesus, the one you are persecuting! Now get up and go into the city, and you will be told what you must do."

*Acts 9:3-6 (Blue Letter Bible 2012)*

# TABLE OF CONTENTS

	Page
List of Figures.....	ix
List of Tables.....	x
Introduction .....	1
Chapter One: Background.....	3
What is Automobile Dependency? .....	3
Is this a problem?.....	4
Why Bremerton? .....	6
Are people willing to reduce their automobile dependency? .....	8
Complex Problem .....	10
United States Navy .....	11
Local Government Control.....	13
Outside Influences .....	18
Summary.....	22
Chapter Two: Case Studies of Campus Style Solutions.....	24
Military Installations.....	24
Guam.....	24
Joint Base Lewis-McChord .....	27
Seattle Children’s Hospital .....	28
Universities .....	30
University of Washington .....	31
Harvard University .....	33
Yale University.....	34
Stanford University .....	35

Chapter Three: Interviews .....	37
Chapter Four: Commanding Officer’s Potential Initiatives .....	42
Monetary Incentives.....	44
Non-monetary Incentives.....	45
Urban Design Approach .....	46
Transit Related Approach .....	49
Jobs-Housing Balance .....	51
Chapter Five: Methodology .....	54
Survey.....	54
Approach.....	56
Respondents.....	56
Dedicated Hourly Commute Cost.....	57
Respondent Military/Civilian Demographics.....	58
Survey Results: Scenarios to Reduce Automobile Dependency.....	60
Scenario 1: Commanding Officer One Month Drastic Commute Reduction .....	60
Scenario 2: TRANSIT - Sell car take transit.....	62
Scenario 3: TRANSIT - MILPASS.....	64
Scenario 4: TRANSIT - Local Transit Improvements .....	65
Scenario 5: NON-MONETARY - Liberty Incentive .....	67
Scenario 6: NON-MONETARY - Physical Exercise Commute .....	68
Scenario 7: NON-MONETARY – No Vehicle Policy .....	70
Scenario 8: JOBS-HOUSING – New Family Housing Recommendation.....	71
Scenario 9: JOBS-HOUSING – Increase Housing Allowance Near Base .....	73
Scenario 10: JOBS-HOUSING – Increase on base housing .....	74
Scenario 11: URBAN DESIGN – Bike City .....	76

Scenario 12: URBAN DESIGN – Pedestrian Focus.....	77
Scenario 13: MONETARY – Paid Parking.....	78
Scenario 14: MONETARY – Monthly Non-SOV Stipend .....	80
Scenario 15: MONETARY – Local Toll.....	81
Scenario 16: NON-MONETARY – Wait Time .....	83
Scenario 17: TRANSIT - Navy Bus Service.....	84
Scenario 18: TRANSIT – Zipcars on base.....	85
Other suggestions.....	87
Chapter Six: Generalization and Synthesis.....	89
Identification of Commonalities .....	89
Pecking Order.....	89
Observations.....	92
Recommendation.....	95
Future Research .....	99
Chapter Seven: Conclusion.....	100
BIBLIOGRAPHY .....	101
Appendix A – Civil Engineer Corps Officer Responses.....	105
Appendix B – Human Subjects Division Exemption Status Letter.....	109
Appendix C – Survey Recruitment Material.....	111
Appendix D – Consent Form.....	112
Appendix E - Survey Responses.....	115

**List of Figures**

Figure 1: Bremerton in the Puget Sound ..... 7

Figure 2: The base in relation to the City of Bremerton ..... 8

Figure 3: Department of the Navy Actions..... 12

Figure 4: Local Government Actions ..... 17

Figure 5: Outside Influences ..... 22

Figure 6: Sustainability Efforts..... 27

Figure 7: Commute Calendar ..... 30

Figure 8: University of Washington Comparison. .... 33

Figure 9: Harvard University Comparison. .... 34

Figure 10: Yale University Comparison..... 35

Figure 11: Stanford University Comparison..... 36

Figure 12: On Base Parking and Building Footprints ..... 47

## List of Tables

Table 1: Bremerton Automotive Aftermarket Expenditures .....	19
Table 2: University Comparison .....	31
Table 3: Housing Units by Occupancy Status .....	52
Table 4: Dedicated Hourly Commute Cost.....	58
Table 5: Positive and negative responses for each survey question.....	91

## **Introduction**

A variety of factors led me to question base automobile dependency on Navy installations. Primarily my concern was for junior Sailor and Marine budgets, national security, and safety. The strongest case and what spurred me on to build this thesis was my own realization of my automobile dependence and the events that helped me change. Similar to Saul seeing the light and truth of Jesus Christ which led to his conversion, name change, and becoming an apostle to others, I've seen the light of my automobile dependence. I don't plan to change my name or tell of any greater truth than that of Jesus Christ, but I do think it worthwhile to tell my own story.

### **My Automobile Independence Testimony**

I consider myself to be a patriotic American. I serve in the United States Navy as a Civil Engineer Corps Officer and am an American made automobile owner. As a fully funded graduate student, I had the privilege of driving to the University every day I had class. I paid for the quarterly parking fee and did not participate in the UPASS program (subsidized public transit pass). Even after living in Seattle for 6 months, I didn't know about Seattle's unique train/bus tunnel and had never taken the bus or train in Seattle. It was easy to justify driving alone to campus because: of the random scheduling of classes, I could afford the convenience, and besides, the bus didn't run too close to my house. I was automobile dependent.

Several events happened, nearly simultaneously to first help me identify my own dependency and then to help me overcome this dependence:

- The first event came when our studio took a field trip via the bus. I didn't have a UPASS like all the other students and I didn't have any cash. I borrowed enough money from one of the students to gain access to my first Seattle bus ride.
- I learned that soldiers taking showers at Lewis-McChord was causing congestion on I-5.
- While my car was in the shop a fellow student who lived near me offered to show me the route she takes home via bus, and so I took my second bus ride, with a pleasant walk home.

- Later I took a pedestrian focused course. On the very first day of class we were asked how we commuted to the campus – I was the only one who drove alone.
- Part of the pedestrian focused class asked us to keep a travel journal showing how and where we travelled for four days. My result - zero transit, zero bicycle, all car and walking, further public evidence that I was automobile dependent.
- I was having more problems with my second car and taking a course that met every morning and so I decided to enroll in the UPASS program for the summer quarter. I was able to catch up on homework on the bus.
- The UPASS became mandatory in the fall 2011 quarter. I was hooked.
- I decided to sell my second car, joined zipcars, and became automobile independent.

### **Asking Questions**

As a Naval Officer, I thought it was important to look at both the bases and the base personnel to see if these same patterns or elements of automobile dependency existed there as well. Though not as important as my testimony of Jesus Christ, this life changing testimony is worth passing on. Were there others like me? Am I the only one who is dependent on my car? Why am I hanging on to it? What would make me let go of the car? How is car use affecting the base? How about the local community?

These questions led to more questions, eventually causing me to ask how effective initiatives would be. And what would people think of a given approach? Do some car reduction techniques resonate with civilians and not with service-members or vice versa? What could the base commanding officer do to help or to hinder automobile dependency?

I intend to show that (a) there are others like me who are automobile dependent for various factors, (b) the commanding officer can do something about this dependency, and (c) some approaches are more effective than others.

# Chapter One: Background

## What is Automobile Dependency?

Automobile dependency can be summed up as: requiring citizens to use a car to be able to participate in society. Automobile dependency can also be indirectly connected to a government body, employer, developer, or other large decision maker who builds policies and/or infrastructure that requires its subordinates to use a privately owned automobile. Though sometimes accidental, many decisions are made based on initial cost savings, short sightedness, and perceived convenience. If the base urban design, policies, or fiscal restrictions require members to carry out their mission with a car, driving alone, these factors are influencing automobile dependency (i.e., you are expected to have a car to do your duty or carry out this mission, but a car will not be provided for you).

The research into reducing automobile dependence is a global issue of scientific and practical importance. Though primarily a larger issue in first world countries that have room to grow (e.g., Canada, Australia, and U.S.), it already has begun to impact second and third world cultures. Though not usually advertised, ubiquitous car ownership is currently fundamentally accepted and should be challenged due to the unintended (or ignored) consequences: traffic, economic impacts, CO<sub>2</sub>, safety, poverty, urban design, transportation planning, community building, etc.

With automobile dependency unchecked, military bases and their surrounding communities will continue to grow in traffic congestion, safety issues, urban sprawl, increased financial constraints, and other typically negative benefits. Indirectly from this research may be the discovery of important practical benefits to military and/or civilian communities by the focused reduction in automobile dependency. The research question, restated is:

*What incentives are most effective at reducing automobile usage at the Base?*

Many Americans cannot wait to have their first car and love the freedom that comes from having a car and the convenience that has been built into most post World War II communities when you do have a car. So this is not often seen to be a problem.

### **Is this a problem?**

When I asked several of my fellow Civil Engineer Corps Naval Officers about automobile dependency and for case study examples, I was given generally supportive answers and suggestions, but two responses were clearly negative and questioning. One simply asked “is this a problem?” Much like any efforts, answering our critics provides some valuable stimulus and accountability.

My reasons for seeking solutions for decreasing automobile dependency on bases really goes back primarily, to my concerns for personal budgets, national security, and safety:

- the very oil we're using to operate our vehicles is what is driving many political pressures in oil rich areas of the world,
- the service members who are spending over 20% of their limited income on automobile related expenses have to cut other essentials out of their budgets,
- much of the limited real estate on bases is dedicated to parking, roads, parking garages and other automobile infrastructure with little or no other use of that space, and in my opinion,
- decreased camaraderie is probably related somehow to isolation with the freedom of driving.

I think automobile dependency is not yet an emergency and often construed as not a problem, in fact many would say that cars have made their lives better and more convenient. My objective is not to attack cars or car owners (I am one myself) or even to wean America off of one of its greatest inventions. Current and future decisions made by base (and any city or campus) leaders that force their citizens to own and operate a car are heading in the wrong direction and *that* should be challenged. My objective is to identify some areas where leaders and planners can institute some measures to increase the benefits seen when citizens are not dependent on the

automobile. Automobile dependency is a poor direction that will lead to a much greater problem that will be more difficult to solve tomorrow than if we were to act today.

Some more general reasons why a city (i.e., a base) should be concerned about decreasing automobile dependency comes from Perth, Australia (Newman and Kenworthy 1989). I've included the list in its entirety:

- lessening the vulnerability of a city to oil supply disruptions
- transportation related inflation and increased balance of payments problems from imported oil
- growing frustration and pressures on personal freedom as urban living becomes dictated by longer and longer travel distances, traffic congestion and parking considerations
- impossibility of bicycling and walking because of sheer distances involved and non-viability of transit for most trips
- a large proportion of transportation disadvantaged people (children, the elderly the poor and handicapped persons who can't use cars – up to 50% in some cities)
- a high public transportation deficit and diminishing services
- high levels of environmental impact from traffic and roads including vehicular emissions (especially photochemical smog), noise, visual intrusion and social severance of neighborhoods
- high costs of urban development as new roads, sewers, schools, community centers, transit services etc. are built (and duplicated) farther from the city center and the old inner areas decline in population and decay economically
- loss of human vitality, intimacy and neighborliness due to lack of mixing between houses, shops and other activities (i.e., excessively rigid zoning)
- central cities that are merely functional and sterile corporate centers lacking in human attractiveness, and increasingly dangerous especially after work hours
- social problems of excessive privacy and isolation and increasing crime, assisted by the lack of community (e.g., the need for formal neighborhood

watch schemes to replace what was once the natural function of urban community).

No matter what the reasons are for reducing automobile dependency, if these don't resonate on a personal level, behavior is unlikely to change. Instead of listing why we need to reduce our dependency on cars, We need to look at a given site, campus, or base and look at the specific area to find useful products or approaches for that site. The final product can be used as a sounding board for commanding officers seeking to reduce automobile use on a given base. It can also be used as a starting point for future research due to the qualitative research methodology. Each base will have unique characteristics that make different incentives more plausible than others (e.g., in or near a large city, bike friendly city, rural, etc.), so this research focuses on the base in Bremerton as a case study.

## **Why Bremerton?**

The Puget Sound Naval Shipyard, collocated with Naval Base Kitsap – Bremerton<sup>1</sup> (the base<sup>2</sup>), is the City of Bremerton's largest employer. Several complex factors over the course of the 120 years since the founding of the base have reduced automobile dependency and several have increased automobile dependency. Some of these factors have been accidental and some have been intentional, for better or for worse.

After the popularity of the automobile, Bremerton began to accommodate the car and still caters to the car today. Along with other factors, service-members, employees, and others who access the base have become increasingly car dependent. This phenomenon with automobile ownership has become ubiquitous and a rite of passage – seemingly encouraged by base urban designs allowing for increased automobile usage and plentiful free parking.

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<sup>1</sup> Naval Base Kitsap is the largest naval organization in Navy Region Northwest and is composed of installations in Bremerton, Bangor and Keyport (Naval Base Kitsap n.d.).”

<sup>2</sup> I am purposely ignoring the complex collocated, command, and regional structures and refer to this major employer (shipyard + NBK-Bremerton) for urban design purposes as “the base.”

Bremerton in the Puget Sound



Figure 1: Bremerton in the Puget Sound

I did not select Bremerton (Figure 1) because they have a problem; in fact, the base has had great success in reducing automobile dependency. The shipyard portion of the base has been a regular winner of commute smart awards, winning most recently in 2011 with an amazingly low 48% commute alone (Friedrich 2011).

I selected Bremerton (Figure 2) because of its pre-automotive age, proximity to the University of Washington, and as a smaller case study for the growing concern from University of Washington faculty and members of the Puget Sound Regional Council about traffic and congestion at Joint Base Lewis-McChord. I thought that if I could shed some light on automobile dependency issues (and successes) in one focused Department of Defense (DoD) location in the Puget Sound, it could resonate and be somewhat useful, at least as a discussion point or at most for a pattern to set up their own base for an automobile dependency analysis and begin to address the growing trend of automobile dependency.

I begin by looking at what initiatives are already in place on or near Bremerton to help reduce automobile dependency.

### Are people willing to reduce their automobile dependency?

I remember hearing about a typical immigrant family coming to America with a strong desire to finally having a place of their own, their own car, and other rights of living the American dream. I don't think this is to unfamiliar or unrealistic. Of course I am not working towards understanding psychological motivations for human behavior, but I think it is important to realize that no matter what efforts a base, employer, government, or city makes to reduce automobile dependency, some people will resist

The Base in relation to the City of Bremerton

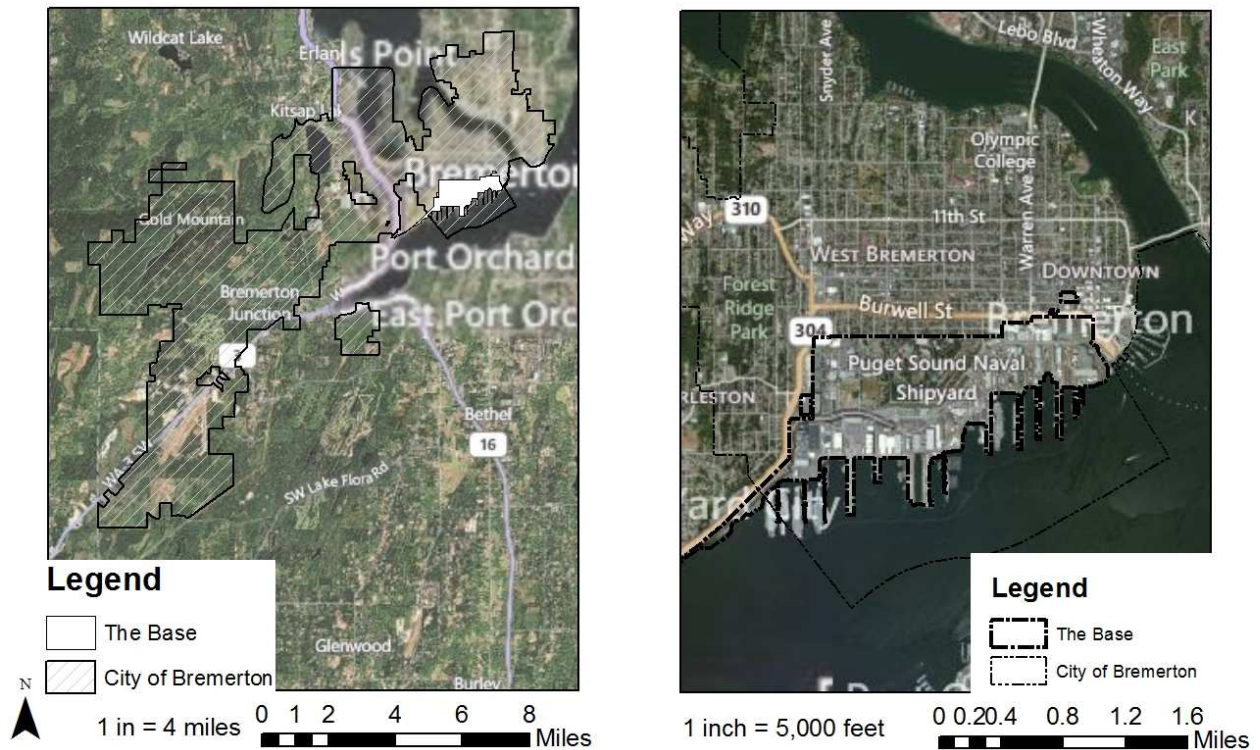


Figure 2: The base in relation to the City of Bremerton

changing their behaviors. Much like the well-used saying, “you can take a horse to water, but you cannot make it drink.” When I was looking for case studies and examples, a fellow officer from my initial inquiry about suggestions or case studies for automobile dependency replied “If I lived a block from my office, I'd still have two cars

and a pickup. The idea that we should wean Americans off the independence and utility that comes with owning a car seems misguided at best (Anonymous 2012).”

When examining employee commuting behavior; the European Conference of Ministers of Transportation, found a typical 60/20/20 split in company employees:

- 60% of employees are amenable to changing their commuting behavior,
- 20% are already seeking alternative forms of transportation (bicycle, carpool, transit, etc.), and
- 20% of employees are not willing to change their current transportation methodology (European Conference of Ministers of Transport 2001).

Based on these conceptual numbers and liberally applying them to commuters in America, 80% of commuters will not intentionally seek out any other form of transportation than the most convenient. If you do nothing, only one out of five employees will take any initiative to seek out other forms of transportation and if you do something, you may still face resistance. As Anthony Downs notes “most American commuters still seem to prefer driving alone through a sea of congestion to putting up with the policies necessary to decrease it (1992).”

### **Factors that cause someone to drive alone in the first place**

Why does a given person drive? Are there patterns to predict if someone is more or less likely to drive alone? A study in Portland confirmed several factors that resulted in a higher tendency to drive alone:

- Higher income households,
- White (Blacks and Hispanics were more likely to choose alternatives),
- Professional and sales occupations,
- The commuter who either resides or works farther away from the Central Business District (CBD),
- The number of vehicles available per resident worker,
- Higher accessibility to a freeway from place of residence (Jun 2008).

## Complex Problem

Part of what helps put one's arms around the starting place for reducing automobile dependency is to look at all the factors from an objective and logical point of view and how these factors also influence other factors. Before looking into the case studies, interviews, and the survey results, it is valuable to grasp the reality of the complex problem regarding automobile dependency. As a team from the United Kingdom put it, "travel behavior is a result of a complex and dynamic process involving a sequence of adaptations overtime (Sunitiyoso, Avineri and Chatterjee 2010)." The primary phenomenon that I'm trying to understand and recommend influencing is how the base commander can tweak the many "gauges" under his control to address the complex issue of the base's automobile dependency. The overall goal is to reduce the requirement for employees to have to own and use a car to carry out their duties.

I have mapped out various factors that logically influence automobile drivers, some of course could have very limited impacts, no impacts, or even negative impacts. To describe this complex problem, I have tried to avoid exacting reports or guarentees of impact. For a base commander to make a concerted effort to address automobile dependency, he or she is addressing a very complex issue.

Many of the complex issues that relate to why people drive alone to work are out of the commander's hands, such as fuel prices, weather, off base zoning, etc., so before looking specifically at what the base leadership can control (or at least heavily influence), it is important to identify what they cannot influence. The three main areas of influence that are out of the command's jurisdiction are (a) the larger national policies provided to the base via the Department of the Navy, (b) the local governmental authority structure, and (c) other outside influences.

### ***United States Navy***

The Department of the Navy receives guidance from higher authorities, the President, and other federal agencies. The decisions of where to build bases, close bases, build facilities, and demolish facilities is often influenced at the local level, but historically these decisions rest closer to the Pentagon. If the question of how to reduce automobile dependency were aimed at the Department of the Navy, some gauges that could be adjusted could include establishing/increasing/decreasing:

#### **Number of employees**

The national defense, politics, and other factors such as threats dictate how big of a budget will be needed to defend America. This budget then is cut into various pieces to pay for the many tools needed to defend America. Tools combine weapons, vehicles, training, equipment, personnel, facilities, real estate, etc. These tools then are assigned a geographic location. This geographic location then must be able to host the necessary tools to carry out its share of the National Defense. Hosting includes a number of employees that increases and decreases based on a whole host of factors. The bottom line is, the local commander doesn't dictate how many people to host at the base, but the less people on the base needed to carry out the mission, the less people will need to commute alone to base.

#### **Housing Allowance**

Housing allowance for active duty service-members and their families is based on rank, dependents, and location (e.g., housing allowance is increased in areas that are expensive to live). If service-members can find a beautiful home far from base for the same amount of money that it costs to live in a run-down city apartment, they will probably chose to live far from base. One idea is to increase housing allowance numbers immediately around the base and then purposely decrease it beyond in decreasing numbers to encourage developers to build multi-family housing closer to the base (i.e., jobs-housing balance) and to encourage families to move closer to base as well. This may reduce car dependency.

## The TIP program

There is currently a program called Transportation Incentive Program (TIP) that was a result of then President Clinton's Executive Order to reduce the number of people driving to bases (Clinton 2000). Federal employees can join the program and are funded for transit related commute expenses up to \$125/month. If this amount were to decrease, more people may be more likely to drive.

## New Urbanism Mandate

Often due to fiscal years, tight budgets, funding silos, and other beauricratic hoops, it would be difficult or even impossible for a local base planner to implement New Urbanist principles such as higher density and mixed use. But the larger Department of the Navy could dictate that all bases need to follow New Urbanist principles and more importantly, lift any beauricratic hurdles out of the way. The increase of these principles may reduce the need for automobile dependence.

Probably not any one of these alone (or even together) would "solve" the automobile dependency issue, but a gradual, intentional increase to the three positive recommendations could be tracked with a quantitative methodology to provide feedback on the degrees of influence and return on investment. The negative option of reducing the number of employees is not desired, but is stated to draw the realization that if a huge mission increases (thus more people), traffic will likely increase as well.

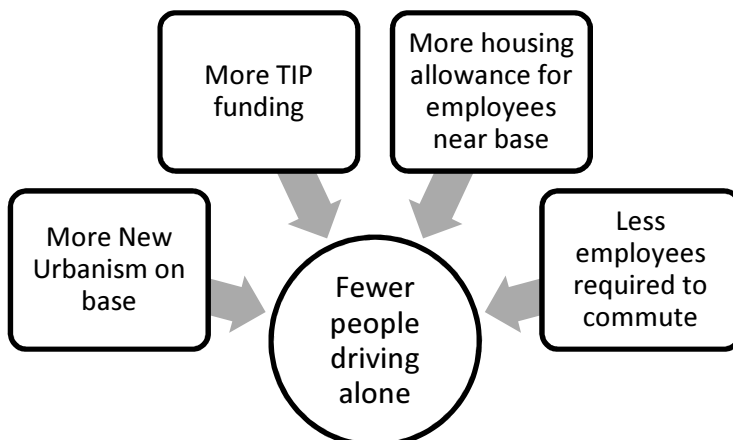


Figure 3: Department of the Navy Actions

### **Local Government Control**

The city planners, mayor, transit authority, ferries, school districts, police departments, State and Federally controlled agencies and streets all play a role in reducing automobile dependency on the base, even though what they control is outside the base and beyond the jurisdiction of the commanding officer. I do not think a proactive commanding officer and base leadership would have zero influence in many of these areas, in fact they could be the driving force to recommend change, but they are listed here because they are out of the base leadership's direct influence to establish/increase/decrease:

### **Transit options**

If a community designed its transportation network like the body's and there was a constant flow, for free that could get you virtually anywhere in the body within 7 minutes – a base located in or near that community would no longer need cars and would be nearly automobile independent. If a community has very limited transportation options – and those at irregular times, the employees at the base will be more and more dependent upon their own automobiles for commuting and all other trips. If a community has made significant investments in transportation and has several, timely options for nearly everyone within 20 miles of a given base, this investment may reduce the base's dependence on the automobile.

### **Toll prices**

Usually used to pay for bridges, expressways, and other expensive infrastructure, tolls can also be used as a tool to fight congestion on primary roads. If a primary road leads to a base, a toll or an increase in a toll on that road may lead to a reduction in the number of automobiles on the base.

### **Bicycle infrastructure**

The more people who ride a bike instead of driving, reduces the number of people driving to base. No matter how much the base improves its bicycle network on the base, if the paths and roads getting to the base are inhibitive to bicyclists, employees of the base will have to drive to get to the on base bicycle network. The more bike infrastructure a city builds, the more likely it will see a decrease in auto use.

## **Tax base**

The city could increase the property taxes to the highest and best use tax level.

Example: suppose a land owner pays \$4,000/year in taxes and uses her property for residential purposes even though it has been upgraded to mixed use. Mixed use tax, for that area, is, say \$12,000/year. If the city up-zones an area, but does not increase the taxes for the land owner, the land owner has little incentive to build to the highest and best use for that parcel. If the city taxed all landowners to the approved highest and best use of the given land, this may:

- Incentivize the landowner to upgrade their facilities to meet the highest and best use,
- Cause them to sell to someone who would upgrade,
- Provide an added tax base that could go directly to improving the local school district.

This may, if the comprehensive plan increases density, increase the density near the base or at least in transit corridors or employment districts, thus reducing automobile dependence.

## **Zoning enforcement**

If a residential land owner uses their land for commercial purposes (e.g., parking lot) the city should enforce the zoning through fines or other mechanism, or change the zoning to allow it and then increase the tax base (see above). By reducing the number of illegal parking arrangements, less people would likely drive to base.

## **Commercial Off Base Parking**

If the city were to build new parking garages, more people would likely drive. If the city restricted parking, charged for parking, and took a concerted effort to control parking, less people would likely drive to work.

## **Road infrastructure**

Huge, convenient roads to base may encourage driving. By making roads more transit, bicycle and pedestrian friendly, employees at the base may consider other options beside driving.

### **School District**

If funding<sup>3</sup> is increased to the local school, then the academic reputation of the school should increase. If the reputation of the school increases, then people moving into the area are more likely to live close to base (i.e., instead of employees ensuring their children have a great school and not worrying about their commute). If they live closer to base, they may reconsider driving.

### **Crime levels**

Another detractor from living close to the base may be crime levels – if crime levels diminish, maybe others would want to live closer to base. If crime increases – people who need to commute through a high crime area will lock their car doors and drive to avoid confrontation and possible muggings, injuries, or worse. If crime decreases<sup>4</sup>, employees may be more likely to *want* to be in the areas right outside of the base and thus be more open to other modes of commuting.

### **Current Political Direction**

I thought that the mayor of Bremerton would be interested in increasing the general reputation of Bremerton which in turn could increase jobs, tax revenue, decrease crime, etc. It turns out, that during the budget crunch, her focus turned away from her predecessor's goals of rebuilding the city to running a city in lean times. "As the City of Bremerton moves forward, our focus will continue to be on effectiveness, efficiency, and accountability (Lent 2010)."

I thought the Commanding Officer of the base would be interested in maintaining an efficient operating environment which includes safety, mission accomplishment and overall healthy camaraderie of the base personnel. This was not far off from the base's

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<sup>3</sup> This funding can come from the increased parking fee revenue, tolls, and the increased tax base for up-zoning.

<sup>4</sup> By mixing uses, increasing density, and asking for community volunteers to provide proactive crime watch, a community can avoid blanketly increasing the police force (though this is probably the most directly influential method to reduce crime).

mission: “Naval Base Kitsap serves as the host command for the Navy’s fleet throughout the West Puget Sound and provides base operating services, including support for surface ships and submarines homeported at Bremerton and Bangor (Naval Base Kitsap n.d.).”

According to Allison Daniels, a City of Bremerton planner, Bremerton enjoys a small town feel with a very democratic process for planning:

“In cities this size, citizens can express their interest, then bump into my director at a café. Plus, there’s a good working relationship among department heads, housing authority, public transportation, and others (Lane 2011).”

### **Increasing density**

Much of the area around Bremerton has seen better days and so other more attractive areas (e.g., Silverdale, Poulsbo, Bainbridge Island) have drawn larger real estate windfalls and commercialization. As of 1997, however, the city has again refocused on increasing the density and walkability of Bremerton, specifically the areas just north and east of the base. The City of Bremerton is currently working on the Shoreline Master Plan and Bay Vista areas, with intentions to make these areas within walking and biking distance of everyday shopping needs (Lane 2011). This is a sign of good things to come and increases the potential for growth and reduced automobile dependency, though we’ll have to wait for another housing boom before seeing the true fruits of this potential.

### **Urban Design Strategy in the Comprehensive Plan**

The City of Bremerton’s comprehensive plan identifies underlying goals that address decreasing automobile dependency. “Strategically locate amenities such as parks, sidewalks, community centers, and gathering places to support residential areas. Provide for social interaction through street design elements; Encourage residential designs with an orientation towards social interaction, as opposed to the automobile (City of Bremerton Community Development 2004).”

Figure 4 shows a complexity diagram of some of the local government controlled incentives to reduce automobile dependency on base. Again, there doesn’t seem to be

a silver bullet solution that can be implemented to help out the base, but in fact all of these, with a gradual tightening and releasing will lead to some better overall community benefits, one of which is reduced automobile dependency for a major employer.

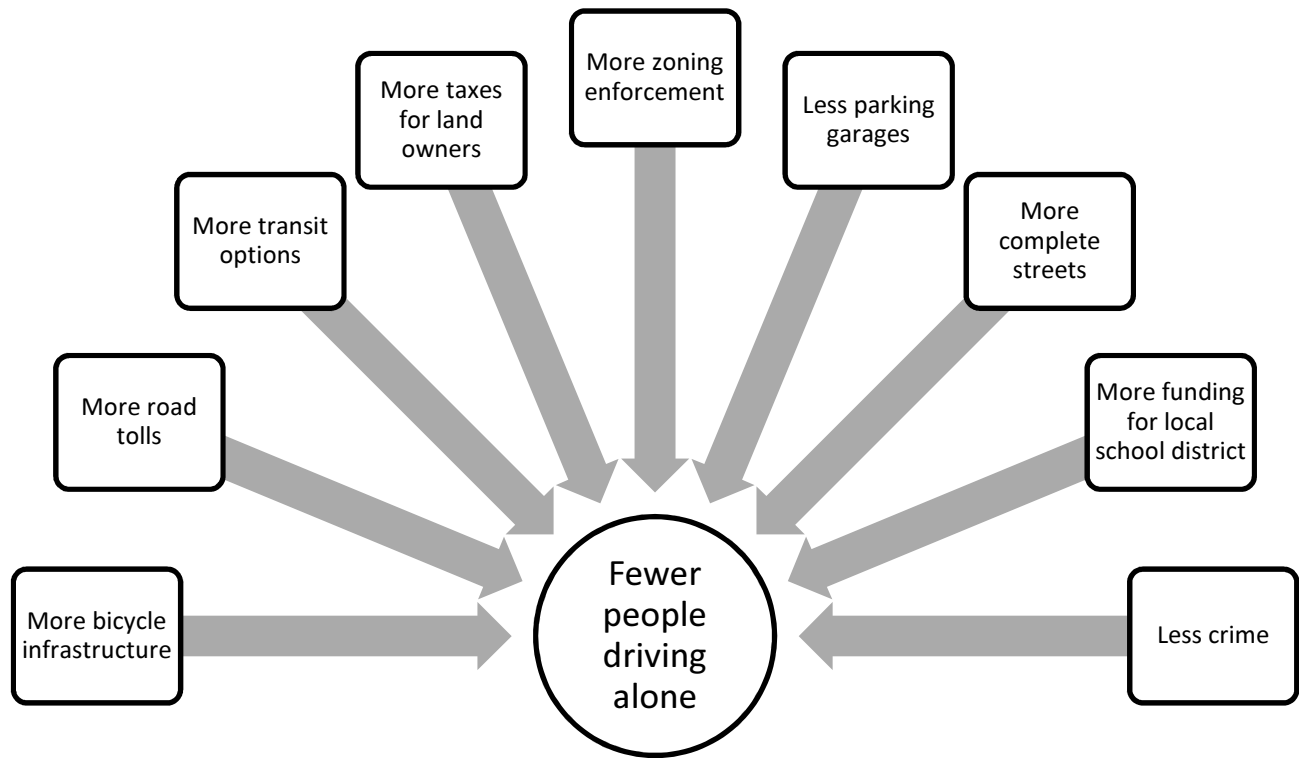


Figure 4: Local Government Actions

### ***Outside Influences***

Beyond the Navy and the local government, there are still is an unending list of outside influences that have to be dealt with instead of controlled. I have selected seven of these factors that seemed most appropriate as examples before we look to what the commanding officer has some control over. Outside influencers are responsible for establishing/increasing/decreasing:

#### **Car costs**

If the price of owning and operating a car is very affordable, more people will drive. If the price of owning and operating a car is very expensive, less people will drive. The price of gas is controlled by world oil prices and local taxing authorities, there is little the base can do, other than open up its own gas station with even lower prices – encouraging more people to drive.

The average US vehicle owner spends a total of \$8,500 per year on surface transportation costs (Roseland, et al. 2005). Within a 5 minute drive of Bremerton, the median income is \$42,318, meaning that about 20% of the areas' income is spent on surface transportation costs alone (ESRI Business Analyst Online 2011). Outside of loan payments and insurance costs, nearly \$30 million was spent near Bremerton in 2010 on are aftermarket expenditures (e.g., fuel, oil changes, repairs, etc.), Table 1 shows the average person within a 5 minutes' drive of Bremerton spent \$2,643.02 on automotive related products and services in 2010. Car costs, if increasing, should lead fewer people to drive.

<b>Automotive Aftermarket Expenditures for 2010 within a 5 minute drive of Bremerton, WA</b>		
<b>Products</b>	<b>Average expenditure per person</b>	<b>Total spent within 5 minute drive</b>
Vehicle Coolant/Brake/Transmission Fluids	\$ 3.59	\$ 40,547
Gasoline	\$ 2,015.17	\$ 22,761,307
Motor Oil	\$ 8.50	\$ 96,057
Vehicle Parts/Equipment and Accessories	\$ 39.56	\$ 446,845
Tire Purchase/Replacement	\$ 97.30	\$ 1,099,046
Vehicle Audio/Video Equipment and Installation	\$ 5.06	\$ 57,173
Vehicle Cleaning Products and Services	\$ 5.56	\$ 62,778
<b>Services</b>		
Auto Repair Service Policy	\$ 11.45	\$ 129,314
Membership Fees for Automobile Service Clubs	\$ 14.43	\$ 163,029
Global Positioning Services	\$ 1.64	\$ 18,574
Vehicle Air Conditioning Repair	\$ 12.52	\$ 141,466
Vehicle Body Work and Painting	\$ 26.40	\$ 298,211
Vehicle Brake Work	\$ 55.39	\$ 625,594
Vehicle Clutch/Transmission Repair	\$ 31.16	\$ 351,964
Vehicle Cooling System Repair	\$ 20.96	\$ 236,750
Vehicle Drive Shaft and Rear-end Repair	\$ 6.07	\$ 68,595
Vehicle Electrical System Repair	\$ 25.33	\$ 286,081
Vehicle Exhaust System Repair	\$ 9.76	\$ 110,205
Vehicle Front End Alignment/Wheel Balance & Rotation	\$ 12.83	\$ 144,963
Lube/Oil Change and Oil Filters	\$ 63.81	\$ 720,682
Vehicle Motor Repair/Replacement	\$ 64.01	\$ 722,989
Vehicle Motor Tune-up	\$ 42.02	\$ 474,572
Vehicle Shock Absorber Replacement	\$ 4.87	\$ 55,051
Vehicle Steering/Front End Repair	\$ 20.00	\$ 225,918
Tire Repair and Other Repair Work	\$ 45.63	\$ 515,426
<b>TOTAL</b>	<b>\$ 2,643.02</b>	<b>\$ 29,853,137</b>

**Table 1: Bremerton Automotive Aftermarket Expenditures Source: (ESRI Business Analyst Online 2011)**

### **Housing market**

The cost of home ownership and rental prices in an area can also dictate where employees chose to live and whether or not they are making themselves automobile dependent. If the other factors (i.e., good school district, low crime, view, etc.) are accounted for, lower housing prices away from the base may create automobile dependency much like the suburban sprawl phenomenon. Washington DC is probably

the best example of this as housing prices (in low crime areas) are very expensive, employees who work downtown, then are forced to either live in a high crime area or deal with automobile dependence. Even transit oriented development can drive housing prices – if an employee is looking for a home near a bus stop or train station, they may not be able to afford something within walking distance.

### **Retail market**

Even if someone lives right next to their place of employment, if there is no retail development nearby, they also will likely have to be automobile dependent to purchase groceries, clothing, and other retail goods. For a retail market to be attractive, there needs to be a large density of people nearby or at least an agglomeration of similar retailers. Outside the base, there is a plethora of automobile related retailers – oil change, car wash, car parts, mechanics, etc. – these retailers are following a proven market – many people drive to base – and others thus may also be encouraged to drive to base.

### **Threats to National Security**

Things like upgrading on base security measures are driven by external forces – causing undue pain for drivers, thus, if continued, would certainly reduce the number of drivers. Right after the attacks of September 11, 2001, nearly all military bases moved the base security level up to force protection delta (i.e., as opposed to the routine alpha level) which translated to every single car inspected for bombs, every person out of their car, and about a 5-7 hour wait to get access to the base. This of course is expensive and painful to maintain for anything longer than 2-3 days, but if it did continue, less people would probably drive. Outside threats can also increase or decrease the number of employees reporting to a base – this may have an impact to the number of cars driving to the base.

### **Weather/climate**

When people have nice weather, they may be more likely to try walking, jogging, or biking to base instead of driving. The nicer the weather, the less people need to drive. An interesting study in New Zealand compared 348 drivers and walkers who lived within a kilometer of a mass transit mode in two different cities (Auckland and

Wellington) and asked 62 questions relating to behavior about whether to drive or walk to the local mass transit facility. The strongest difference factor between the walkers and drivers was weather. The question on the survey was: “If there’s a chance of rain I will take the car to the park and ride (Walton and Sunseri 2010).” The drivers, on a scale of 1-5, selected an average of 3.8 (SD 1.297), while the walkers averaged 2.59 (SD 1.212) for a difference of 1.21 (Walton and Sunseri 2010). People go to their most comfortable mode of transportation in times of poor weather – something the base commander cannot do anything about.

### **Time**

Time saved while driving was found to be a very precious commodity that walking, cycling, and transit still cannot compete with. “The value an individual places on time was found to be highly significant in understanding how he or she makes trade-offs between various travel modes. For a mode to be viable, in terms of time, it is important that it compete favorably with the time required to accomplish a specific trip objective using a personal automobile (Lawrence Frank and Company, Inc.; Bradley, Mark; Keith Lawton Associates 2005).” As long as we live in a capitalistic society, time will be associated with labor and dollars and will be a difficult hurdle to reduce the use of a convenience like the car that saves time. Asking Americans to reduce using their time saving cars would be like asking Americans to get rid of their credit cards, prepackaged meals, airplanes, and other time saving technologies.<sup>5</sup> If our culture had less concern for time, we may see less of a need for driving.

### **Personal Attachment**

If you have had a positive experience or a great memory in a car, you somehow, have an attachment or bond to that car. I also think it is a way to own some real estate in an expensive world. Much like a locker at a school becomes a student’s only form of “owned” real estate and they can maintain that space, a car serves as a private area parked above a government controlled right of way that allows the owner to quietly get away from the crowd and have some privacy. If a person is to get rid of their car, they

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<sup>5</sup> Maybe that’s not a bad thing.

lose that place in the city where they can get away – there is a strong personal attachment in this phenomenon as well. This personal attachment phenomenon can be summed up in a recent country music song by Rodney Atkins, titled *Take a Back Road*. His words “get lost and get right with my soul” resonate with me and probably many Americans as we’ve had so many personally wonderful experiences in cars that we’ve grown quite attached to them (Atkins 2011). If personal attachments to cars decreases, we may see a decrease in car use.

These seven elements – clearly out of the control of the base commander - influence automobile dependency as much as or even more so than the base commander (or any similar corporate leadership board) can effect. When these seven elements are mapped out, it looks something like this:

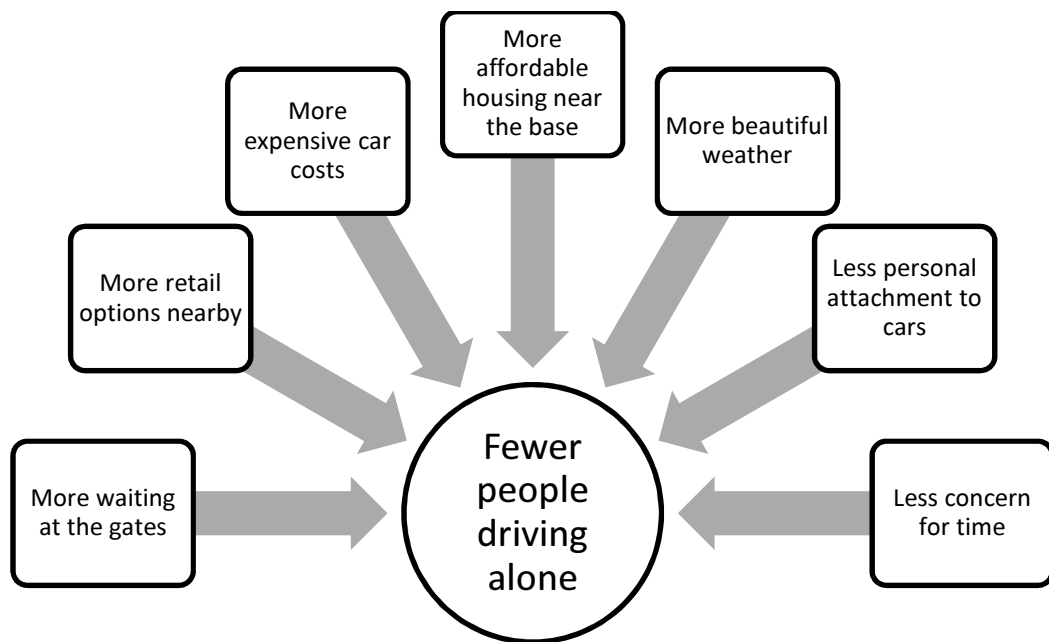


Figure 5: Outside Influences

## Summary

If the status quo is maintained and the base leadership takes no specific actions to reduce automobile dependency, then employees will be only influenced by a complex series of gauges from the Department of the Navy, local government, and other outside

influences. Most employees then, will not make any effort or changes to their current routines and habits. The base leadership stands in the best place to incrementally bring in automobile dependency reduction techniques – they will be immediately felt and can be tailored to the current commander's over-arching mission and vision for the base.

## **Chapter Two: Case Studies of Campus Style Solutions**

### **Military Installations**

Though the intention of this document is to focus on the base in Bremerton, the information and examples may be useful on other bases with different characteristics. Some bases may be near a large city that already has a substantial urban density and pronounced transit programs which tend to support fighting automobile dependency. Some bases are located on islands which in and of themselves create unique situations to limit automobile dependency – or have to address these issues. Another unique application is for the growing base in rural America that has the opportunity to delve into urban sprawl or lean toward an urban design with greater density. As we are looking at Bremerton, I think it is of some value, both for the current discussion and for future research, to examine other bases, briefly, with the mindset that not all incentives or initiatives will work in every situation, but that other areas that have bases benefit, ironically, from their limitations.

#### ***Guam***

The Naval Facilities Engineer Command (NAVFAC) is looking at options of permanently relocating over 8,000 Marines and their dependents from Okinawa, Japan to the island of Guam, an island in the Pacific Ocean. The total number is over 30,000 if you include all transient personnel and the Navy and the Army's increased missions (Joint Guam Program Office 2010).

#### **Urban Design - Island Benefit**

I include this example from Guam while looking at Bremerton because Guam benefits from what I'm calling the "Island Benefit." With forced boundaries, the planners for the new base in Guam had to be considerate both of facility expansion and limiting automobile dependency, which led to following New Urbanist ideals like density and sustainability. "Facilities were sited throughout the proposed installation based on functional efficiency, capacity, ... sustainability, and many other factors, to optimize functionality and minimize environmental impacts (Joint Guam Program Office 2010)."

### **Non-monetary incentive - Required Carpooling**

Legally imposing transportation of employees and/or carpooling is another method of reducing automobile dependency. Though this was not enacted for reducing automobile dependency, a law like this helps. The Government of Guam (GovGuam) undoubtedly had other reasons in mind, such as (a) to help preserve roadways, (b) to fight congestion, or (c) to account for the difficulty in acquiring a new car on the island. “There would be impacts to roadways and traffic from workforce housing [in support of the Marine Corps relocation], although these impacts would be minimized by GovGuam’s requirements for employers to provide transportation to and from worksites ... (Joint Guam Program Office 2010).”

### **Urban Design - Defense Access Road**

I’ve included this funding program to shed light on the potential of diverting these funds to reducing automobile dependency instead of encouraging it. The DoD and GovGuam need improved roads and bridges to carry out their daily tasks, but making roads and bridges better only encourages more driving. “The Defense Access Road Program provides the means for DoD to pay a fair share for public highway improvements required as a result of a sudden or unusual defense-generated traffic impact or unique defense-related public highway requirement (Joint Guam Program Office 2010).” What if this funding could be used to make complete streets along with strengthening the roads?

### **Non-monetary incentive - Restricted Ownership (Guam Bomb)**

From my own personal experience on Guam, I remember hearing tales of Guam bombs – which were \$400 cars that had been traded between service-members serving a six month deployment. Since transient service members were not authorized to ship a car to or from Guam, the easiest thing to do was to purchase a cheap car and then sell it to the oncoming transient service-member. My commanding officer at the time did not allow anyone to purchase a Guam bomb. One solution to the automobile phenomenon is to not allow anyone to purchase a vehicle. For a six month deployment without dependents is one thing, but to not allow service members located at a

permanent station situation where spouses, children, and other dependents are involved would certainly seem unsupportable, detrimental, and unproductive.

### **Urban Design - Sustainability Study**

As part of the Environmental Impact Statement, NAVFAC hired AECOM<sup>6</sup> to conduct a rigorous sustainability study that included car use reduction and related goals: 30% reduction of fuel use in Navy/Marine Corps vehicles, 7.6% reduction of the total vehicle miles traveled, and set a target of 34% reduction in greenhouse gas emissions (Joint Guam Program Office 2010).

### **Conclusion**

Of the identified automobile dependency tools found on Guam: Island Benefit, Required Carpooling, Restricted Ownership, Defense Access Road, Sustainability Study (Figure 6), several have transferability to other bases. The Island Benefit is useful if commanders envision future bases as having an island compactness (i.e., density). Required carpooling also is unique to Guam, but could translate well in other locations, depending also on local authorities. Restricting vehicle ownership is un-American and would be a difficult path to trod, highly not recommended (though, tongue in cheek, probably the most effective tool at combating automobile dependency). The Defense Access Road is important to “do the right thing” but can lead to increased car use and is also not recommended. The most transferable, multi-tiered and highly recommended take away from Guam is to conduct a sustainability study. I don’t have access to the actual numbers, but I would imagine that this study, though robust and expensive, probably pays for itself several times over.

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<sup>6</sup>Major Design Firm, AECOM stands for Architecture, Engineer, Construction, Operation, and Maintenance.

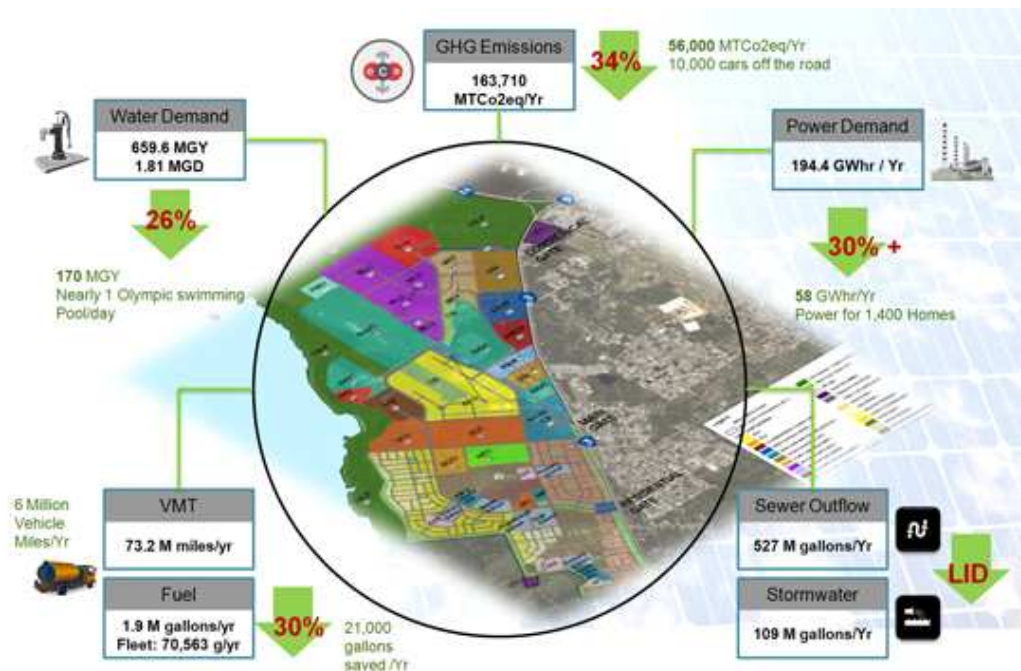


Figure 6: Sustainability Efforts in Support of the U.S. Marine Corps relocation to Guam. Source: (AECOM 2012)

### ***Joint Base Lewis-McChord***

I still remember the first time it “clicked” for me that automobile dependency was an issue worth at least discussing if not actually creating some actionable policies toward its reduction. I was sitting in a class in Gould Hall’s basement and the professor asked the class to come up with why traffic is so congested on I-5 outside of Joint Base Lewis-McChord (JBLM). Several students suggested answers, but no one could figure out what was causing the problem. Dr. Alon Bassok, a member of the Puget Sound Regional Council, then told us, “showers.” He went on to tell us that when looking into the congestion problems, many commands on JBLM required all their soldiers to report early in the morning for physical training and then shower and report to duty. Many of the soldiers would then leave base, go home and shower, then drive back to base and report to duty, causing increased congestion on I-5. During my interview with the Director of the Washington Transportation Center, Mark Hallenbeck also mentioned the shower issue, but also talked about other options such as bus stops on base with Pierce Transit that showed great potential, but would have to overcome some resistance and security issues (Hallenbeck 2011).

The leadership of JBLM knows there is a problem with traffic (beyond showers) and have identified five transportation strategies to implement:

- Improve Regional Mobility Through I-5 Improvements
- Improve Regional Mobility Through HOV and Transit Improvements
- Reduce Traffic Congestion Through Transportation Demand Management (TDM) Policies and Strategies
- Reduce Military-Related Impacts on I-5 Flow Through JBLM Gate and On-Post Transportation Improvements
- Complete the Cross-Base Highway (City of Lakewood 2012).

### **Seattle Children's Hospital**

A guest lecturer came from the Seattle Children's Hospital to discuss the hospital's transportation demand management techniques. Paulo Nunes-Ueno spoke about methods of reducing car dependence in some very innovative ways that could easily translate from a commercial campus to a federal base. In 1995, 73% of the hospital's day time employees drove to work, but thanks to the proactive efforts of the hospital leadership, the percentage is down to an incredible 38% (Seattle Children's 2007).

Some of the methods are listed below:

- Shuttle connections to transit hubs (including the downtown Seattle transit tunnel). Children's proposes to have 21 vehicles serving 4 new routes.
- Employee trip demand programs including increasing the incentive for using an alternative mode of travel, expanding the FlexPass (transit pass) program to include medical residents and fellows, providing an annual bonus to bike riders and walkers, increasing on-campus bike storage, continuing incentives for carpools and vanpools.
- Innovative bicycle programs including Flexbike (a program that allows a one-way trip on power assist bikes to partner locations at the University of Washington and perhaps U-Village),
- Purchasing bikes for employees who commute by that mode, and providing safety classes for bicycle riders.

- Parking management programs that include increasing the employee's cost to park and introducing a pay-per-use parking charge (to encourage alternative modes of travel some days per week),
- Changing the assignment to off-site lots based on home address to reduce travel through the 5 Corners intersection.
- Children's also proposes to make off-site and near site improvements, and will work with the community to identify the highest priority needs. Children's proposes to:
  - Allocate \$2 million to make off-site pedestrian and bicycle improvements that would make it easier to walk or bike to the campus.
  - Provide \$500,000 in seed money to fund a study of off-site transportation improvements that are aimed at increasing the person-carrying capacity of the roadway system. This study would start with recommendations that were made as part of the University Area Transportation Study (UATS) and find those that would be most beneficial to serving person trips to and from Children's.
  - Contribute a fair-share cost to improvements identified in the above study (Department of Neighborhoods 2008).

The one method that resonated with me was the tracking of mode choice. Each employee of Seattle Children's has a commute calendar that records how they commuted in on a given day (Figure 7). When an employee must drive, they forfeit \$5 per day when they scan their identification card at the parking garage (Nunes-Ueno 2011).

# Commute Calendar



Figure 7: Commute Calendar. Source: Seattle Children's (Nunes-Ueno 2011).

An innovative local hospital that has to carry out its mission 24/7 certainly has some similarities to a federal base and many of these could possibly be useful on a given base.

## Universities

Another source for innovative thinking when it comes to automobile dependency reduction techniques is the university campus. The metaphor between a college campus and a military base is fairly easy to grasp: both have large areas of land, both have a large cadre of permanent staff, both have a high number of visitors and contractors that come to the campus daily. The most useful comparison, however, is comparing the students of a university – not permanent, but temporarily living on or near the campus during their education – to active duty military members who like students are temporarily assigned duty stations. Though these assignments are often

referred to as permanent duty stations, most service members will rotate to various bases throughout their time in service.

I have observed and listened to many of the ways the University of Washington reduced its automobile dependence over the years, but was very excited to find an article that discussed how three other universities tackled the same issue. Holly Parker, the Yale University director of sustainable transportation, teamed up with David Fields, chair of the American Planning Association’s Transportation Planning Division, to write an article about how Yale, Harvard, and Stanford Universities reduced their dependency on the automobile.

The Sustainable Endowments Institute puts together an annual green report card for universities in various categories, one of which is transportation that has helped shed some light on their approaches to reduce automobile dependency (2011). All four universities have scored an “A” in transportation the last two years but only the University of Washington has held a perfect straight A grade in transportation from 2008-2011 according to a comparison from the green report card (Sustainable Endowments Institute 2011). Though there are more specific approaches that each university is taking depending in large part on location, size, and funding, I did find six categories (Table 2) that all or at least three of the four were participating in to reduce automobile dependency on their campuses.

University	Bike share	Car share	Free shuttle	Incentives for carpooling	Non-SOV Urban Design	Subsidized transit
Harvard University	X	X	X	X	X	X
Stanford University	X	X	X	X	X	X
University of Washington		X	X	X	X	X
Yale University	X	X	X	X	X	

**Table 2: University Comparison Sources: (Sustainable Endowments Institute 2011) and (Parker and Fields 2012)**

***University of Washington***

The University of Washington offers a variety of non-single occupancy vehicle (non-SOV) alternatives and programs such as the U-PASS, discounts on carpool permits, car-sharing, and even a nonprofit bike repair shop (Sustainable Endowments Institute 2011). In an interview with Mark Hallenbeck, it became clear to me that the University

of Washington has been a front runner in reducing automobile dependency for at least twenty years. Based primarily on the need to increase building square footage (density) and not traffic, the UW and the city of Seattle came to an agreement to allow the University to expand as long as traffic did not increase – leading the University to purposefully regulate car use (Hallenbeck 2011). As of 2011, all students are required to purchase the subsidized public transit pass (i.e., U-PASS), which started in 1991 in conjunction with King County Metro (King County Executive Office 2001). Currently 38% of employees to the University of Washington drive alone (Figure 8), while only 12% of students drive alone (Sustainable Endowments Institute 2011). Other than the \$76 full fare coverage for the U-PASS for nearly all transit in the Puget Sound Region, some of the other methods used by the UDUB to reduce automobile use are listed below:

#### *Urban Design*

- Though the central and eastern edges of the campus are open, the western and southern edges of the campus are increasingly gaining in density.
- Complete streets can be seen more and more throughout the campus and have included traffic calming, bike lanes, and clearly more pedestrian friendly infrastructure such as wider sidewalks and covered bus stops.

#### *Parking fees*

Free parking is very hard to find on or near the UW campus, purposely as a disincentive to driving alone:

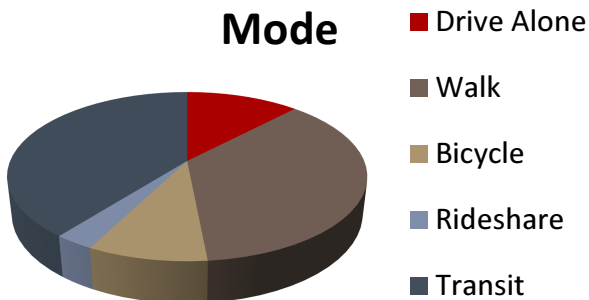
- Car parking on campus is \$15 for all day and prorated for parking under 4 hours,
- Cheap daily rate in the stadium parking \$6,
- Evening parking (after 5pm) is a flat rate of \$5,
- Street parking is \$1.50/hour, limited to 2 hours, and charged from 8am-8pm Monday through Saturday,
- Car parking is free on Sundays and holidays,

- Quarterly parking is available for \$300-400 and the vehicle is assigned a specific parking lot.

*Other*

- The link light rail stop is under construction on the east side of campus (near the stadium) which will connect it to north to Northgate, South to downtown and the airport, and East to Bellevue and Redmond.
- Temporary car use for the thousands of students, faculty, and staff who don't drive to campus, but need a vehicle during the course of the day can use:
  - one of the university's fleet of over 600 vehicles (10% electric or hybrid) for official business,
  - one of 59 UCARs (31 are hybrids) for education, research, outreach, and business, or
  - a zipcar for personal use on an hourly basis (Sustainable Endowments Institute 2011).
- Shuttles are also provided for unique routes and needs.

**University of Washington  
2011 Student Commute**



**University of Washington  
2011 Employee Commute**

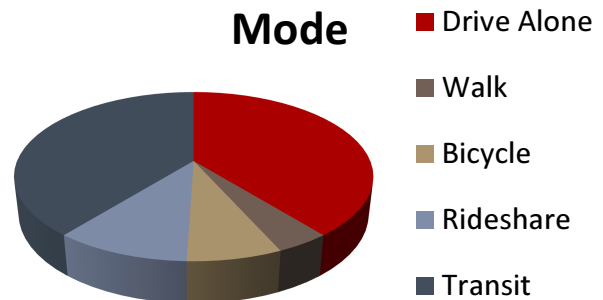


Figure 8: University of Washington 2011 Student and Employee Commute Mode Comparison. Source: (Sustainable Endowments Institute 2011)

***Harvard University***

Harvard offers incentives for carpooling, as well as a free on-campus shuttle service, and a free bike-share and repair program is available for employees (Sustainable Endowments Institute 2011). The primary methods that Harvard used to reduce

automobile mimicked some of the University of Washington’s benefits of being co-located in a metropolis: subsidized transit passes, zipcar access (25 cars & 9,000 members), and increased bicycle and pedestrian access (Parker and Fields 2012). The Boston area already benefits from a pre-automotive urban design, but Harvard made a concerted effort over the past 8 years to reduce the automobile dependency of the campus from 27% of commuters driving alone to only 16% driving alone in 2011 (Parker and Fields 2012).

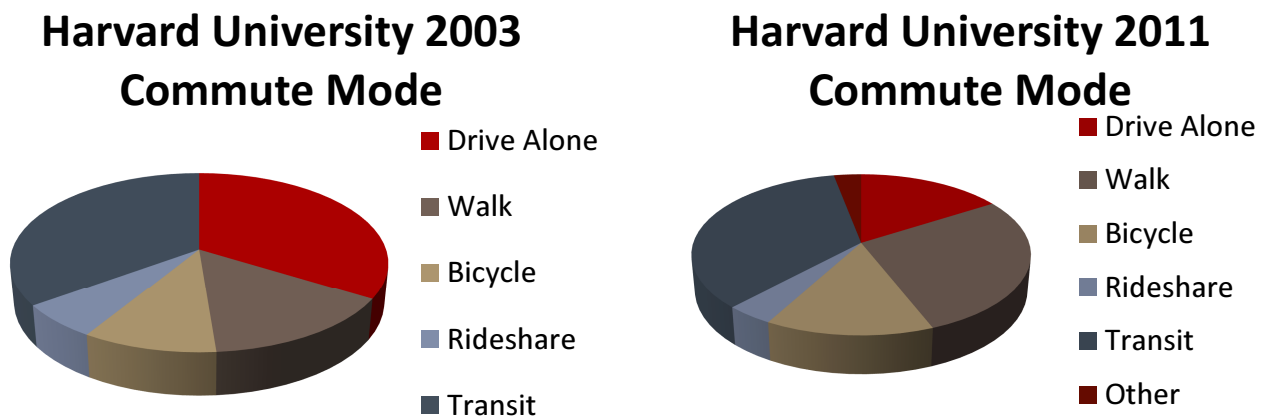


Figure 9: Harvard University 2003-2011 Commute Mode Comparison. Source: Planning (Parker and Fields 2012)

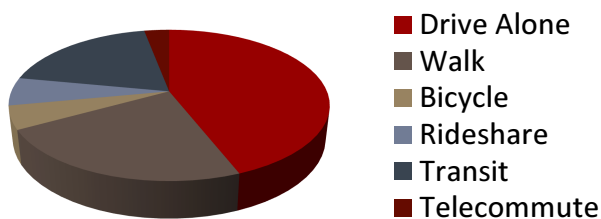
### ***Yale University***

Yale offers a free shuttle service on and around campus, a departmental bike-sharing service, carpoolers can purchase discounted parking permits, and 47 percent of employees commute to campus via environmentally preferable means (Sustainable Endowments Institute 2011). Yale put together a robust strategy to reduce automobile dependency and over the course of only four years, was able to see a rise in bicycle use from 5% in 2007 to 8% in 2011, while the percentage of single drivers fell from 44% to 37% (Parker and Fields 2012). This strategy included a variety of concerted actions:

- avoiding building parking garages,
- allow zipcars (currently 35 & 3,200 members),
- encouraging employees to live near the campus (i.e., jobs-housing balance),
- free campus shuttle,

- transportation master plan,
- coordinating with the local government:
  - safe sidewalk and crosswalk infrastructure and maintenance
  - improve transit options and connectivity
  - establish working groups with all future plans that would impact pedestrian, bicycle, and transit commuters (Parker and Fields 2012).

### Yale University 2007 Commute Mode



### Yale University 2011 Commute Mode

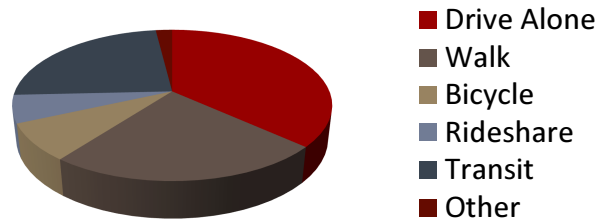


Figure 10: Yale University 2007-2011 Commute Mode Comparison. Source: Planning (Parker and Fields 2012)

### ***Stanford University***

Stanford University provides monetary incentives to carpoolers, free access to public transit, shuttles to local destinations, a bike-sharing program, and partners with a car-sharing program (Sustainable Endowments Institute 2011). In 2002, at least 72% of commuters (students, faculty, and employees) to Stanford were driving alone – even with several incentives in place to not drive alone:

- Clean Air Cash – paying commuters not to drive,
- free shuttle service,
- paid parking,
- free parking for carpool/vanpools,
- emergency ride home program,
- no cars for freshman policy, and

- extensive bicycle infrastructure (Parker and Fields 2012).

With a promise, much like the University of Washington, to not increase commute trips, Stanford had to find other ways for people to commute to campus without using their cars (Parker and Fields 2012). So over the course of nine years, Stanford implemented even more automobile dependency reduction techniques:

- increased marketing for the Commute Club,
- invested in transit service,
- employed a full time bicycle program coordinator and increased the bicycle infrastructure, and
- raised parking prices depending on location (Parker and Fields 2012).

These four strategies, coupled with an existing robust system led to a reduction of commuting alone from 72% in 2002, to 46% in 2011 (Parker and Fields 2012).

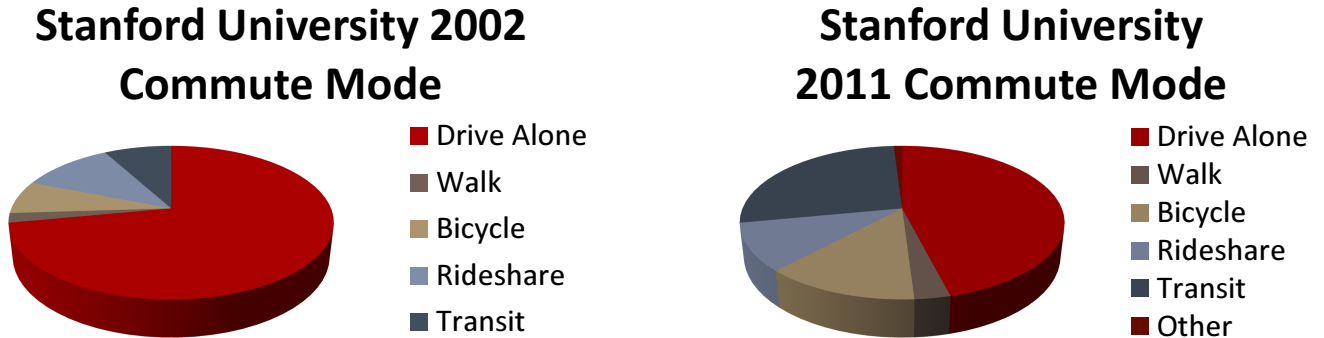


Figure 11: Stanford University 2002-2011 Commute Mode Comparison. Source: Planning (Parker and Fields 2012)

## **Chapter Three: Interviews**

I solicited input from my fellow U.S. Navy Civil Engineer Corps Officers, the base planner, Zipcar employees, Makers employees, and a City of Bremerton planner regarding this phenomenon. I used personal meetings, linkedin.com, email, and phone to solicit these results.

### **Planners**

One of the quotes from the on base planner was that “we don’t have a parking problem, we have a walking problem (Rossman 2011).”

The City of Bremerton planner described the base as its own city. She also stated that there is a constant parking problem – residents of Bremerton will lease out their driveway, lawn, or whatever other piece of real estate that can hold a car during the work day and let base employees pay them to park there all day. This overflow of base employees taking up the parking throughout the city on a given business day prevents retailers from having plentiful parking. Other than a handsome lunchtime profit, the businesses and tax base of Bremerton suffer because of the number of people who commute from outside Bremerton (Floyd 2012).

### **Zipcar**

I spoke to a zipcar marketing manager, Billy Thompson regarding the power and coordination with zipcars and discussed some of their issues and problems. Mr. Thompson provided several examples of the benefits of zipcars and how it can reduce the need for automobiles, especially if you live near one of the lots. The person using the vehicle is covered by a \$700 deductible insurance and all fuel costs are included in the hourly rental which is about \$10/hour (Thompson 2012). There are a few downsides to zipcars such as age limitations, the requirement to return to the same home, and base access, but overall the car sharing concept is widely used and growing.

I don’t want to endorse a specific corporate solution or promote free advertising; I’m looking at this from a conceptual point of view. The University of Washington has both the UCAR and zipcars and continues both programs today because there is a need

being met by having cars available for educational purposes and for personal purposes – without being dependent on each person having their own car.

### **Makers**

Makers is a Seattle firm that often does architecture and urban design services for the Navy. I talked to them about some of my ideas and I listened to them talk about a study to reduce the parking demand at the Balboa Naval Hospital in San Diego, CA and the pedestrian and bicycle master plan in Washington for the Navy on Whidbey Island. The hospital parking strategies are very applicable to the Bremerton study and vice versa. The biggest take away from our conversation, however, was the fact that the Commanding Officer at Whidbey Island enjoyed riding his bike and so was instrumental in finding the funding to design a pedestrian and bicycle plan for the base (Huizhingh 2012).

### **Civil Engineer Corps Officers**

One of the groups I belong to on a website called linkedin.com is a limited access group for Civil Engineer Corps (CEC) officers. Much like other Navy staff officers (e.g., Medical Corps, Dental Corps, JAG, Chaplains) the CEC specifically focuses on one portion of the entire Navy and Marine Corps mission. From piers to barracks, from demolition to underwater repairs, the CEC is responsible for the built environment. Who better to solicit ideas about reducing automobile dependency on a base than the very people who are responsible for the built environment? So using linkedin.com, I asked my fellow U.S. Navy Civil Engineer Corps Officers “What’s the best way to reduce automobile dependency for our Sailors and Marines?” I received a plethora of responses that I have included in Appendix A, but a sampling of the responses are below:

### **Monetary incentives**

*When given enough funds, a junior troop will likely opt for the personal freedom afforded by private auto ownership.*

*I did have a friend or two that bought a car they couldn't afford (between payment, Ins, fuel, & repairs), but they corrected their problems and found a solution.*

*... car issues & money problems...related to the expectation that they needed a new car or they didn't have the ability to fix their car.*

### **Non-monetary incentives**

*The up-side to owning a car on a limited budget was that I took full advantage of the Auto Hobby shops on base.*

*You may win some ground here with targeted convenience and incentive efforts.*

*Perhaps the problem isn't car ownership or how to limit it, but how to help young adults learn about personal responsibility (with car ownership as a major driver).*

### **Urban design approach**

*Purchasing the real estate and building outside some bases would serve to remove blighted neighborhoods.*

*...those living in barracks on base ...drive everywhere rather than walk (to the gym, the galley, the store, to work...).*

*Maybe, the military bases could adopt-a-bike loaner program like city bikes.*

*...a bike... helped get around and a [is] great form of exercise... The ship was full but always accommodated bringing a bike on board which really helped getting around in port calls.*

### **Transit related approach**

*If you want to reduce use of private automobiles, there have to be viable alternatives. For bases in low population density areas, there may not be any public transit off base or it may not serve all nearby residential areas.*

*Time is also valuable - waste too much time riding a bus and a private automobile starts looking more attractive. Public transit also tends to lack flexibility - service is generally reduced at night, on weekends, and holidays. Where on base transit exists, linking it to off-base systems is a potential security problem .*

*... my buddies and I got around a fair amount more (using the local base/community bus systems) than fellow sailors awaiting to carpool with the one car owner.*

*I learned how to read a bus schedule, connections, passes all before the internet from a New Yorker. Now, the information and destinations are so much easier to plan through the web transit sites and mapping sites.*

### **Jobs-housing balance**

*Decent, affordable housing may be in short supply near bases in urban areas, prompting longer-distance commutes.*

*The PPV [Public Private Venture] with homebuilders building housing miles from military bases has sealed the need for sailors and marines to purchase and utilize POVs [Personally Owned Vehicles]. There is no alternative in these cases. To remedy these situations - sell the remote PPV housing and utilize the money to purchase/build housing either on base or just outside the bases these sailors and marines serve.*

### **Case Studies**

*Bike Share - When I was on mobilization in the Middle East there was a rack of unlocked bikes that I would repair, use and share with fellow service-members to get around.*

*Car Share - When I was enlisted (late 80's) we felt restricted to the base until we could get a car. The bus systems (on and off base) were very limited, time consuming, and did not go to locations we wanted to go. I bought my 1st car*

*about 3 months out of boot camp and never had a shortage of friends looking for a ride. We'd share a car between 2-3 of us, because of deployments and days when we couldn't leave base. We worked it out. A program like ZIP car would have worked well for us, but they didn't exist then. Additionally, we were too young to rent a car (most rental companies required we be either 21 or 25 to rent.) Rental cars were also too expensive. There were busses and car pools, but these also placed constraints on our time.*

*Germany - I lived on a base 30 min from the base where I worked. I rode the base shuttle to work and back. On the weekends I used public transportation (buses/trains) to go downtown or around town. Worst case scenario rented a car for road trips. Using affordable public transportation that ran until 3am was a twofold benefit. No need for a car and no need to drive after drinking good German beer. Never bought a car or used beater to drive around for the time I was there. Got some good PT [physical training] walking to the bus stop or train station. Unfortunately in the US public transportation is not set up as good as it is in Germany or the rest of Europe and you may have to dodge bullets or a knife here and there which aren't as big a problem in Europe.*

*Austria - The only places I've seen public transportation work is in high population density areas. In other words, driving has to become more of a pain than taking public transportation... it works in Europe...because they have high population densities, so traffic is bad and finding a place to park is awful. I lived in Austria for two years and never had a car, just a bicycle and my shoes. They had very reliable transportation that you could set a watch to. We used to race people in cars and we often beat the cars, because there was no traffic for subways and street cars. I never saw any crime that made me concerned either. I've never experienced this type of environment in the U.S.*

## Chapter Four: Commanding Officer's Potential Initiatives

The sources for potential initiatives, to implement to reduce automobile dependency, come from a variety of backgrounds, some authors focused on reducing traffic congestion, some were from the sustainability movement, some focused on specific aspect of reducing driving, and most sources came to the realization that no single approach works to reduce automobile dependency. "According to the lit review, however, this [given incentive] will prove to be largely ineffective if not coupled with other implementations simultaneously (Downs, Still Stuck in Traffic: Coping with Peak-hour Traffic Congestion 2004)." This influential sentence, specifically "other implementations simultaneously" drew out other source's same realization. The experts at the European Conference of Ministers of Transport Round Table felt that the government "must provide an overall and consistent framework of incentives" to reduce automobile dependency "rather than seeking to introduce legislation immediately in order to make measures mandatory (European Conference of Ministers of Transport 2001)." Rarely did an author claim only one, low-hanging fruit solution (e.g., getting rid of free parking), most used a combined approach (Shoup 2005). If anything, the complexity of how to influence this automobile dependency phenomenon should show that because so many factors influence the decision to drive, it should not be a surprise that most of the literature does not claim to have one solution, but a combination of approaches seems to work best.

So if nearly everyone agrees that a multi-pronged approach is necessary, what is the best return on investments? What solutions work in all areas, unique areas, Bremerton areas? What strategies, incentives, and approaches are proven to work? What incentives are most effective at reducing automobile usage at the base?

A group of four unique professionals from the United Kingdom teamed up to review both the effectiveness of a collective list of incentives to reduce automobile dependency and also to critically identify research methodology strengths and weaknesses. The group began by looking at over 3,000 potential sources and then eventually reduced down to 77 primary car use reduction intervention evaluations, of which only 12 were methodologically strong (Graham-Rowe, et al. 2011). Some of the

techniques for reducing automobile dependency that were reviewed included: road pricing, road closures, bus priority lanes, rewarding mileage reductions, telecommuting, and many others (Graham-Rowe, et al. 2011). I looked at this great resource, not specifically at the quality of the research methodology, but at the effectiveness of the incentive or disincentive. Effectiveness as a definition also came to light (i.e., many of these methods were reducing miles, frequency, or trips). I was looking for reducing the need for car ownership and the reduction of driving alone while still allowing service-members and employees to be productive. Here are the several effective and mixed results (i.e, worked in some places, but not in others) methods found in the research, per the earlier comment, several of these need to be researched again due to inadequate research methodologies<sup>7</sup>:

- Bus provided - Steer Davies Gleeve 2004
- Car sharing - Mehranian et al. 1987, Shaheen et al. 2000, and Cervero 2002
- Cash incentives and/or rewards - Foxx and Hake 1977, Shoup 1998, and Department of Transport 2007
- Changing worksites - Mullins and Mullins 1995
- Company bike and/or bicycle infrastructure - Kristensen and Marshall 1999, Anable et al. 2004, and Department for Transport 2005
- Economic disincentives - Watson and Holland 1978 and Jakobson et al. 2002
- Parking price increase - Miller and Everett 1982
- Personalized transportation information - Perth Department for Planning and Infrastructure 2001, Anable et al. 2004, Department for Transport 2005, Cooper 2007, Department for Transport 2007, and Rose 2008
- Providing information about alternative modes - Tertoolen et al. 1998, Rose and Ampt 2001, Zvonkovic 2001, Garvill et al. 2003, Bamberg 2006, and Department of Transport 2007

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<sup>7</sup> Please note that the years and referenced authors' sourcing and data comes from Graham-Rowe et al. 2011, the references to researchers and years are used only in summary here and are not included in the bibliography.

- Public transit improvements - Kristensen and Marshall 1999, Arentze and Borgers 2001, and Department of Transport 2007
- Publicly known plan - Jakobson et al. 2002 and Eriksson et al. 2008
- Regulated commute reduction plan - Giuliano and Hwang 1993
- Subsidized transit - Bamberg and Schmidt 2001, Zvonkovic 2001, Anable et al. 2004, Bamberg 2006, and Rea and Ryan 2007
- Telecommuting and/or telecenter - Hamer et al. 1991, Henderson and Mokhtarian 1996, Balepur et al. 1998, and Mokhtarian and Varma 1998 (Graham-Rowe, et al. 2011)

It seems there are no guarantees for success, so then what should be recommended for the base? Should we wait until we have absolute conclusive evidence that one specific approach works 92% of the time before implementing, or is 73% okay enough to try? What about the resources, the funding, the staffing? Are the service-members and employees of the base unique? What is the culture like? What works in other places but will not “work” here? Or more importantly, what will not apply or work out in town that could prove to be very successful in this unique setting?

The list of approaches or initiatives that the base Commanding Officer<sup>8</sup> (CO) could take are fairly exhaustive, so only those supported by literature, case studies, interviews, or potentially available because of the uniqueness of the base are going to be evaluated to find out which ones the CO should look to implement because they are effective and supported by base personnel.

### ***Monetary Incentives***

Monetary incentives would include anything that exchanges US Dollars for access (e.g., tolling, parking fee, reward). Other disincentives like fines, late fees, and penalties often use monetary amounts to cause just enough of a sting to prevent habitual abuse of whatever system they are part of. Most of these will need thorough

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<sup>8</sup> This term is used loosely to represent both a specific position, a mindset, and to encompass the numerous commands, departments, and other leadership teams and decision makers inside the complex “base.”

legal and fiscal review and may be too painful to push the envelope to implement, but are worth airing out and asking respondents about.

### **Paid Parking**

Right now the cost of parking on base is free. If the base were able to charge for parking (even using it as a fund raiser or donation) this may reduce the number of people driving to base. This is the premise behind Donald Schoup's work in the *High Cost of Free Parking* (Shoup 2005). Would employees pay for parking? How much should employees pay for parking?

### **Monthly Non-SOV Stipend**

Currently there are no stipends for service-members and employees who chose alternate modes of transportation. What if the base had funding to give to people daily who did not drive alone to work like at Seattle Children's Hospital? How much would it have to be to convince people to think about other modes of transportation?

### **Local Toll**

The closest toll is south of the base, crossing the Tacoma Narrows Bridge toward Tacoma and costs \$4 for a car without the good to go pass. It is free to use all other roads to the base and to gain access to the base. If one of the roads leading to the base had a toll, would that reduce the number of drivers? How much would the toll have to be to make an impact? Could the CO influence the local area to set up a toll?

### ***Non-monetary Incentives***

A non-monetary incentive (or disincentive) would include factors and other access issues without dollars, some examples of these would be time off, laws, congestion prevention, or waiting.

### **No vehicle policy**

Many civilian employees, due to the limited number of available parking spots, are on a waiting list to get a parking spot. One unsolicited comment from the base that concerned me was the alleged use of false handicap placards. With a fake handicap placard in one's vehicle, not only can you secure a parking spot, but typically a parking spot close to your place of employment. With parking at such a premium – people are

already forced to find alternate ways to access the base. What if the CO decided to not allow any personal vehicles on base – ever? This is not recommended, but what is the pulse of the current employees? What do they think of such a drastic solution?

### **Liberty Incentive**

What would happen if the CO gave a day off as an incentive to those who were able to modify their behavior to find alternate modes of transportation? How often should the reward be? Is one day too cheap or too much? Would something like this work?

### **Wait time**

All personnel in private vehicles are asked to wait in line at the gate, show identification, and have decal in the vehicle window. How long are people willing to wait in line, daily, to gain access by private automobile before finding an alternative? This is similar to the commuters who found other routes when *Stuck in Traffic* and/or sought out alternate forms of transportation (Downs 2004).

### **Physical Exercise Commute**

This incentive is unique to service-members whose command requires them to exercise three times a week. In a way to promote specifically jogging, walking, skateboarding, and bicycling, this incentive would have the motivated individuals work-out to and from base instead of driving to base and working out at base. How easy would this be to abuse? But would it be supported? There are people now who ride and jog to work – why should they be required to do additional exercise?

### ***Urban Design Approach***

Urban design plays a very large part in the automobile dependency research, literature, and actual practice. Cities that have been able to increase density, build transit, and limit free parking availability should be expected to see decreases in automobile dependency. The base was planned and built before the invention and heavy use of the automobile and so was designed with a larger rail, pedestrian and water transportation community in mind (much like tenants of New Urbanism push for today).

In 1891 the Navy purchased 190 acres for \$50/acre from William Bremer, to establish the base (Bremerton City 2011). Over the course of time, however, the base converted

from a rail, pedestrian and water transportation community with zero cars and automobile infrastructure to a base with 6,200 parking spaces (Danaher 2011). If we only had this number to work with, using a conservative parking stall size of 8 feet by 16 feet, multiplied by 6,200 parking stalls equals 739,600 square feet of parking stalls, or 18.2 acres of real estate dedicated to free automobile parking. Without even considering roadways, parking lot paths, operating areas, no parking areas, and other impervious surfaces other than buildings, 9.6% of the base is dedicated to the temporary storage of single occupancy vehicles. Even with a tenth of the base dedicated to parking, with nearly 30,000 employees commuting to the base daily and only 6,200 parking spaces, you immediately gain some strong benefits in naturally forcing alternative modes of transportation. According to the GIS data provided by the base, shown in Figure 12, the base is 18,057,417 square feet and the parking area is 5,831,906 square feet. Impervious surfaces or “vehicle parking area” constitutes 32% of the base, leaving 68% for buildings, green space, dry docks, roads, piers, etc. Can some of this real estate be used for a better purpose? Can future projects be combined into mixed uses? Is urban design too expensive?

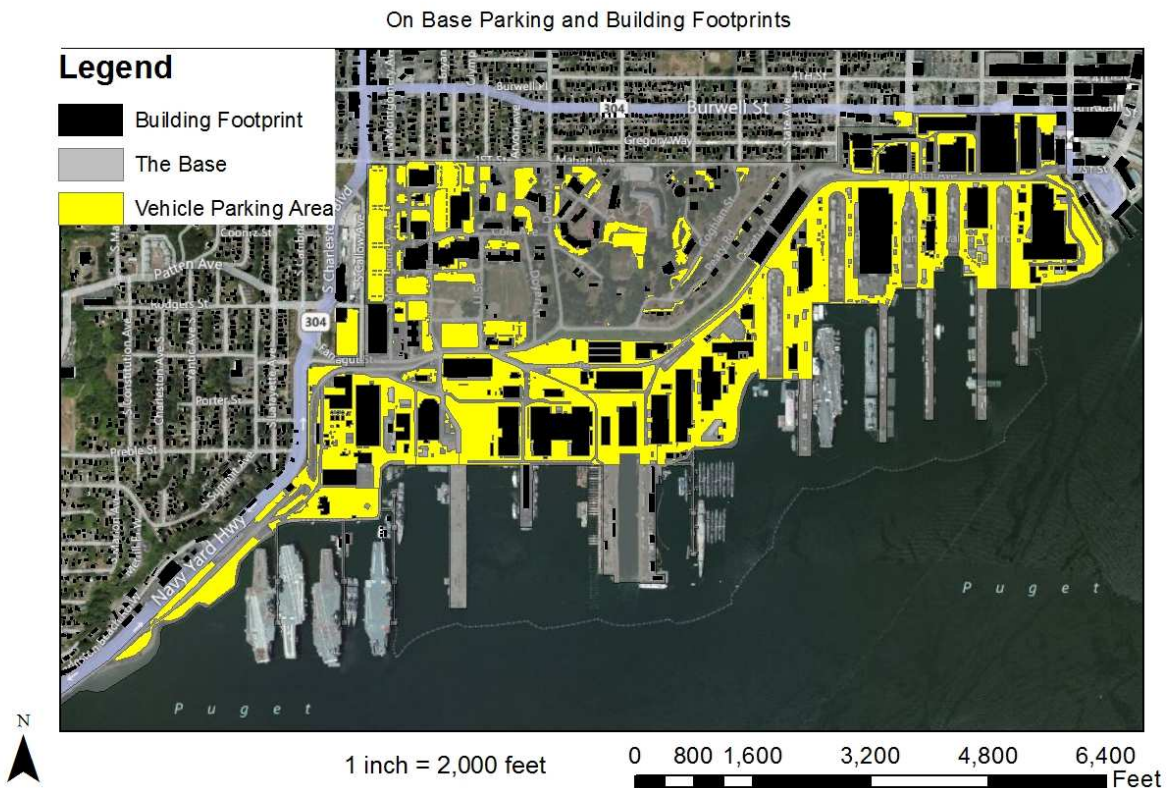


Figure 12: On Base Parking and Building Footprints

## **Bike City**

The base commander could have the base planning department work up a bicycle master plan and when funding became available for various projects throughout the base, the bicycle infrastructure could be built little by little. This would be even better if it tied in with the local community, pedestrian, and transit options. There are two primary methods for reducing car use, “the integration of walking, cycling and public transport infrastructure with land use and strong intraregional economic linkages (Dieleman, Dijst and Burghouwt 2002).” What about free bikes? What about bike sharing? What would it take for people to be convinced to ride a bicycle to work and for running errands?

## **Pedestrian focus**

As a major employer in the area, the base should continue to have a healthy relationship with the local planning agencies. If the area just outside of the base is designed around the pedestrian and yet the base is designed around automotive access – people will probably still drive.

When considering base urban design, the overwhelming considerations are mission accomplishment, funding, and the relationship to surrounding facilities (i.e., not walkability, mixed use, and bicycle infrastructure). These considerations often make for a close knit base that encourages walkability and reduces automobile dependence, but these are coincidental benefits from a limited real estate market and not a concerted effort to address automobile dependency.

The base commander could also ask the planning department to conduct a pedestrian focused analysis of the base – identifying areas and ways to make the base more pedestrian friendly. As projects come up, more and more pedestrian first projects could be incorporated, thus leading to less automobile dependency.

This approach gives the base more of a downtown. One could imagine the command offices, department headquarters, and high traffic areas all in one centralized location. This is also one of the five patterns found in low auto dependent cities (Newman and Kenworthy 1989).

### ***Transit Related Approach***

These initiatives would include anything that deals with transit. Examples would include Transit Oriented Development (TOD), expanded transit service, employee reimbursement of transit expenses, and coordinating transit service with employee needs.

### **Sell the car take transit**

An executive order (13150) was issued in April 2000, by then President Clinton, establishing a mass transportation and vanpool transportation fringe benefit program (Clinton 2000). This order eventually led to the Transportation Incentive Program (TIP) that is still in use today – funding federal employees up to \$125/month for transit costs. Why doesn't everyone participate? As mentioned earlier, the base commander does not have control of the TIP funding, but can surely seek out ways to increase the advertising of this great (and fully funded) program. The more people know about the funded transit costs and available transit options, the more likely they are to use it.

### **Navy bus service**

The Worker/Driver Program is a very successful and unique program for the base and could easily be replicated in other areas. Starting in the first place because of fuel rationing in WWII, the worker/driver program eventually was turned over to Kitsap Transit in 1983 and today offers 28 unique routes to the base (Kitsap Transit 2011).

The drivers are part-time Kitsap Transit employees who are full time employees at the base. It is basically a mega carpool. The driver follows his or her daily route to work and picks up passengers along the way, parks the bus on or near the base and then takes the same route home, dropping off passengers along the way. With the previously mentioned TIP funding, there is little to no out of pocket expense and there seems to be enough flexibility on both the Kitsap Transit and the employees that it has continued to be a remarkable success story. The current service area extends from Port Gamble to Burley in Kitsap County (Kitsap Transit 2011).

If this is working so well, why isn't it expanded? Does everyone know about this? Shouldn't everyone who can be using it? What if it was improved like the Microsoft

Connector shuttles? The Microsoft Connector has free service for Microsoft employees, Wi-Fi, bike racks, multiple location pickups, and AC power outlets (Microsoft 2007). I'm not sure how this would be paid for, it could become a pseudo Kitsap Transit shuttle modeled off of the worker/driver success story, that allows employees to use the TIP funding and even start work when they get on.

### **Zipcars on base**

This pseudo-transit concept is not typically for commuting, but for the movement of employees during the work day. Instead of employees taking a bus or train between bases and work sites, the Navy keeps a fleet of vehicles for official business. These vehicles are usually assigned at the department level. Sometimes, however, a government vehicle is not available or provided and employees are expected to drive themselves.

The zipcar concept has a certain number of cars parked (living) in a certain parking lot. Members of zipcar are allowed to borrow the car from that lot for an hour at a time for about \$10/hour – which covers fuel and insurance. If the base authorized zipcars to park on base, members who took transit, but need to use a car during the day, would be able to borrow a zipcar. This car sharing concept was seen to be popular with the Universities, but would people use it? What concerns would they have?

### **MILPASS**

As a major employer in the area, the base should continue to have mutually beneficial line of communication open with the local transportation agencies. These shared ideas and meetings could identify areas of immediate, gradual, and long term improvements for transit. Cities that have a low automobile dependency also increased the orientation of their “transport infrastructure to non-automobile modes (Newman and Kenworthy 1989).”

One idea is to borrow the concept from the University of Washington's U-PASS program where each student is required to pay \$76 for a quarter's worth of fully funded mass transit rides – with no restrictions on time or destination. Each military member and federal employee would be issued a Military Pass (MILPASS), a fully funded pass

that would provide not just free commutes, but free transit use 24/7 with no restriction on time or destination, throughout the Puget Sound. This worked for me, so I imagine it could work for others.

This would have to be a coordinated effort, but the concept is to use the \$125/month available to each federal employee for reimbursement for transit (see TIP above) and lump it all together into a massive check that Kitsap Transit could use to improve transit options near the bases. As a pilot program, the CO could look for 1,500 volunteers to have a MILPASS for one year provided by the local transit authority (i.e., ORCA Card) in exchange for intensive survey strings attached like use, mode behavior change, and actual amount expended. The local transit authorities would also receive the full annual TIP amount (i.e., \$1,500 each or \$2,250,000 total) to be used for enhancing base recommended transit services, routes, and schedules.

### **Local transit improvements**

What is working in and around Bremerton regarding transit? What is broken? There are already numerous busses that support the base: shipyard shuttle, Kitsap Transit, and the successful worker/driver. Are there looming reasons people do not use transit? What can be improved? As the CO – what should be recommended or coordinated?

### ***Jobs-Housing Balance***

The concept of jobs-housing balance is to more appropriately co-locate employee housing and places of employment. Due to a myriad of issues, including automobile transportation, zoning, health, affordability, etc., employer locations and employee housing have grown apart in distance in Bremerton. Though many people probably would still prefer to live away from work to separate work-life and home-life, there is much research supporting the benefits of increased density and availability of housing and jobs in a given area. “Our overall finding is that certain land-use patterns, including greater employment density, population density, land-use mix and job-housing balance, are associated with less auto use (Frank and Pivo 1994).”

Bremerton, like most places in America, has suffered from the desire to buy affordable housing (away from jobs) and to also disperse some employment. There is currently an

imbalance of housing and jobs. The base has nearly 30,000 employees, but there are only an estimated 13,000 housing units within a 5 minute drive of the base in Bremerton, with a vacancy rate of at least 10%, per Table 3. What is most concerning about this table is the projected rapid growth of vacancies near the base – 15.5% in 2015 up from 9.9% in 2000 (ESRI Business Analyst Online 2011).

<b>Housing Units by Occupancy Status and Tenure within 5 min drive time of Bremerton, WA</b>						
	Census 2000		2010 via ESRI		Projected 2015	
	Number	Percent	Number	Percent	Number	Percent
Total Housing Units	12,505	100.0%	13,040	100.0%	13,325	100.0%
Occupied	11,270	90.1%	11,295	86.6%	11,255	84.5%
Owner	4,994	39.9%	4,983	38.2%	4,887	36.7%
Renter	6,276	50.2%	6,312	48.4%	6,368	47.8%
Vacant	1,235	9.9%	1,745	13.4%	2,070	15.5%

**Table 3: Housing Units by Occupancy Status Source: WA (ESRI Business Analyst Online 2011)**

### **Increase on base housing**

The base commander could have the planning department draw up plans for increasing housing on and near the base in an effort to increase density and work with the city to increase walkability and encourage a booming retail market downtown. Would this actually make a difference? Two different people from the base told me that some on base residents still drive to a closer parking lot on base. What do people want in these on base houses? Will they be required to live there?

### **New Family Housing Recommendation**

What are new families moving to the area told about where to live? What are the driving factors? Is it crime, schools, spouse’s job, a nice house, a nice neighborhood, a great view, best value, local shopping, privacy, grocery store, big yard – why do people chose to live where they do? With people coming and going so often in this military community, it seems like the base would be in a good position to recommend new families move to Bremerton to promote a better job-housing balance. Is Bremerton recommended to live in? Why or why not? Can the base leadership impact this reputation?

### **Increase Housing Allowance Near Base**

What if the base commander was able to conduct a multiyear pilot program – allowing an increased housing allowance near the base? If service-members could afford more property, but they had to live close to base, would people still move far from Bremerton? What would happen to the area with the increased housing allowance? Would it get abused? Would it work? Would people still drive?

## **Chapter Five: Methodology**

With a nearly limitless number of ideas and suggestions, some level of reality, fiscal awareness, timeliness, control limits and other factors need to be considered before making a clear way forward. One way to look at initiatives is to ratchet the gear way up, to a point where everyone would be affected. Everyone knows for instance, that if all the piers and buildings were leveled and the entire base turned into a parking lot, no one would drive because there would be no work places to go to. If no cars were allowed on base, no one would drive on to the base – so there needs to be a balance. Deliveries, handicap, efficiency, convenience, all demand some level of parking. A daily toll of \$100 would keep people from driving, as would a daily parking rate of \$100 – daily outlays of cash of this magnitude would certainly change behavior (it would probably cause a riot as well). So a balance needs to be sought – the current path of building parking lot after parking lot and garage after garage seems to be incentivizing sailors, civilians, contractors and others to drive – why wouldn't you drive? What approaches are effective while being supportive and not detrimental?

### **Survey**

I decided to ask the people who drive to Bremerton now. When I asked the faculty at the University of Washington for the best way to conduct a survey, the recommendation, for this question was to mimic the Washington State Transportation Survey methodology – open ended questions. By using open ended questions, this research is much more open to discovering future potentially effective concepts and/or methods to reduce automobile dependency. Strong concepts or methods discovered, however, will need to be followed up with methodologically sound research approaches before being considered outside of academia.

The faculty also suggested a smaller cadre of survey takers. Though the Washington State Transportation Survey covered over 5,000 people, they were able to do what I intend for this survey to do, consolidate the open ended questions down to several strong directions for the leadership (base/State) to consider in future transportation related policies:

1. Urgency – Most residents do not see the transportation system’s needs or funding situation as immediately critical, however they still feel it is urgent to maintain an effective transportation system now and in the future.
2. New Revenue – Even though most residents are not convinced that the immediate need is critical, a strong majority are still willing to consider raising “some transportation taxes and fees.” However, only 3 of the 9 specific revenue sources tested – electric vehicle fee, emissions fee, and tolling – receive majority support as good ways to fund increased investment.
3. Increasing Support – Information about the urgency of the funding need does not appear to be an effective way to increase support for new revenue. Support does increase several percentage points after descriptions of the benefits of increased transportation investment.
4. Priorities – Residents across the state place a high importance on maintenance and preservation and there are also clear regional priorities – e.g. transit (urban/suburban areas), year round roads (rural areas), ferries (Puget Sound region).
5. Tolling – Tolling has majority support across the state. Support increases when tolls are linked to “pay[ing] for major state projects” and reaches two-thirds when linked to a fairness element (“those who use and benefit the most...pay a bigger share of the cost”).  

A majority of residents favor using toll revenue to fund improvements within a travel corridor rather than just on the specific facility.
6. Transit/Passenger Rail – Increased state funding for transit and passenger rail has strong support in most of the state.
7. Ferries – There is strong support for state funding of the ferry system, although initial support is primarily driven by strong numbers in the areas that rely on the ferry system. Informed support is also strong across the state (Washington State Transportation Commission 2012).

## Approach

The subject of reducing automobile dependency includes health, psychological, financial, and social issues – leaving the possibility of a single “right” answer impossible (or yet undiscovered). The case study approach using qualitative methods over quantitative methods has been recommended to purposefully add to the body of knowledge on the subject some new ideas and concepts that may easily translate and be combined with already proven quantitative methodologies in future research. The usefulness and practicality of gathered information may be problematic from the very root of verbal v. actual (i.e., not everyone practices what they preach). The proposed sample size should be small and made up of intentionally varied backgrounds and experiences, but be large enough to gather well-rounded feedback.

## Respondents

The survey was approved and I limited my respondents to the following three criteria:

- Work in Bremerton<sup>9</sup>
- Between the ages of 18-85<sup>10</sup>
- Regularly drives to work<sup>11</sup>.

With the help of the Navy’s public affairs office and the legal office, I attracted 28 anonymous and confidential respondents, but after reviewing the answers to the survey questions, I found some respondents did not work in Bremerton (n=3), though this wasn’t asked as a specific question, the respondent examples clearly are out of Kitsap County. Of the remaining 25, five chose not to participate after reading the consent form (n=20). Of the remaining 20, four commuted alone in the car less than 50 days per year (i.e., not “regularly”). So the original 28 was reduced down to sixteen (n=16).

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<sup>9</sup> I did not differentiate between Bremerton and Bangor as many employees work at both, those respondents who said Bangor in their examples due to their proximity and recent alignment of the bases were not excluded.

<sup>10</sup> I did not ask respondents for their age.

<sup>11</sup> I did not set a minimum for “regular” due to deployments, travel demands, varying duty requirements, and other factors, I used 50 days as the minimum, while those who drove zero to 49 days a year were excluded.

## **Dedicated Hourly Commute Cost**

One way to begin looking at the sixteen respondents, is to analyze the numbers that make them up. I asked respondents how many days they drove alone to the base, how many minutes it takes to get to the base, and the annual cost of car ownership. With these three figures I was able to determine a dedicated hourly commute cost (DHCC). Though car manufacturers, automotive repair industries, transportation planners, and others likely desire a high DHCC, I am using this number as an investment analysis. Looking at the car as a tool, one should consider the use cost (e.g., one shouldn't purchase a \$800 table saw if it will only be used for 10 minutes per year, maybe the use of a shop, a rental, or a friend's may be a wiser option). Per Table 1 Table 4, the sixteen respondents have an average DHCC of \$63.37. This means that if the respondents only used their car for commuting, every hour they spent commuting alone would cost them \$63.37. So the cheaper the annual car costs and the more often you commute, the lower one's DHCC becomes. Participant #8392164, for instance, only drives alone to work 33.3 hours a year, but pays \$10,000 a year for the convenience of having a car, bringing the DHCC to \$300. On the other hand, participant #8393968 spends 310.3 hours commuting annually, spends \$3,500 annually on their car and so has a DHCC of \$11.28.

Survey Identification Number	Days/year drive alone to base (estimated)	Minutes to get to drive to work (estimated)	Annual hours spent commuting by car alone (estimated)	Annual cost of single car ownership (estimated)	Dedicated Hourly Commute Cost (annual car ownership cost divided by number of hours spent commuting alone)
<b>ID# 8356566</b>	150	10	50.0	\$ 4,000.00	\$ 80.00
<b>ID# 8357627</b>	225	45	337.5	\$ 10,000.00	\$ 29.63
<b>ID# 8386396</b>	190	45	285.0	\$ 8,000.00	\$ 28.07
<b>ID# 8386520</b>	200	18	120.0	\$ 18,000.00	\$ 150.00
<b>ID# 8386756</b>	190	20	126.7	\$ 4,500.00	\$ 35.53
<b>ID# 8388169</b>	260	45	390.0	\$ 6,500.00	\$ 16.67
<b>ID# 8392008</b>	300	15	150.0	\$ 12,000.00	\$ 80.00
<b>ID# 8392035</b>	200	15	100.0	\$ 4,000.00	\$ 40.00
<b>ID# 8392164</b>	50	20	33.3	\$ 10,000.00	\$ 300.00
<b>ID# 8392202</b>	250	20	166.7	\$ 7,000.00	\$ 42.00
<b>ID# 8393130</b>	265	25	220.8	\$ 5,000.00	\$ 22.64
<b>ID# 8393968</b>	266	35	310.3	\$ 3,500.00	\$ 11.28
<b>ID# 8394209</b>	200	8	53.3	\$ 5,000.00	\$ 93.75
<b>ID# 8394766</b>	250	25	208.3	\$ 4,000.00	\$ 19.20
<b>ID# 8396425</b>	192	16	102.4	\$ 4,800.00	\$ 46.88
<b>ID# 8399085</b>	207	35	241.5	\$ 4,400.00	\$ 18.22
<b>Total</b>	3,395.0	397.0	2,895.9	\$ 110,700.00	\$ 1,013.86
<b>Average</b>	212.2	24.8	181.0	\$ 6,918.75	\$ 63.37

**Table 4: Dedicated Hourly Commute Cost**

The DHCC, though useful as a snapshot for current regular car drivers and a personal wakeup device, does have some flaws and unintended consequences. Nearly all the adjustments to reduce the DHCC are not positive (except for selling your expensive car). One may be encouraged to commute more often or take a longer route to reduce the hourly rate. This also does not take into account the complex other benefits of having a car as discussed earlier in the complexity section. The number of cars one owns also is irrelevant (only one of the 16 respondents had only one vehicle). It could also deter one from looking for other modes of transportation as the DHCC would rise by reducing the number of hours commuting alone would decrease.

## **Respondent Military/Civilian Demographics**

The base has a variety of employees – civilian employees, contractors, active duty military, and others. Civilian employees are the steadiest and can be located in Bremerton for 40 years without moving. Contractors vary depending on their contract, some may be sub-contractors and are hired for as little as a day or they could be

working on a multi-year contract and have connections with the base that span several decades. The active duty military typically rotate out of Bremerton every 2-5 years.

Of the sixteen respondents, 5 are active duty military, 11 are civilian employees, and zero contractors or others. Of the five military, 1 is enlisted and 4 are officers. Of the four officers, two are junior officers and two are senior officers.

Though low in overall numbers, there is a healthy representation of the mix responders.

## **Survey Results: Scenarios to Reduce Automobile Dependency**

Based on the literature review, case studies, interviews, and feedback from my committee, I consolidated the scenarios and the questions down to their current format. I have submitted the entire survey and results in Appendix B, but for usefulness, I have compiled the most useful comments below.

### ***Scenario 1: Commanding Officer One Month Drastic Commute Reduction***

#### *Concept*

The first scenario posed to the respondents was a chance for them to have full authority and it did not have any financial limitations, only time and numbers to force a bit of a drastic measure(s). The intention was also to ask this question twice, once at the beginning and then at the end after they had responded to a series of scenarios to see if any resonated with them<sup>12</sup>.

#### *Scenario*

Let's say you are the new commanding officer of a naval base and have been given an order to cut the number of people driving their cars to your base from 10,000 to 3,000 by next month. **What would you do?**

#### *Results*<sup>13</sup>

Probably the most honest and realistic answer was "there are too many variables to give a good answer." Most respondent strategies<sup>14</sup> fit into the five overall categories<sup>14</sup>.

#### 1) Non-monetary strategies

- a) Adjust work schedules (e.g., compress, stagger, change, allow flexibility, etc.);

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<sup>12</sup> Only two of the 16 changed their answer – zipcars and the navy shuttle resonated.

<sup>13</sup> These results and the following results for all the scenarios; will have some grammatical errors that I am leaving to help portray the variety of responses and emotions. I have tried to correct for spelling and occasional clarification as needed.

<sup>14</sup> I've put carpooling and flex cars (i.e., gov't vehicles or zipcars) in with transit related as they are vehicles used for moving people. I also included bikes with urban design because of the importance in building a bicycle infrastructure.

- b) Increase awareness (e.g., educate base personnel, solicit innovative ideas, new employee briefing, etc.);
  - c) Creative parking (e.g., mandatory reductions, eliminate on base parking, stricter parking privileges, etc.);
  - d) New controls (e.g., force carpooling, task a team to determine what the effect on the mission will be, limit base access, require every car entering the base to have at least three occupants, all military personnel will find alternative means to report onto the base, all government employees that are not disabled, are requested to find alternatives to parking POV's on base, etc.);
  - e) Commander coordination with: the city, the unions, the local transit service, and local businesses.
- 2) Monetary incentives
- a) Incentivize alternatives.
  - b) Offer incentives for those who drove alone or in small carpools to band together into vanpools or ride on transit buses.
  - c) Provide monetary incentives to personnel that carpool and use public transit.
  - d) The goal won't be met in one month unless the cost of gas jumps up.
- 3) Transit related initiatives
- a) Increase transit (e.g., shorter intervals, increase frequency, increase usage, increase in existing city busing, immediately request more funds for buses or vouchers for mass transit, etc.)
  - b) Dependable shuttles (i.e., offer shuttle services to worksites)
  - c) Carpool/vanpool connector (e.g., awareness and increase participation)
  - d) Personalized transit information (e.g., carpool/vanpool, determine available alternative transportation means, ride share, etc.)
  - e) New transit (e.g., petition for a Light Rail system, new bus routes that go directly to bases from park-and-rides, worker driver buses for military, ensure transportation is timely to account for special shifts (i.e., personnel that work outside normal business hours), etc.)
  - f) Provide a flex vehicle program for individuals who would be willing to let their vehicle go and if they had to leave base be able to rent or sign out one.

- 4) Urban design
  - a) I'd do what we did after 9-11. With a Memorandum of Understanding, I'd 'obtain' remote site parking lots throughout the commuting area, post security cameras and bus folks into/out of the base.
  - b) Increase off base parking garages/lots.
- 5) Jobs-housing balance
  - a) Increase telecommuting and look for additional alternatives to established telecommute policies.
  - b) Telecenters (i.e., develop local work hubs in or near Port Orchard, Silverdale, Poulsbo for those who do not have to be physically present at the PSNS/IMF to perform their duties)

### *Discussion*

The month requirement in the scenario probably lead to more decisive and immediate actions than urban design and jobs-housing solutions could tolerate, and so were limited to off base parking increases and telecommuting, respectively. Only a few monetary incentives were suggested – possibly due to a climate of limited funding. The other two areas, non-monetary strategies and transit related incentives, showed the greatest support and number of suggestions – recommendations in these two categories will be more likely to gain traction.

### ***Scenario 2: TRANSIT - Sell car take transit***

#### *Concept*

For this scenario, I was looking for familiarity with the Transportation Incentive Program (TIP) that came about as a result from then President Clinton's Executive Order 13150 mandating federal entity commute reductions (Clinton 2000). This is also based largely on my own testimony of becoming automobile independent.

#### *Scenario*

A federal employee that you know was paying \$8,000 dollars a year for his car (i.e., payments, gas, maintenance, insurance, etc.), to save money he sells his car and

begins using transit that costs him \$1,500 a year. Later he finds out that federal employees can receive up to \$125/month reimbursed<sup>15</sup> for transit costs. He is very excited to tell you about the TIP program and tries to convince you to sell your extra car and begin riding transit. **What would you tell him?**

### *Results*

“Drop dead! I use my car for transportation other than commuting to work.”

Convenient car: keep the car, no desire to sell my car, the car is still needed, I want the freedom to drive myself, hard to do with 3 kids, I can perform chores on the way home, need more flexibility, I can adjust my schedule with a car, I live 15 minutes from the store, it was so hard getting a parking pass on base, I don't want to give it up, a vehicle is still necessary for many, I would keep my car...at home.

“For single personnel that would be feasible. For a family with children this would not likely be the best option and could cause issues with transportation to and from school, daycare, doctor visits and other unexpected situations that come with having a family and children.”

Difficult transit: commute is too long, current transportation environment in the surrounding communities is not efficient and lacks 24/7 transportation support, there is no available transit or stops close to home, I'm not sure where I will be in the future and how mass transit will service that area, public transit is dangerous and stressful, transit system does not work well for recreational needs, my work hours vary too much for transit, if my job had 'regular' hours I would still be riding transit.

### *Discussion*

Respondents provided an overwhelming number of car convenience justifications and personal reasons for not using transit. In order for free transit to resonate, it looks like transit service has to be practical, increase in routes and times, and become safer. The car is too valuable and convenient to toss it aside for even free transit.

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<sup>15</sup> I later learned that the TIP funding is actually paid up front, not reimbursed.

### **Scenario 3: TRANSIT - MILPASS**

#### *Concept*

Based on the hugely successful UPASS at the University of Washington, where for \$76 a quarter, each of the 40,000 students' identification cards becomes a fully funded transit pass. Because the Navy (and the Army) are such large employers, if in conjunction with the TIP program, were able to have service-members use their identification cards as a fully funded transit pass (MILPASS) that didn't need to be used just for commuting – there could be multiple benefits for all parties. The key difference here is that the shot in the arm funding would go directly to support transit improvements near the bases.

#### *Scenario*

All new employees have been given a fully funded transit pass that allows them to ride on any bus, train, or ferry in the entire Puget Sound area for free at any time on any day. Due to the success of the program, all current employees are also invited to receive the same pass. **How would this pass influence your current lifestyle?**

#### *Results*

For MILPASS: I would DEFINITELY use this pass, would be used more to cover non-work related (not time critical) activities, coupled with an increase in bus times/routes I'd take the bus to work, sounds like a good idea, this is a step in the right direction, I would make more of an effort to ride transit, I would give up driving to work and driving to many other places, I would like to have one, it would be wonderful, if...

“I would use this method provided that A. I knew this option was available, and B. the frequency and access to my area (where I live) and medical appointments etc.”

Against MILPASS: It would not be beneficial for personnel living in, say, Belfair or Union, WA where you lose the convenience of coming/going to/from work when you want, it would still take 1.5 hrs. instead of 35 min. to get to and from work every day, it is unnecessary government welfare for an already well compensated workforce, they

should pay for their own transportation like the rest of us, minimal impact with respect to transportation to/from work, my time is more valuable than what I would save by using the pass, my freedom is worth the cost, I live in a rural area with limited or no access to these forms of transit, it would not change my needs or life style, the current transportation environment in the surrounding communities is not efficient and lacks 24/7 transportation support, I live in the middle of nowhere and would not be feasible to me (26 miles away from work), I would refuse on principle- this would be a waste of taxpayer dollars, [with current transit options, I still would have to] walk over a mile to get to my car.

### *Discussion*

A few strong supporters and strong dissenters, but in general most responders had constructive comments or a mixed statement (e.g., if, but, etc.). Some concerns of taxpayer abuse would have to be transparently dealt with if this was to go forward. Limited transit options and time of commute is a major issue that would need to be resolved, possibly with the shot in the arm funding.

### **Scenario 4: TRANSIT - Local Transit Improvements**

#### *Concept*

With this scenario, I was trying to identify more specifically why base personnel who regularly drove didn't use transit. The expected results will probably be out of the Commanding Officer's jurisdiction, but it may be possible to coordinate clearly beneficial suggestions.

#### *Scenario*

You have been selected to provide some end-user feedback to your local transit authority, based on where you currently live. **What services could transit provide for you to make you more likely to use transit?**

#### *Results*

“If I had the ability to use transit some work days and not others and be able to park close to work I would use transit; being forced to do one or the other turns me off to transit.”

Schedule: reliable, dependable, Worker Driver buses running a bit later in the mornings as well as at 0600, more pick up times, Create more frequent routes to various places from where I live, during the day, if an employee needed to get to their vehicle for an appointment, there would be scheduled shuttles - every 15 minutes - to the lot, provide 24/7 transit in the communities to accommodate all work shifts and lifestyles, ensure transportation is timely, be daily accessible, have the Port Orchard ferry run 24/7

Routes: have routes directly from the park and rides on the peninsula to the bases, closer pick-up, better routes, easily accessed, create more accessible routes to various places, I live in a rural area with limited or no access to these forms of transit, provide shuttle service to and from a designated secure parking area, extend transit routes to support those that live further away from the city limits, a direct service from downtown Port Orchard to the Bremerton Ferry and to the Southworth Ferry, closer pick up point near residence, if I wanted to take a bus out to Belfair, the entire trip would take 6 hours....by car it's 25 minutes.

Publicity: Let people looking for commuters post ads on the site even if they don't already have enough for a vanpool, more integrated (and publicized) alternatives.

Other services: Real time route planning/tracking on-line tools, provide incentives for those that use the transit, ensure there is adequate security for the transit system, require emergency transportation is available if the person needs to get to the hospital for a family member that has been hospitalized or other emergencies.

Against transit: I do not believe in transit for my own self, keep public transit out of my neighborhood, it brings crime and drives down property values.

### *Discussion*

Two of the sixteen responders want nothing to do with transit. The other fourteen, however, offered a variety of suggestions that seemed to fall into the areas of

scheduling, routes, publicity, and other services. Though several of the suggestions are out of the hands of the base, the base certainly could influence future routing and scheduling as the major employer in Bremerton. The Commanding Officer, for example, could look into providing information to Kitsap Transit about housing locations that could target some pilot bus routes. Scheduling and dependability are also factors after routes are firmed up – I imagine the funding would be difficult to justify, but a Kitsap Transit bus rapid transit model from various high transportation, employment, and housing nodes seems like it would be worth further study. The publicity suggestions could be worked on between the base and transit – the base could take the lead and be proactive with vanpool efforts.

### ***Scenario 5: NON-MONETARY - Liberty Incentive***

#### *Concept*

Some people value money, some value time – I was using time off (i.e., day of liberty) as a reward mechanism. While there certainly are some financial related issues with this, for the most part, the Navy would consider this a non-monetary incentive. I don't know of any commercial applications of this, but thought it worth asking as it may resonate with some people. I also didn't know if 40 days was too short or too long – it was a good biblical number and seemed to be a good place to start as it would translate to about two months of work days.

#### *Scenario*

Your commanding officer discovers that nearly everyone on her staff is driving alone to work. She decides to implement a reward system to give a day of liberty to everyone on her staff who does not drive alone to work for 40 days (doesn't need to be consecutive). **How could this program be more likely to succeed?**

#### *Results*

Positive: Sounds good, I think it would work for a while, it would succeed somewhat, send out the website for people to look over.

Problems: difficult to track, difficult to fairly enforce, more of a hassle than anything, although good in thought, probably not good in practice, difficult to find people to commute with, I don't think it would work as a long term solution, this isn't realistic for civilians, civilians can do this....military need more consideration as our work schedules are not as fixed, this would have to accommodate all shifts and special circumstances for all personnel, similar strategies have been tried in the past and were viewed as unfair to some that could not fit their schedule into the parameters of the program, to actually do it and not just say it.

“...her ability to implement this system requires that her staff is paid by the same color of money. OM&N funds would support as would SIOH, but NWCF is directly from the customer and doesn't support her initiative. She would also have to get authority from above and fully develop the plan...does she have a staff of 5 or 50? Makes a difference to the budget.”

Alternatives: better to allow compressed work schedules like 4x10's and reduce commuting by 20% right off of the bat, I've seen programs where only a single parking pass is given to pre-arranged carpool members, allow employees with like needs to work flexible schedules (i.e., need to pick up kids from school etc.), perhaps they could partner with the local gas stations and offer incentives of a free tank of gas every six months for those who decided to join a carpool, have the rewards be more gradual, like every 10 days earns you a gift card or something, if you carpool to work you can leave work 30 min early.

### *Discussion*

Though some positive feedback – many legitimate potential problems were raised and many alternatives were presented. If this strategy were to be implemented, it seems like this should go through a small pilot/testing phase first.

### ***Scenario 6: NON-MONETARY - Physical Exercise Commute***

#### *Concept*

This scenario is a direct question from the congestion problems at Joint Base Lewis-McChord. It was primarily aimed at military personnel who often are mandated to exercise together. Would getting out of mandatory physical training be incentive enough to not drive and to conduct one's own physical exercise commute?

### *Scenario*

You are attached to a command that requires you to exercise for one hour at least three times a week. Typically everyone drives on base, exercises, then drives off base for a shower and breakfast and then drives back on base for duty. To reduce congestion and the number of people taking off base showers, the command said you could bike, run, or walk to base and that would count as your physical training for the next day. **What do think the results of this policy would be?**

### *Results*

Negative: uncooperative weather, impossible to track, loss of accountability, monitoring and enforcement would be difficult, the real issue is behavioral - people want to shower and eat off-base prior to reporting for duty, and the new policy doesn't address that preference, this would be most effective for the portion of the population that already remain on-base to shower after physical training (PT), current showering facilities on base are not adequate to support this option, there are many personnel that do not or will not shower in a public shower for fear of foot fungus and privacy issues, people live too far away in most cases, the area isn't setup to support many trails, and riding/running on some of the roads to base is not pleasant, the PT program would be undermined.

“Also, I wouldn't ride a bike along the major freeways; it is way too dangerous. I just went to a memorial service yesterday for a man who was hit while biking.”

Positive: more would participate, it might help reduce congestion, if the exercise is a requirement, then so is not driving off base for shower and food.... after initial grumbling about PT requirements....I think that they would accept it.

Bonus: go home an hour early, that would work provided that the breakfast was free, if I have to exercise at work and had the time off I would use the shower at work, civilian workforce would not participate in an exercise program unless shower facilities were available.

### *Discussion*

General consensus is the negatives far outweigh the positives. This doesn't look like a good fit for Bremerton, maybe JBLM would be a better fit.

### **Scenario 7: NON-MONETARY – No Vehicle Policy**

#### *Concept*

In my own experience with Guam and not being allowed to have cars, I thought this would be a pointed question that would force respondents to have to give up their on base parking access. Due to security and safety measures, some DoD areas on bases are already privately owned vehicle (POV) exempt.

#### *Scenario*

Beginning tomorrow, no privately owned vehicles will be allowed on base ever again.

#### **How would this impact your life?**

#### *Results*

Employee loss: I would say the command doesn't care about getting the job done and I would quit and find a place who cares about the job, I would look for employment elsewhere, would be impossible to come to work, bring about a great expense and would probably have to find new employment after looking at the numbers, I might look for another job.

“I would retire. There would be a sudden brain drain of people who are eligible for retirement. Congressional inquiries would escalate. Productivity would be greatly reduced as the disgruntled workforce would spend more time complaining about finding a parking place and the exponential rise in parking costs outside the base.”

Longer commutes: it would take at least 1.5-2 hours to get to and from work, I will have to get up at least an hour and a half earlier to get to public transportation to be on time to work, this removes three hours of my personal time a day that I would consider unjust and would want to be compensated for, add ~1 hour to my day to ride mass transit.

Alternate modes of transport: leverage family members for daily drop-off and pick-up, the command would have to find alternatives for their employees, I would expect transit options to be available in case of a family emergency at no cost to me, I would have security concerns about riding public transit and would expect these concerns to be addressed and not just talked about, I'd be calling a friend who drives a van-pool and beg for a seat, I would become an expert on available off-base parking and nearby park-and-ride transit options, would maximize carpool opportunities.

Consequences: impossible situation, that would cause a LOT of chaos and probably fights among sailors, vandalism and theft would probably go up, it would destroy the foundations of Bremerton, daycares would be affected, the NEX and Commissary would be affected, the people who live on base couldn't park here, fewer DUIs at the gate, grievances would be filed with the unions and unfair labor practices, the troops who live on base would be hurting, retirees would have no commissary, no medical, no dental, I would start buying vacant property outside the gate, when the boss wants to know why I can't stay late, he would already have the answer.

### *Discussion*

This is not a recommended solution and it never was intended to be. Though this was never intended to be an implementable solution, six of the sixteen respondents claim they would quit, retire, or not show up if this was exercised. Most of the remaining respondents (who didn't quit) would suffer a longer commute and/or take alternative modes of transportation. The point should be taken that this gauge should not be turned too quickly or employees would also take drastic measures.

### ***Scenario 8: JOBS-HOUSING – New Family Housing Recommendation***

#### *Concept*

One strategy to reducing automobile dependence is to shorten the gap between where you live, work, shop, and play. With families moving into Bremerton every year – why are they not moving right next to the base? Are they moving into suburban areas because of crime, school districts, spouse's job location, because they want some distance from base, better housing? I selected two factors – proximity to the base and good schooling to see what the results would be.

### *Scenario*

You are sponsoring a new family moving into the area, they want to live close to base and in an area with a good school district. **Where would you suggest they move to?**

### *Results*

Non Bremerton: Central Kitsap (5), Port Orchard (3) - would be a good option for closeness to the base, but their school district is not as good as it should be, Silverdale (2) - better school districts, but more of a travel, North Kitsap (2), Poulsbo (2), Bainbridge Island (1) - has the best schools and an existing bus to PSNS Tracyton (1), Mullinex Area (1), Seabeck (1), South Kitsap (1), Gig Harbor (1) - has better school districts, but is more of a travel, Keyport (1).

Bremerton: On base (1); there are no "good" school districts within walking distance to the base, so I'd recommend areas along good transportation corridors (highways, major road, public transportation) for quick access to the base (10-15 minute drive); no military base has a good school district around it, just lots of crime and low property values; I would suggest staying out of Bremerton completely.

### *Discussion*

Strongest recommendation by far is Central Kitsap, especially if you add in other central areas like Silverdale, Seabeck, and Bainbridge Island. Port Orchard, however, is second, because of its proximity to the base, but suffers because of its poor school district. It is pretty clear that Bremerton has a long way to go in improving its attractiveness to families moving into the area. The base leadership could look into ways to improve both actual city qualities (e.g., low crime, better schools, etc.) and

perceived qualities (e.g., cleanliness, real estate prices, etc.). Jobs-housing balance, without a coordinated city/base effort, will continue to pattern after “suburbia” – better houses, better schools, lower crime, and willing to deal with a commute.

### ***Scenario 9: JOBS-HOUSING – Increase Housing Allowance Near Base***

#### *Concept*

This is out of the commanding officer’s hands, but I thought it was a worthwhile question to think about ways to increase density around the downtown Bremerton area, the ferry landing, and the base. If the base valued the properties in the immediate vicinity of the base, others would as well. This was also targeted at military families that receive a housing allowance that is dependent on their rank, location, and dependents. This incentive would only be a location factor.

#### *Scenario*

To encourage military members to live closer to base, all service members moving into the area will be given an additional \$1,000/month for housing to live within a 10 minute walk from base. To be fair, the base housing department offers to cover the moving costs if any current members want to take advantage of this deal. **What are your predictions about the effectiveness of this offer?**

#### *Results*

Positive: I think too many people would be trying to find places that close to base, many would be interested, I'd start buying homes to rent close to the base, if there is housing within 10 minutes I think it would work, very good...housing costs near base will climb, crime in these areas would go down.

Effectiveness: very effective, 90-95% effective, marginally effective, it is hard to say, sounds effective but...

“...living within 10 minutes from the base does not address the behavioral change required to reduce automobile use to the base. Right now there are

service-members living in the BQ who drive less than half a mile to a closer parking spot just to save a couple of minutes walking time.”

Negative: I think the government would lose money on this program, my husband is in the Army and works at Ft. Lewis so we live halfway between both bases, I think this would be somewhat discriminatory toward dual-income households where work isn't available for one member near the base, the area around Bremerton is pretty nasty, they would enroll their kids in private school and mom would carpool them.

“The city of Bremerton is way more costly and we have a serial killer in the area! Not everyone wants to live in town, many like the rural lifestyle - where it's quiet and serial killers aren't running loose. Some even have horses or other animals they raise or they grow large gardens instead of buying from other areas.”

Housing Market: the area can't support that influx, there is a finite capacity in the market for available housing near the base, if demand is too high, prices will rise and the \$1000 will be a less attractive incentive, available off base housing near a base is already nonexistent, providing an extra \$1000 would only increase rents in the area by \$1000, the current community assets for housing do not support this, if the housing was available, personnel would take them up on the offer, as soon as more money is available for personnel to utilize, prices will go up, supply and demand laws, there is not enough infrastructure for the housing near PSNS.

### *Discussion*

Mix of effectiveness, positive, negative, and housing comments paints a blurry picture of support and true effectiveness. Most of the concerns are with not enough housing near the base, but an increased value near the base could possibly spur a housing market, much needed by Bremerton.

### **Scenario 10: JOBS-HOUSING – Increase on base housing**

#### *Concept*

This is another strategy for increasing the number of employees living near their place of employment. I was looking for characteristics that should go into the planning of future on base housing.

### *Scenario*

Congress just set aside some money for this base to make enough on-base housing for 80% of the families assigned here. As part of this exciting pilot program, you have been selected to be part of the committee to recommend what types of homes and amenities should be included in the plan. **What would you recommend?**

### *Results*

Urban Design: more land, townhomes, some apartments for E-4 and below, build apartments instead of houses, single family dwellings, the base would have to demo most of the current housing to afford room for high-rise housing structures and parking, homes should be set up in tight neighborhoods, placing multiple families under one roof to consolidate space and encourage a sense of community among dependents.

“I would promote a new urbanism type development, with sustainable mixed use facilities designed to promote a sense of community and encourage pedestrian use. Something similar to the "walking campus" feel of the Capodichino base in Naples Italy.”

Community amenities: gas station, separate pool, non-profit coffee shop, on base market, day care, easy access to schools, ball fields, parking, regular bus service on base and to primary shopping areas off base, allowed to drive our cars on base to go to our homes, commissary, NEX, gym, restaurants, before and after school care for older kids, safe play areas, a minimart style store nearby, a center recreation area.

Unit amenities: make it nice, modern, somewhat upscale, high end appliances, counter tops, cabinets, at least 4 bedrooms.....nice kitchens and baths, homes would be LEED Gold qualified, electric ports for plug-in vehicles, grey water recovery for native/naturalized/xeriscaped landscaping, garden waste

composting/paper/cardboard/foodwaste recycling, daylighting, solar panels to preheat water, ground source heating.

Other comments: waste of money, morale killer, most civilized dependents do not want to live on base, go PPV<sup>16</sup>.

### *Discussion*

Fifteen of the sixteen respondents had positive comments and see value in increasing on base housing. The PPV option may be the most expedient way to move forward, especially with the high dollar amenities necessary to attract families who have the freedom to live in the suburbs. I think what I was most pleasantly surprised by was the virtual consensus that not only would the on base housing have to increase in density, but that so many respondents recommended ways to increase the density on base. Not that the base should look at 80% on base housing, but this scenario seems to have the great amount of promise.

### **Scenario 11: URBAN DESIGN – Bike City**

#### *Concept*

With much of the literature recommending other non-motorized forms of transportation, I decided to focus specifically on the bicycle. By proactively building a bicycle network and infrastructure, the base and the city should benefit from decreased automobile dependency.

#### *Scenario*

The city and the base have joined up to create the most bicycle friendly community in America. A significant bicycle network, including bicycle lanes, bicycle racks, lockers, showers, and other bicycle infrastructure has been built everywhere you look. Even food vendors are getting involved, giving free coffee, juice and snacks to bicyclists.

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<sup>16</sup> Public Private Venture – the government allows a commercial developer to build housing on government land with a (typical) 99 year lease and an agreement that a certain percentage of units are to be rented out to military personal at the local housing allowance rate.

You've just won a new bicycle yourself. **What else would have to happen to convince you to ride your bicycle to base?**

*Results*

Better climate (6), safer (4), live closer (4), nothing (3), not going to happen (2), terrain (1).

“gas would have to be \$10.00 a gallon”

*Discussion*

Two of the 16 will never ride a bike and 25% of them currently live too far to bike in. For the other 10 – weather and safety are the primary concerns. Looks like a good pilot program goal – at least worthy of discussing with planning and the city.

**Scenario 12: URBAN DESIGN – Pedestrian Focus**

*Concept*

Since WWII the base seems to have begun catering to the car in its urban design efforts over the past seven decades – a pattern not too easy to change, but one that does not need to keep going. To move the urban design mindset from that of the car to that of the pedestrian, I'm asking what needs to be done.

*Scenario*

The base has wide roads, parking garages, ample free parking – encouraging or even requiring you to have a car to get around. The Navy has funded a study to make this base completely walkable, meaning you don't have to have a car to get around. **What would have to be addressed to make this a reality?**

*Results*

Transportation suggestions: peripheral transportation or parking, options to transit across base extremities, get consumer orientated drivers, all vehicles should be parked in or near the gate with buses transporting people to central areas and people walking

from the central area to specific locations, transportation loop around the base the stops at all major areas.

Automobile need: it doesn't mitigate the fact that people like the convenience of coming/going as they please, having vehicles moving about the base should be avoided, how do you drop off babies at the childcare and get your groceries to your car, this is not a family friendly idea, \$5 for a gallon of gas.

Urban Design: distance of workplace to facilities, it works in Washington D.C., primary base amenities be centrally located in a hub with "mini marts" strategically located throughout the housing area, possibly designed in a wagon wheel fashion, nice trails that aren't loud with traffic.

"The base is almost too big for this, especially if I have to carry my gear from one site to another. Many years ago the base allowed tri-cycles with baskets...please bring them back. They can be 'highlighted' for safety and are much more stable than a bike. Give them fatter tires for safety."

Other comments: I'm already so busy that I don't leave my desk for lunch, get rid of the waterfront and waterfront security, deal with wet NW weather, if the base has all this infrastructure what is the motivation to ban cars, sounds great.

### *Discussion*

There is a general realization that we live in an automotive dependent society and that we cannot immediately cut out the car. Looks like support for a street car, shuttle system, or other transportation method between key areas on base. Tiger team should look at bringing tricycles back.

### **Scenario 13: MONETARY – Paid Parking**

#### *Concept*

This scenario is from Donald Shoup's big concept of tackling free parking – even sacred areas like on base (Shoup 2005). Would a daily cash outlay for something you've taken for granted incentivize you to reduce driving?

## *Scenario*

Due to budget limitations and traffic congestion, the base just received approval to charge a parking fee on base. They now have to decide how much to charge on a daily basis. The amount needs to be high enough to make people reconsider driving on base, but low enough that if someone had to drive they could afford to park for a day.

### **How much should they charge for parking? Why?**

#### *Results*

\$5 (5)<sup>17</sup>, \$100 per month is enough of a hardship to make people reconsider driving every day, but won't necessary break anyone who MUST drive every day, reasonable for a day, but \$160 a month is too much for most folks, one dollar less than in town.

\$3 (2), It's a flat fee - the people who are really persistent will pay it, the people who can't afford it, will carpool.

\$1 (1) I think the fee should be equal to the cost to construct and maintain the parking facility. If a 500 stall parking garage costs \$5,000,000.00 to build and \$10,000.00 to maintain annually; the garage is expect to be usable for 75 years the cost should be about \$1.00 a day to cover cost and have extra for backup.

Other (3): it should not be more costly than the local parking off base, I think the fee should be based on wage and benefits, this way it would be fair to all, percentage wise, and should also be based on if an individual lives on base, why not charge a toll at the gate, I can buy the easy pass and keep driving to work.

\$0 (5) for those who can't reasonable commute, we are already under paid, free parking at a base is a fundamental benefit for government employees, if you want, charge the contractors for parking, I would look for work elsewhere, this would make recruiting difficult, incentivize, don't penalize,

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<sup>17</sup> One respondent said \$4-5, but are included in the \$5 grouping.

“This option would be viewed as punishment for those that could not accommodate other options. This would cause personnel to try and undermine the system and cause other issues for the base that would cause costs to the base and the personnel that committed the offense. Laying the burden on the workforce is never a good idea and comes with unexpected results.”

### *Discussion*

The overall average of the sixteen respondents is \$2, but the comments tell a much different story. Five respondents are clearly against charging for parking, one even claiming that this is a “fundamental benefit.” I thought there would be a much higher backlash, but with five respondents also willing to pay \$5 for the luxury of parking on base, this raises a balance worth questioning.

### **Scenario 14: MONETARY – Monthly Non-SOV<sup>18</sup> Stipend**

#### *Concept*

Borrowing from the Seattle Children’s Hospital case study, employees would receive a monthly stipend if they have less than 20 days driving alone per month to base. If they needed to drive to base all 20 workdays a month, their pay would not be affected, they would just not get the extra stipend money.

#### *Scenario*

At the gate, as you come in, your ID will be scanned either as driving alone or other. Every work day that you come onto base and you are scanned other (i.e., carpool, bus, bicycle, pedestrian, etc.) you will receive a small amount of money as a reward for not driving alone. **How much should this reward be? Why?**

#### *Results*

\$2-5 (5) enough of an incentive to encourage people to find a way to commute, \$100.00 a month, enough to make it worthwhile but not enough to break the bank,

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<sup>18</sup> Single Occupancy Vehicle

should be tied to the capital cost of maintaining the infrastructure, paid quarterly so the effort feels worthwhile with a decent lump sum.

\$0.50 (1) this fee is small enough that it won't be a HUGE financial burden on the Navy, but big enough that it will add up for the travelers.

Other (4) that's hard to say, it depends of many factors, things like how long you stay at work, what time do you come to work, what time do you go home, how many people are with you when you get credit, I thought there were budget concerns, this option would require a survey of cost versus savings to the base and the person, personal opinion should not be the factor driving the reward for this option, what about motorcycles and micro-cars, give me time off per 'scanned other' so in 2 weeks I get a day off.

\$0 (5) unless commuting is equally available for everyone, people should not be treated like children and given money rewards, we have too high a national debt, sounds too much like big brother to me, not interested, I don't think cash is a good reward, most people on base are semi-well off with their salary.

### *Discussion*

The results are fairly balanced between zero, \$2 or more, and other. Maybe more robust commercial examples would help convince more employees of an understanding of this stipend.

### ***Scenario 15: MONETARY – Local Toll***

#### *Concept*

This strategy is clearly something off base and out of the base leadership control, but a monetary incentive could be used to reduce automobile dependency.

#### *Scenario*

You drive along a primary roadway every day to base and there is really no other practical way to get to base except to drive on this road. You find out that the road, due to congestion, has instituted tolling for single occupancy vehicles, but have not yet

firmed up the pricing scheme. You have been asked to give your recommended toll price that would convince you not to drive alone. **How much should the toll be?**

**Why?**

*Results*

\$5 (2) could not afford it and would have to find other means or job, whichever is more advantageous.

\$3 (2) the people who are really persistent will pay it, the people who can't afford it, will carpool.

\$2 (1) will make people consider alternatives.

Variable/Other: (3) tolls should be based on time of day, if driving during periods of less traffic it should be less than driving during period of high traffic, the toll should be a factor of cost to maintain the road between two points, the factor should be determined by committee, ask the 520<sup>19</sup> commuters, there is always another way, can a price be put on the peace of mind that comes with a relaxing drive alone, will I get charged on the weekend when I need to go into town or the commissary/exchange or just during commute hours?

\$0 (8) I have tried but I can't find someone to commute with, I have already paid for this road with all of my taxes, with the rising cost of fuel I think ride sharing will become self-motivating where personal requirements permit, we pay a lot of taxes for the roads, they need to stay open.

“This option would cause secondary roads to become congested and would have adverse effects on neighborhoods and the surrounding community. Many are limited on what expenses they can incur before resorting to different means of dealing with an issue. This usually leads to other problems...laying the burden on the workforce is never a good idea and comes with unexpected results.”

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<sup>19</sup> State Route 520 recently started a toll across Lake Washington in late 2011.

## *Discussion*

With 50% recommending zero – using tolling solely as a deterrent to reducing automobile dependence is not recommended.

### **Scenario 16: NON-MONETARY – Wait Time**

#### *Concept*

Time seems to be an important benefit of driving – what if driving caused you to waste more time. I couldn't think of a better, more realistic scenario, I just remember September 12, 2001 (the day after September 11, 2001) and all the bases increased security measures to delta – meaning every vehicle was to be inspected and an expected wait time of 5-7 hours.

#### *Scenario*

For increased safety and to deter too many people from driving, the commanding officer has increased the base security level to Delta. This will mean that every vehicle coming on base will have to be inspected thoroughly and the wait time could be in the hours to get a vehicle on base. Pedestrians, bicyclists, and transit riders, however, just have to show an ID card and can quickly gain access to the base. **How long would you be willing to wait to be able to bring your car on base?**

#### *Results*

As long as it takes (3) if it takes too long, the Navy is gonna have to pay for it by increased use of time allowed or admin leave.

20-30 min (2) I would then look into telecommuting, this also brings up the problem of where people park even to take the shuttle onto base, is the Kitsap Mall really going to allow hundreds or thousands of cars to park there all day? I don't think so.

5-15 minutes (4)

0 minutes (2) I would ride, during FPCON Delta only mission essential personnel come onto the base, I would telework.

Opposed (5) if the base co put the base on security level delta for a non-security reason, he would be relieved of command, and the people affected would see to it, it's Uncle Sam's dime, do they really want to keep people off the deckplates, I wonder how this would affect production, this option would cause extreme burden on the portion of the workforce that does not fit the common mold of this particular case, the administrative burden on supervisors for personnel arriving late to work would increase exponentially, I don't think this would pass legal review, perception of profiling, I would sit in the line on principle and be late for work, if the commanding officer doesn't want the work done than I would go home and turn in my resignation.

### *Discussion*

The scenario is not recommended. The strong opposition to this strategy shows that implementing force protection level delta, solely for the purposes of reducing automobile dependency would cause the CO to be relieved of command. If the wait time at the gate, however, regularly is over a half hour due to high traffic and congestion, it looks like people may consider telecommuting or taking alternate forms of transportation.

### **Scenario 17: TRANSIT - Navy Bus Service**

#### *Concept*

This would be a proposal to have the Navy actually pick up employees, much like Microsoft, worker/driver, and school or church busses do.

#### *Scenario*

In an effort to increase morale and productivity, while saving service members car costs, the Navy began routing busses, equipped with wi-fi to pick up all employees. The best part is, once you get on the bus, your clock starts and you can count your commute time against your work time. The Navy's goal is for 80% of employees to use this service, so even a free coffee and snacks are provided. **What else should be added to this service?**

#### *Results*

Sign me up (7) You got me at "pick up all employees". If this were available, I would already be using it, sounds great, I would be interested in this, my car will stay at home.

Add (3) the navy would also need to provide transportation for personnel to keep medical appointments etc., drop offs for child care, free parking at the pickup points, security, covered waiting areas, transit options available in case of a family emergency at no cost, transportation is timely and accounts for special shifts (personnel that work outside normal business hours), bigger seats as some workers a quite large.

Opposed (5) this wouldn't work for the Navy because we don't work on "time clocks," we get paid 24/7 to do a job, if the job isn't done, we don't go home, so this service is moot, way over the top, this would defeat the purpose of coming to work, if the navy has enough people to waste employee productive time than they need to lay some people off, I like this idea, but find it financially prohibitive, this is an absurd waste of tax money, I would call the Fraud, Waste and Abuse hotline, this will reduce the budget and the number of folks that support a project, and increase the price and length of time to complete a ships project...don't think NAVSEA/SSP will approve...

### *Discussion*

The biggest opposition to this proposal seems to be financial and the issue with the time clock starting upon getting on the shuttle. I recommend looking into this option through the existing worker/driver program with Kitsap Transit.

### ***Scenario 18: TRANSIT – Zipcars on base***

#### *Concept*

The Navy already has a fleet of vehicles for official business, but if someone were to take transit to the base and needed to run an unofficial errand, zipcars can be rented out for about \$10, providing a solution for a current gap in the transit solution. I was using zipcars more as an introduction to a new concept than promoting a commercial entity.

#### *Scenario*

Zipcar (an hourly car rental club that pays for gas and insurance ~ \$10/hour) has asked that a fleet of cars be assigned to a parking lot on base to allow base employees the use of a car during the day if they need to run a non-official business errand but carpooled or used transit to get to base. The cost of an overnight use of a zipcar is also only around \$36 if someone needed to take the car for the night. **What concerns do you have about zipcars being located on base?**

### *Results*

Parking: they would be taking up valuable parking spaces, taking away more parking, and parking on base poses a security risk, so park then out in Montgomery lot after you have installed the gates on the west side of the lots, the cars won't have to be inspected.....

Anti-terrorism/Force Protection: bombs, security at the gate, boom, AT/FP.

Availability: Also, what do you do in case of emergencies, what do you do if all the cars are taken, WA state only allows you to have kids in childcare 10 hrs. per day, I work 8-9 on average and commute approx. 35 min. each way, if a car isn't available, I will be in violation of state law, have to pay significant late fees to the daycare, and will have a very sad & upset daughter, having an adequate number to cover peak demand.

“What about official business driving? I have to do that all the time and we are unable to maintain a government vehicle due to budget concerns. I drive my own vehicle to offsite meetings...all the way from Whidbey to Keyport to Bangor to Manchester.”

No concerns: I love the idea; I think this is a great idea.

Opposed: this option does not make sense, it does not cost the average person \$10 an hour to operate their personal vehicle to and from work or \$36 a day even with insurance added in, this option would not make my top 20 list of cost savings ideas, let personnel do personal business on their own time, you come to work to work.

### *Discussion*

Concerns included security, availability, parking, and general opposition, but what the comments are showing is more of a lack of experience with zipcars than with the concept. With six out of sixteen strongly behind the concept (e.g., “love the idea”) it is worth looking into. The Navy should pursue a relationship with zipcars (or other similar commercial options) and a team should look to see if off base parking is better than on base parking.

### ***Other suggestions***

I then asked if the 16 respondents had any other suggestions. Here are some other suggestions for reducing automobile dependency:

Encourage “public-private ventures for centralized parking and/or transportation alternatives. Could be “hubs” located on Federal property or at key transportation nodes throughout the community.”

“the shuttle lot is a good option”

“Perform a case study of the past 10 years concerning transit and parking issues in the area that is being considered for transit and parking upgrades. Allow for community input (Local community restrictions have stopped previous efforts by the Navy to implement newer transit and parking initiatives). History has proven that the hardnosed push for change concerning transit and parking has failed and that the burden pushed upon the working class has caused productivity to suffer along with the budget of the individual. This is a paradigm issue that will not be easily changed overnight. Society is very slow to change. Many have stood in the way of progress (city, county and others) only on the principle that the change did not benefit the surrounding communities with increased revenues or jobs. There is no single point solution to this issue.”

“the burden should not be pushed on the individuals that are trying to get to work on time and support their families.”

“Take care of your workforce and they will take care of you. Successful corporations do this and they are leaders in the market. Let us learn from their successes.”

“Can mass transit be successful without high density housing?”

“Require all active duty to sleep in their workspace at least two nights out of the week “

“allow active duty to participate in RDO, alternative work schedules, and work from home programs”

“Have a website where you can send in your address and times at work and the computer makes matches for carpool or bus and gets back to you with options.”

“Buy the strip of land on the northside of the base and build off-base, but secured parking.”

“Build parking garages all the way north on the Montgomery lots and assign to civilians, including the handicapped and NMCI contractors and contracted employees. Then reassign all the parking south of Farragut to active duty, including F lot out by inactive fleet and let them patrol it themselves.”

### *Discussion*

If nothing else, this survey opened up some creative options for addressing automobile dependency: sleeping at your worksite, vanpool website, military regular days off, social justice, increasing density, shuttles and public private venture transportation options. I would not recommend increasing parking capacity or sleeping at worksites. I do recommend looking into public private venture transportation options and a vanpool website – these are relatively low cost with potentially a high return.

## **Chapter Six: Generalization and Synthesis**

### **Identification of Commonalities**

The three strongest commonalities that continued to appear throughout the scenarios were (a) the value of parking, (b) keeping the car, and (c) increased transit service. Parking and the right of parking has a very powerful force that respondents were willing to quit over it. No respondents offered to get rid of their cars for individual reasons, but collectively because their current lifestyles are built around the luxury of having a car. Increased transit service (i.e., schedule, routes, dependability, etc.) was mentioned repeatedly – leaving a massive void in the early stages of reducing automobile dependency. So tying these three elements together, all respondents are keeping their cars, are willing to fight for parking, and need transit services to substantially increase before considering changing current transportation modes.

### **Pecking Order**

To establish a compilation of recommendations based on the feedback from the respondents, I looked for a way to organize or rank the approaches. If I had something like an alpha dog determination, that would work. I settled on God's design for the chicken's pecking order. The scenarios with the least amount of pecking (negative comments) would then float to the top, while the scenarios that received the most pecking would fall out at the bottom.

I gave each respondent 17 points, 8.5 positive and 8.5 negative. I then counted the number of negative, mixed, and positive comments each respondent gave to the 17 scenarios and divided their points accordingly. A respondent who is very negative across the board, for example, will not strongly affect "good" ideas too badly as their 8.5 points has to be divided between more scenarios. On the other hand, if someone is overly positive, their 8.5 positive points will be watered down as well, so "bad" scenarios are not too highly praised. So beyond effectiveness in achieving a specific goal, it is important to ask how detrimental v. productive a specific approach is (i.e., supported). The pecking order (i.e., ranking), from Table 5 of the most supported to least supported, of the seventeen scenarios are as follows:

1. Increase on base housing 22.84
2. Local transit improvements 8.98
3. Liberty incentive 6.65
4. Pedestrian focus 4.51
5. Navy bus service 4.43
6. Monthly non-SOV stipend 3.79
7. Paid parking 3.77
8. Increase housing allowance near base 2.31
9. Wait time 0.54
10. Zipcars on base (0.34)
11. Local toll (0.77)
12. MILPASS (1.73)
13. Physical Exercise Commute (5.73)
14. Bike City (7.00)
15. No vehicle policy (12.21)
16. Sell car take transit (14.24)
17. New family housing recommendation (15.80).



## **Observations**

Though approaches like no parking on base and recommending new families to live in Bremerton would be effective to reduce automobile dependency, they are not supported and thus not effective. To be effective, an approach must not only reduce automobile dependency, but be supported by base personnel. Within each of the five overarching categories of approaches, I look to discuss the most supported approaches and effective approaches.

## **Monetary Incentives**

Of the monetary incentives, the CO providing a monthly non-SOV stipend came out slightly ahead of what was virtually a tie from paid parking. Both of these are in the top seven of the recommendations. A pattern with these two rests with the conceptual aspect – people who were against one of these were generally against the other and those who commented positively about either one were also generally positive for the other one. The scenario with a local toll was taken negatively as several respondents commented about taxes and missed the point as a disincentive to driving.

## **Non-monetary Incentives**

Of the non-monetary incentives, the liberty incentive came in the strongest. It ranked third overall, falling only behind on-base housing and local transit improvements. Falling near the middle was the wait time approach – though effective at reducing automobile dependency, it had very strong negative opposition logically and operationally that would be more detrimental than productive. The physical exercise commute didn't resonate well and agreeably would be difficult to enforce. The worst non-monetary incentive was for the CO to shut down the base to private vehicles – I assumed this would, but wanted to see the local reaction to such a bold and effective initiative. This was the most effective initiative, but the impact to the command would be more detrimental than productive as six of the sixteen respondents said they would quit, retire, or basically find somewhere else to work.

## **Urban Design Approaches**

Of the urban design approaches, the pedestrian focus was much more palatable than the bicycle city approach. The value of pedestrian access came in fourth overall and

would be more productive than detrimental. Though the bike city concept had several strong supporters, the overall support, thus effectiveness is negative and not recommended.

### **Transit Related Approaches**

Of the transit related approaches, local transit improvements was the most supported and second overall. It seems like any efforts the CO would make with local transit to encourage increased service would be supported. Those opposed to transit were more related to perceptions and personal choice than opposed to the concept. Also strong in the transit approach was the Navy bus service – many schools, businesses, and churches do this regularly. Though funding was brought up as a concern, it was generally supported in concept. Both zipcars and the MILPASS concept showed pockets of enthusiastic support, but suffered from overall weak support and will need increased commercialization before becoming palatable to the base personnel. The worst transit option and second from the bottom overall was to sell your car and sign up for TIP. I should not have included the concept of selling your car as I was jumping even my own story – you probably have to rely on transit for a while before willingly giving up your car.

### **Jobs-Housing Balance**

Jobs-Housing balance owns both the overall strongest and weakest approaches. Of the jobs-housing balance approaches, the increase of on base housing was most supported and overall was number one, by far. Only one respondent commented negatively about increasing on-base housing. This overwhelming positive support may be due to the fact that there already is on base housing and this would be seen as just natural growth and not some new concept that would need to be tested. There is still some concern that people on base would still drive, so the effectiveness may not be as strong, but the support is clearly the strongest. My concept to increase the housing allowance near the base was supported, but not nearly as strong as building on base. The least supported approach to jobs-housing balance was to recommend Bremerton as a place to live to be near the base and in a good school district. It could be that this is a true statement, so only one out of 16 respondents would recommend a new family

to live in Bremerton – and that respondent said they would recommend that the new family live on base.

## **Recommendation**

Based on the literature, case studies, interviews, and this survey, I recommend a phased approach that starts with command endorsement and ends with a continued program that uses trial and error to maintain the automobile dependency reduction program.

### **It begins at the top**

If the command leadership doesn't build a culture of wanting to reduce automobile dependency, most employees will continue to be dependent on their automobiles and the time for putting effective measures in place will become more of an emergency or reaction than a proactive, calculated approach. A recent example of this is in Whidbey Island, where the CO, an avid bike rider, was instrumental in creating a bicycle master plan for the base (Huizhinh 2012).

### **Phase I – Team Establishment**

The base should set up a funded team tasked to come up with goals, metrics, and a comprehensive plan for the base to address automobile dependency (or a tiger team of motivated volunteers if funding is limited). This team should begin the coordination with the unions, shipyard front office, Naval Base Kitsap-Bremerton front office, security, parking, planning department, local transit, the City of Bremerton, and another agencies and departments as necessary.

### **Phase II – Focused Community Involvement**

The team should pursue specific pockets of people who are already using alternative modes of transportation (e.g., pedestrians, bicyclists, transit, worker/driver, etc.) and begin charrettes<sup>20</sup> to identify areas of improvement for current users (e.g., dangerous crossings, new schedules, etc.).

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<sup>20</sup> Charrettes are public discussions about specific ideas and plans. The facilitator would usually have drawings or maps up to discuss various options and the community attendees would be able to comment, sketch, and lead decision makers in an effective, supported, and wise direction.

### **Phase III – Potential Initiatives**

The team should then compile recommended improvements to transit, on base infrastructure, policy changes, and suggestions for outside the fence line. Based on the survey, here are seven approaches that are likely to be effective at reducing automobile dependency and are supported by base personnel:

#### **PPV Housing Study**

Conduct an analysis of Navy owned land to see if any near the base (or on the base with the fence line rerouted around the site) would be suitable for a public-private venture. Without getting into too many details, the concept is that the Navy would set up a 99 year lease to a developer who would make state of the art housing accessible to the general public in the heart of Bremerton. The developer would have to rent out a set percentage of units (e.g., usually 50%) to service-members at their allocated housing allowance (which has support to be increased near the base). The rest of the units are then able to be rented out at market rate to employees of the base and any other person, even if they are not associated with the base. This approach has the potential to decrease automobile dependency, increase housing near jobs, increase density, increase the Bremerton tax base (thus increasing the local school funding), and spur on Bremerton's comprehensive plan.

#### **Local Transit Coordination**

Express increased interest in coordination between the base and local transit authorities. The CO should increase awareness to the fully funded TIP incentive and could encourage the tiger team to seek out funding to implement the identified transit improvements. If the MILPASS had been supported stronger, this would have been an excellent package (i.e., here are the 3-4 recommended transit improvements and oh-by-the-way, here is the money to make them happen). The strongest supported transit improvement was Navy busses – depending on funding constraints, this could go down various paths. Though described as a high-end school bus, it may make the most sense to increase the routes and times of the successful worker/driver busses and then to regularly review the routes and inform new employees of these options.

### **Liberty Reward Pilot**

The liberty incentive could be piloted at a smaller command to identify any operationalizing issues with the concept. If there do not seem to be any issues, or those issues are resolved, the day off for every 40 days of commuting to work without driving alone could begin to be replicated elsewhere.

### **Pedestrian Charrette**

The base CO should push for a pedestrian focused urban design of the base (i.e., a pedestrian master plan). The charrette would be able to identify dangerous areas of the base for pedestrians, access improvements, and recommended sites for future pedestrian friendly construction.

### **Parking Pays for the Non-SOV Stipend**

Since both a non-SOV stipend and paid parking was supported, and have proven to be effective, why not combine them? Depending on the legality of the paid parking concept, the Navy could try a pilot program in one of the base parking lots or garages. For the pilot program, a group of employees are given both a unique window decal (on all their cars) and a card to access a parking lot or garage on base.. For these pilot employees, it is free to park in the parking lot or garage and these employees will be given a ticket if they park anywhere on base except the lot or garage. Anyone that can come on base is welcome to park in the lot or garage, but it will cost them \$2 a day to park (respondent average). The money from the parking fee goes to pay for repairs, money collection services (this person can also verify carpools), and to pay for the non-SOV stipend. At the end of every three months, the card reader calculates how often each of the pilot employees parked in the lot or garage. A stipend then is sent to each of these pilot employees accordingly.

### **Shared Vehicles**

Another idea is to look into car sharing and bike sharing opportunities. All of the university case studies had car sharing (e.g., zipcar) and three of the four universities had bicycle sharing. There seems to be some concern with security for car sharing services, so this may work better as a pilot test near the ferry landing so that people from the base, coming from Seattle, and who work downtown Bremerton all could use

the service. Bike sharing has had mixed results, but if the tiger team can look into the most successful models, they may find a suitable solution.

### **Tailored Transit**

New (and current) employees would be given recommended places to live based on criteria they submit (i.e., school, spouse job, bicyclist, view, affordable housing, etc.). Once the employee settles into a home the base could provide a tailored mode choice package showing bus routes, bike paths, carpools, worker/driver routes, and anything else unique to their residential location. This would also provide an opportunity to sign the employee up for the TIP incentive, be an avenue to communicate recent updates to transit, and help identify future transit improvement recommendations.

These will then go into a comprehensive plan to identify overlaps and opportunities for funding.

### **Phase IV – Trial and Error**

After the comprehensive plan is compiled and funding is being sought, based on command priorities, goals and metrics, the team should recommend incremental increases and decreases to the strategies to reduce automobile dependency.

## Future Research

This research also brought up other ideas that need further investigation, commercialization, or testing before implementing. Any good ideas in the future should come under a strict, high quality methodology that aligns with current methods and terminology (e.g., measuring distance, mode share, and control groups). These can and should align with the base's metrics and goals. Here are some specific items of potential interest for future research:

- How would a bus rapid transit in Kitsap be successful?
- Why do employees have such a personal attachment to the vehicle and the concept of personal space?
- What would have to happen for the base to implement a Good to Go toll at the entrance to the base?
- What are the impacts of a major employer providing higher housing allowances in the immediate vicinity of the place of employment?
- Why were base tricycles not allowed?
- Where should Kitsap Transit to increase routes and schedules on the existing worker/driver program?
- Why not create an internal vanpool website, independent of Pierce and Kitsap control?
- What is the interest for a public private venture regarding transportation (e.g., developer funded streetcars or shuttles)?
- How can Bremerton increase school funding and decrease crime?

## **Chapter Seven: Conclusion**

Automobile dependency is a complex phenomenon. It takes several factors to convince someone to become automobile independent, if possible at all. People are automobile dependent for many reasons, it could be because of a housing choice, limited transit, or a spouse's job location. Some people seem to want to be automobile dependent or at least have the right to be. And a third category, doesn't yet realize they are dependent on the automobile.

The base commanding officer stands in the best place to influence employees to consider other forms of transportation, at least for commuting. Of all the approaches the CO can take to reduce automobile dependency – the most effective at reducing automobile dependence are also often more detrimental than productive, thus not effective. So the most effective strategies also need to be approaches that are supported by base personnel.

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## **Appendix A – Civil Engineer Corps Officer Responses**

Between November 2011 and January 2012, I asked my fellow Civil Engineer Corps Officers in the Navy for recommendations for case studies and the best way to reduce automobile dependency for sailors and marines. Here are their responses via linkedin.com:

*If you want to reduce use of private automobiles, there have to be viable alternatives. For bases in low population density areas, there may not be any public transit off base or it may not serve all nearby residential areas. Decent, affordable housing may be in short supply near bases in urban areas, prompting longer-distance commutes. Time is also valuable - waste too much time riding a bus and a private automobile starts looking more attractive. Public transit also tends to lack flexibility - service is generally reduced at night, on weekends, and holidays. Where on base transit exists, linking it to off-base systems is a potential security problem - do you allow off base buses on base (potential security risk), set up a transfer point outside the main gate (potential easy target), etc.*

*The PPV [Public Private Venture] with homebuilders building housing miles from military bases has sealed the need for sailors and marines to purchase and utilize POVs [Personally Owned Vehicles]. There is no alternative in these cases.*

*To remedy these situations - sell the remote PPV housing and utilize the money to purchase/build housing either on base or just outside the bases these sailors and marines serve. Purchasing the real estate and building outside some bases would serve to remove blighted neighborhoods.*

*When I enlisted in 1989 there was no way my meager E1 (2 & 3) pay could support vehicle ownership and the requisite insurance. Today's pay rates are*

*more favorable and I see (very) junior troops driving nice autos or expensive trucks....the results of war zone pay incentives, retention bonuses and higher pay rates. When given enough funds, a junior troop will likely opt for the personal freedom afforded by private auto ownership.*

*Another challenge is with those living in barracks on base - they drive everywhere rather than walk (to the gym, the galley, the store, to work...). You may win some ground here with targeted convenience and incentive efforts.*

*If I lived a block from my office, I'd still have two cars and a pickup. The idea that we should wean Americans off the independence and utility that comes with owning a car seems misguided at best.*

*I did unaccompanied reserve duty in Stuttgart for 9 months in 2009. I lived on a base 30 min from the base where I worked. I rode the base shuttle to work and back. On the weekends I used public transportation (buses/trains) to go downtown or around town. Worst case scenario rented a car for road trips. Using affordable public transportation that ran until 3am was a twofold benefit. No need for a car and no need to drive after drinking good German beer. Never bought a car or used beater to drive around for the time I was there. Got some good PT [physical training] walking to the bus stop or train station. Unfortunately in the US public transportation is not set up as good as it is in Germany or the rest of Europe and you may have to dodge bullets or a knife here and there which aren't as big a problem in Europe.*

*The only places I've seen public transportation work is in high population density areas. In other words, driving has to become more of a pain than taking public transportation... it works in Europe...because they have high population densities, so traffic is bad and finding a place to park is awful. I lived in Austria for two years and never had a car, just a bicycle and my shoes. They had very reliable transportation that you could set a watch to. We used to race people in cars and we often beat the cars, because there was no traffic for subways and*

*street cars. I never saw any crime that made me concerned either. I've never experienced this type of environment in the U.S.*

*When I was enlisted (late 80's) we felt restricted to the base until we could get a car. The bus systems (on and off base) were very limited, time consuming, and did not go to locations we wanted to go. I bought my 1st car about 3 months out of boot camp and never had a shortage of friends looking for a ride. We'd share a car between 2-3 of us, because of deployments and days when we couldn't leave base. We worked it out.*

*I did have a friend or two that bought a car they couldn't afford (between payment, Ins, fuel, & repairs), but they corrected their problems and found a solution.*

*A program like ZIP car would have worked well for us, but they didn't exist then. Additionally, we were too young to rent a car (most rental companies required we be either 21 or 25 to rent.) Rental cars were also too expensive. There were busses and car pools, but these also placed constraints on our time.*

*The up-side to owning a car on a limited budget was that I took full advantage of the Auto Hobby shops on base. These lead me to new interests (car repair) which ultimately convinced me to get my degree in Mechanical Engineering. So needing a car was a strong driver in my future career path and my eventual commission as a CEC officer.*

*As an officer, I had many enlisted folks that had car issues & money problems. Most of these were more related to the expectation that they needed a new car or they didn't have the ability to fix their car. With some work and good advice, the expectations changed, new experiences & skills were gained, and folks learned how to manage their lives better. It took time and patience, but that's what good leadership is about.*

*Perhaps the problem isn't car ownership or how to limit it, but how to help young adults learn about personal responsibility (with car ownership as a major driver).*

*Between using the local base/community bus systems in San Diego and Jacksonville my buddies and I got around a fair amount more than fellow sailors awaiting to carpool with the one car owner.*

*Is this a problem?*

*Being from rural Wisconsin I learned how to read a bus schedule, connections, passes all before the internet from a New Yorker. Now, the information and destinations are so much easier to plan through the web transit sites and mapping sites.*

*Buying a bike, several as they seem to get stolen, helped get around and a great form of exercise. I actually would work a part-time job at a bike shop by biking there. The ship was full but always accommodated bringing a bike on board which really helped getting around in port calls.*

*Maybe, the military bases could adopt-a-bike loaner program like city bikes? When I was on mobilization in the Middle East there was a rack of unlocked bikes that I would repair, use and share with fellow service-members to get around (Anonymous 2012).*

## Appendix B – Human Subjects Division Exemption Status Letter

Date: February 13, 2012

PI: Mr. Joel McMillan  
Graduate Student  
Urban Design and Planning

CC: Dr. Dan Abramson

RE: HSD study #42157  
“Automobile Dependency Survey”

Dear Mr. McMillan:

The University of Washington Human Subjects Division (HSD) has determined that your research qualifies for exempt status in accordance with the federal regulations under 45 CFR 46.101/ 21 CFR 56.104. Details of this determination are as follows:

Exempt category determination: **2**

Determination period: **2/13/2012 - 2/12/2017.**

Although research that qualifies for exempt status is not governed by federal requirements for research involving human subjects, investigators still have a responsibility to protect the rights and welfare of their subjects, and are expected to conduct their research in accordance with the ethical principles of *Justice, Beneficence* and *Respect for Persons*, as described in the Belmont Report, as well as with state and local institutional policy.

**Determination Period:** An exempt determination is valid for five years from the date of the determination, as long as the nature of the research activity remains the same. If there is any substantive change to the activity that has determined to be exempt, one that alters the overall design, procedures, or risk/benefit ratio to subjects, the exempt determination will no longer be valid. Exempt determinations expire automatically at the end of the five-year period. If you complete your project before the end of the determination period, it is not necessary to make a formal request that your study be closed. Should you need to continue your research activity beyond the five-year determination period, you will need to submit a new *Exempt Status Request* form for review and determination *prior to implementation*.

**Revisions:** Only modifications that are deemed “minor” are allowable, in other words, modifications that do not change the nature of the research and therefore do not affect

the validity of the exempt determination. **Please refer to the Guidance document for more information about what are considered minor changes.** If changes that are considered to be “substantive” occur to the research, that is, changes that alter the nature of the research and therefore affect the validity of the exempt determination, a new *Exempt Status Request* must be submitted to HSD for review and determination *prior to implementation*.

**Problems:** If issues should arise during the conduct of the research, such as unanticipated problems, adverse events or any problem that may increase the risk to the human subjects and change the category of review, notify HSD promptly. Any complaints from subjects pertaining to the risk and benefits of the research must be reported to HSD.

Please use the HSD study number listed above on any forms submitted which relate to this research, or on any correspondence with the HSD office.

Good luck in your research. If we can be of further assistance, please contact us at (206) 543-0098 or via email at [hsdinfo@uw.edu](mailto:hsdinfo@uw.edu). Thank you for your cooperation.

Sincerely,

Laurie E. Berger  
Human Subjects Review Administrator  
(206) 543-3033  
[lberger@u.washington.edu](mailto:lberger@u.washington.edu)

## **Appendix C – Survey Recruitment Material**

### **Volunteers Needed for Bremerton Car-use Study**

Research is being conducted for the University of Washington, Department of Urban Design and Planning by Lieutenant Commander Joel McMillan United States Navy.

This study is looking for ways to reduce automobile dependency on and near naval installations where large amounts of single occupancy vehicles commute daily.

Potential candidates must:

- ✓ Work in Bremerton,
- ✓ Usually drive to work alone,
- ✓ Be between the ages of 18 and 85,
- ✓ Complete the survey by 24 February 2012.

The survey takes approximately 30 minutes to complete and can be conducted:

**Online** at <https://catalyst.uw.edu/webq/survey/joel316/145947>

or

**In person** by contacting Joel McMillan at [joel316@uw.edu](mailto:joel316@uw.edu).

# Appendix D – Consent Form

## UNIVERSITY OF WASHINGTON

### CONSENT FORM

#### AUTOMOBILE DEPENDENCY SCENARIO SURVEY

Researcher: Joel McMillan, Graduate Student pursuing a Masters in Urban Planning from the Department of Urban Design and Planning at the University of Washington, email [joel316@uw.edu](mailto:joel316@uw.edu) or phone (206) 708-6373.

#### **Researcher's statement**

I am asking you to be in a research study. The purpose of this consent form is to give you the information you will need to help you decide whether to be in the study or not. Please read the form carefully. You may ask questions about the purpose of the research, what I would ask you to do, the possible risks and benefits, your rights as a volunteer, and anything else about the research or this form that is not clear. When I have answered all your questions, you can decide if you want to be in the study or not. This process is called “informed consent.” If you would like a copy of this form for your records, simply print it out now or email me [joel316@uw.edu](mailto:joel316@uw.edu) for a copy of it.

#### **PURPOSE OF THE STUDY**

This automobile dependency scenario survey is part of a larger case study, looking at short term and long term methods for Navy Bases to reduce Sailor’s and Marine’s automobile dependence.

#### **STUDY PROCEDURES**

The scenario survey is estimated to take about 30 minutes. The fictional questions will describe a theoretical scenario, looking for your personal reaction – based on your current situation and your background. There is no right answer; I’m looking for your creative and honest take on the specific scenario, below is a sample from the survey:

Let’s say you are the new commanding officer of a naval base and have been given an order to cut the number of people driving their cars to your base from 10,000 to 3,000 by next month.

#### **What would you do?**

The answer field is a blank text field – allowing you to be as short and succinct, or allowing you to elaborate as much as possible. I provide several scenarios after this

initial one, based on the current research and literature on the phenomenon of automobile dependency, such as this one:

The base has wide roads, parking garages, ample free parking – encouraging or even requiring you to have a car to get around. The Navy has funded a study to make this base completely walkable, meaning you don't have to have a car to get around.

### **What would have to be addressed to make this a reality?**

Though two of the scenarios say “required” – you may refuse to answer any question simply by writing an “X” in the text box.

### **RISKS, STRESS, OR DISCOMFORT**

All efforts will be made to ensure all survey results are kept anonymous, but there is a risk that information you provide in the written answers may be so unique to your situation that others who read the results of the survey may be able to identify you.

### **ALTERNATIVES TO TAKING PART IN THIS STUDY**

If you do not wish to participate in this study, but would still like to make recommendations to the Base Commanding Officer regarding reducing automobile dependency, your suggestion should be vetted through the public works department, security, public affairs office, or the legal department depending on your suggestion. If you would like to provide me with some references, examples, or other ideas, please email these suggestions to me [joel316@uw.edu](mailto:joel316@uw.edu).

### **BENEFITS OF THE STUDY**

There is no financial or other type of benefit for volunteers associated with this study. The overall intended benefits of the study are cost savings to the 17-24 year old Sailors and Marines who are often required to purchase a car to carry out their duties. The secondary benefits include increased camaraderie, base cost savings, and increased quality of life for everyone involved on Navy Bases.

### **CONFIDENTIALITY OF RESEARCH INFORMATION**

All of the information you provide will be confidential.

### **OTHER INFORMATION**

You may refuse to participate and you are free to withdraw from this study at any time without penalty or loss of benefits to which you are otherwise entitled.

If you have any questions, please call me, Joel McMillan, at (206) 708-6373 or email me at joel316@uw.edu.

### **Subject's Statement**

**This study has been explained to me. I have had a chance to ask questions. If I have questions later about the research, I can ask the researcher listed above. If I have questions about my rights as a research subject, I can call the Human Subjects Division at (206) 543-0098. I will be able to receive a copy of this consent form right now by simply printing it or by contacting the researcher for a copy of the consent form.**

## Appendix E - Survey Responses

Question:

For example, let's say you are the new commanding officer of a naval base and have been given an order to cut the number of people driving their cars to your base from 10,000 to 3,000 by next month. What would you do?

<i>Participant</i>	<i>Response</i>
ID# 8356566	Find funding from somewhere for worker driver buses for military, not just civilians, and actually inform people about the TIP program - I had to search for info when it's supposed to be publicized.
ID# 8357627	Contract out shuttles like the Kitsap Airporter that stops at areas throughout the peninsula and Tacoma. Have them run on 1/2 hour intervals. Coordinate with local businesses if necessary to provide for parking. Also hire someone to coordinate POV commutes so that people on base can easily find others in their area who need commute partners. (I've tried the Kitsap and Pierce transit sites but they only allow you to advertise if you already have enough members for a vanpool. So, if you can't already find at least 3-5 people, then you can't advertise your need for commuters on these sites.) See if Pierce/Kitsap transit can have buses that stop at the major park-and-rides and go directly to the bases. Right now I would have to do approx. 3 exchanges to get from Gig Harbor to Bangor and it would take approx. 1.5 hrs vice 35 min. if I drive myself).
ID# 8386396	I WOULD IMPLEMENT COMPRESSED WORK SCHEDULES, INCREASE TELECOMMUTING AND INCREASE VANPOOL/CAR POOL PARTICIPATION and bus usage.
ID# 8386520	1. Determine available alternative transportation means (bus, carpool, etc) and parking (off-base). 2. Educate base personnel and solicit innovative ideas. 3. Incentivize alternatives. 4. Implement need and position based mandatory reductions (with waiver process)
ID# 8386756	This would require a substantial increase in existing city busing. You'd have to coordinate with the city. Staggering work times to be able to use existing busses more would help.
ID# 8388169	There are too many variables to give a good answer. Some thoughts come to mind other than to voice my objection on command such a big request in such short time. Cutting vehicle travel by 60% by the following month will require harsh measures such as forced car pooling, limited access or forced shift changes.
ID# 8392008	develop alternative, frequent running bus routes from various area's of the kitsap peninsula dedicated to the pick-up and delivery of personnell from and within the shipyard. teh shipyard has busses running within the shipyard regularly, and the commuter busses, however, with alternative work schedules, the commuter busses are not always conveyient.
ID# 8392035	Task a team to determine what the effect on the mission will be. look for additional alternatives to established telecommute policies, ride share etc. such as developing local work hubs in or near Port Orchard, Silverdale, Poulsbo for those who do not have to be physically present at the PSNS/IMF to perform their duties.
ID# 8392164	Keeping in mind there may be civilians involved, I would notify the local bargaining units and get them involved in the solution. Then I would involve the local transit service to discuss alternative options of getting people to work. I would do a survey of employees to find who drives to work each day, including those in carpools. I

	would offer incentives for those who drove alone or in small carpools to band together into vanpools or ride on transit buses. I would discuss options with the local municipality to contract parking or look at funding for off site parking garages/lots and offer shuttle services to worksites. There are many options available.
ID# 8392202	Approach Transportation department with the issue and figure out how to manage 7000 plus personnel and families needs for transportation to require emergency transportation if the person needs to get to the hospital for a family member that has been hospitalized or other emergencies. Also to ensure transportation is timely to account for special shifts (personnel that work outside normal business hours). Provide monetary incentives to personnel that carpool and use public transit. Petition for a Light Rail system initiative to the State legislature.
ID# 8393130	Eliminate On base parking
ID# 8393968	Allow for a flexible work week with command approval and direction. Provide a flex vehicle program for individuals who would be willing to let there vehicle go and if they had to leave base be able to rent or sign out one.
ID# 8394209	1) Immediately request more funds for buses or vouchers for mass transit 2) Institute stricter parking privileges 3) Prepare letter to your boss saying the goal won't be met in one month unless the cost of gas jumps up.
ID# 8394766	where is question #1?
	require every car entering the base to have at least three occupants
ID# 8396425	I would set up a POC to send out an e-mail to all hands stating all military personnel will find alternative means to report onto the base. All government employees that are not disabled, are requested to find alternatives to parking POV's on base.
ID# 8399085	How much money comes with the order? If I have money, then I'd do what we did after 9-11. With an Memorandum of Understanding, I'd 'obtain' remote site parking lots throughout the commuting area, post security cameras and bus folks into/outof the base.  If I don't have money, gotta deal with the unions first, because this will be interpreted as a 'change in working conditions', but I can kick non-union folks off base without much notice. But if I want employee buy-in, I must have a very good reason....and handicapped/contractors/contracted employees would also have to go as well.

Question:

A federal employee that you know was paying \$8,000 dollars a year for his car (i.e., payments, gas, maintenance, insurance, etc.), to save money he sells his car and begins using transit that costs him \$1,500 a year. Later he finds out that federal employees can receive up to \$125/month reimbursed for transit costs. He is very excited to tell you about the TIP program and tries to convince you to sell your extra car and begin riding transit. What would you tell him?

<i>Participant</i>	<i>Response</i>
ID# 8356566	I would keep my car for personal and home uses, but I would ask him more about the TIP program (if I wasn't already enrolled).
ID# 8357627	I've already looked into it and public transit would take 1.5 hrs vice the 35 min. I drive now. Also, I've been unable to find commuters who work similar hours and transit between Gig Harbor/Port Orchard and Bangor.
ID# 8386396	frig you. you can live on the dole if you like but i want the freedom to drive myself!

ID# 8386520	Even if transit covered employment needs, the car is still needed for non-work activities. So actual savings would be much less and I'd lose flexibility in covering existing work requirements (closely scheduled meetings at multiple geographic locations).
ID# 8386756	Hard to do with 3 kids.
ID# 8388169	I would tell him that transit is a bargain if you have the time. If I were to use transit My work day would be about 13 hours from the time I get on the bus to the time I get off the bus. If I drive My work day is 11 hours from the time I leave for work to when I come home. I can also perform chores on my way home or adjust my schedule working more hours one day and less another.
ID# 8392008	I would listen, however, perhaps his lifestyle is set accordingly to allow him to utilize the TIP program etc.
ID# 8392035	drop dead! i use my car for transportation other than commuting to work.
ID# 8392164	I would tell him that I live in the country, 15 minutes to the closest store, and I have no desire to sell my car. I would probably also tell him that my personal way of living and my finances were not his concern.
ID# 8392202	For single personnel that would be feasible. For a family with children this would not likely be the best option and could cause issues with transportation to and from school, daycare, doctor visits and other unexpected situations that come with having a family and children. The current transportation environment in the surrounding communities is not efficient and lacks 24/7 transportation support.
ID# 8393130	NO, need more flexibility
ID# 8393968	There is no available transit or stops close to home.
ID# 8394209	It was so hard getting a parking pass on base, I don't want to give it up. And as a renter, I'm not sure where I will be in the future and how mass transit will service that area.
ID# 8394766	public transit is dangerous and stressful
ID# 8396425	Transit system works well for many locations. It does not work well for recreational needs, a vehicle is still necessary for many.
ID# 8399085	Depends on my job, in my current job my work hours vary too much for transit, but in the previous 15 years I did ride transit. I used the worker-driver system; then the Retsil ferry/shipyard bus system. If my job had 'regular' hours I would still be riding transit. It just makes sense, but I would keep my car...at home.

**Question:**

All new employees have been given a fully funded transit pass that allows them to ride on any bus, train, or ferry in the entire Puget Sound area for free at any time on any day. Due to the success of the program, all current employees are also invited to receive the same pass. How would this pass influence your current lifestyle?

<i>Participant</i>	<i>Response</i>
ID# 8356566	I would DEFINITELY use this pass. It would not be beneficial for personnel living in, say, Belfair or Union, WA where you lose the convenience of coming/going to/from work when you want.
ID# 8357627	Not much. It would still take 1.5 hrs. vice 35 min. to get to and from work every day.
ID# 8386396	it would not! it is unnecessary government welfare for an already well compensated workforce. they should pay for their own transportation like the rest of us!!
ID# 8386520	Minimal impact with respect to transportation to/from work. Would be used more to cover non-work related (not time critical) activities.

ID# 8386756	That is fuel for thought. Coupled with an increase in bus times/routes I'd take the bus to work.
ID# 8388169	It sounds like a good idea but there are times when my time is more valuable than the what I would save by using the pass. Many times my freedom is worth the cost.
ID# 8392008	I would use this method provided that A. I knew this option was available, and B. the frequency and access to my area (where I live) and medical appointments etc.
ID# 8392035	I live in a rural area with limited or no access to these forms of transit. It would not change my needs or life style.
ID# 8392164	It wouldn't.
ID# 8392202	This is a step in the right direction, however as discussed in the previous answer the current transportation environment in the surrounding communities is not efficient and lacks 24/7 transportation support.
ID# 8393130	I would make more of an effort to ride transit
ID# 8393968	I live in the middle of nowhere and would not be feasible to me. (26 miles away from work)
ID# 8394209	I would give up driving to work and driving to many other places.
ID# 8394766	I would refuse on principle- this would be a waste of taxpayer dollars
ID# 8396425	I would like to have one, I never received a transit pass.
ID# 8399085	See my answer above. (potential issue, I have commuted on the Retsil ferry and I don't know if it runs throughout the day, if so it would be wonderful, if not I'd have to take the Pt. O. ferry and walk over a mile to get to my car.)

Question:

You have been selected to provide some end-user feedback to your local transit authority, based on where you currently live. What services could transit provide for you to make you more likely to use transit?

<i>Participant</i>	<i>Response</i>
ID# 8356566	Worker Driver buses running a bit later in the mornings as well as at 0600.
ID# 8357627	Let people looking for commuters post ads on the site even if they don't already have enough for a vanpool. Also, have routes directly from the park and rides on the peninsula to the bases.
ID# 8386396	nonj! i do not believe in transit for my own self!
ID# 8386520	Closer pick-up. More integrated (and publicized) alternatives. Real time route planning/tracking on-line tools.
ID# 8386756	Better routes and more pick up times.
ID# 8388169	If I had the ability to use transit some work days and not others and be able to park close to work I would use transit. Being forced to do one or the other turns me off to transit.
ID# 8392008	Create more accessible and frequent routes to various places from where I live.
ID# 8392035	I live in a rural area with limited or no access to these forms of transit. It would not change my needs or life style.
ID# 8392164	Provide shuttle service to and from a designated secure parking area. During the day, if an employee needed to get to their vehicle for an appointment, there would be scheduled shuttles - every 15 minutes - to the lot.
ID# 8392202	Provide 24/7 transit in the communities to accommodate all work shifts and lifestyles. Extend transit routes to support those that live further away from the city

	limits. Provide incentives for those that use the transit. Ensure there is adequate security for the transit system. Require emergency transportation is available if the person needs to get to the hospital for a family member that has been hospitalized or other emergencies. Ensure transportation is timely.
ID# 8393130	None
ID# 8393968	reliable, dependable, easily accessed and be daily accessible
ID# 8394209	A direct service from downtown Port Orchard to the Bremerton Ferry and to the Southworth Ferry
ID# 8394766	keep public transit out of my neighborhood, it brings crime and drives down property values
ID# 8396425	closer pick up point near residence.
ID# 8399085	To use the local transit I have to walk a mile to the nearest stop, which eventually drops me off at the Pt. O ferry, which doesn't run 24/7. If I wanted to take a bus out to Belfair, the entire trip would take 6 hours....by car it's 25 minutes.

Question:

Your commanding officer discovers that nearly everyone on her staff is driving alone to work. She decides to implement a reward system to give a day of liberty to everyone on her staff who does not drive alone to work for 40 days (doesn't need to be consecutive). How could this program be more likely to succeed?

<i>Participant</i>	<i>Response</i>
ID# 8356566	How would you track it? Would the gate guards give out different stickers each day to prove you all rode together? It seems like more of a hassel than anything. Although good in thought, probably not good in practice.
ID# 8357627	If everyone were able to find people to commute with.
ID# 8386396	better to allow compressed work schedules like 4x10's and reduce commuteing by 20% right off of the bat!
ID# 8386520	Difficult to fairly enforce. But I've seen programs where only a single parking pass is given to pre-arranged carpool members (with a preset number of day passes that can be used as an exception on days when two vehicles need to be utilized).
ID# 8386756	Sounds good.
ID# 8388169	I think it would work for a while. As a long term solution I don't think it would work.
ID# 8392008	It would succeed somewhat.
ID# 8392035	allow employees with like needs to work flexible schedules ie. need to pick up kids from school etc.
ID# 8392164	This isn't realistic for civilians. Perhaps they could partner with the local gas stations and offer incentives of a free tank of gas every six months for those who decided to join a carpool.
ID# 8392202	This would have to accommodate all shifts and special circumstances for all personnel. Similar strategies have been tried in the past and were viewed as unfair to some that could not fit their schedule into the parameters of the program.
ID# 8393130	Civilians can do this....Military need more consideration as our work schedules are not as fixed
ID# 8393968	To actually do it and not just say it at one level and deny it at another level.
ID# 8394209	Have the rewards be more gradual, like every 10 days earns you a gift card or something.
ID# 8394766	if you carpool to work you can leave work 30 min early
ID# 8396425	Send out the website for people to look over.

ID# 8399085      100%  
 But her ability to implement this system requires that her staff is paid by the same color of money. OM&N funds would support as would SIOH, but NWCF is directly from the customer and doesn't support her initiative. She would also have to get authority from above and fully develop the plan...does she have a staff of 5 or 50? Makes a difference to the budget.

Question:

You are attached to a command that requires you to exercise for one hour at least three times a week. Typically everyone drives on base, exercises, then drives off base for a shower and breakfast and then drives back on base for duty. To reduce congestion and the number of people taking off base showers, the command said you could bike, run, or walk to base and that would count as your physical training for the next day. What do think the results of this policy would be?

<i>Participant</i>	<i>Response</i>
ID# 8356566	Being as it is Washington state and the weather is less than cooperative most of the year, I don't think this program would work. Also, how would you track it?
ID# 8357627	Not likely to have a big impact. I live 35 min. drive from base and I don't think there are a lot of people who live w/in 5 or 6 miles from Bangor. Also, I wouldn't ride a bike along the major freeways; it is way too dangerous. I just went to a memorial service yesterday for a man who was hit while biking.
ID# 8386396	unknown
ID# 8386520	There is a loss of accountability - monitoring and enforcement would be difficult. But the real issue is behavioral - people want to shower and eat off-base prior to reporting for duty, and the new policy doesn't address that preference. This would be most effective for the portion of the population that already remain on-base to shower after PT.
ID# 8386756	So do you get to go home an hour early?
ID# 8388169	Having to exercise at work defeats the purpose of work. If we have time to exercise we have too many people working and need to lay people off. If I have to exercise at work and had the time off I would use the shower at work.
ID# 8392008	That would work provided that the breakfast was free.
ID# 8392035	a waste of time. military workforce would have to do it if it was an order. civilian workforce, other than those already bikine, running or walking, would not participate in an exercise program unless shower facilities were available.
ID# 8392164	N/A
ID# 8392202	Current showing facilities on base are not adequate to support this option and have been addressed in the past with no solution or expansion of facilities. There are many personnel that do not or will not shower in a public shower for fear of foot fungus and privacy issues. These concerns will have to be addressed before this option will be able to succeed.
ID# 8393130	negative....people live to far away in most cases
ID# 8393968	More would participate.
ID# 8394209	Not so great. The area isnt setup to support many trails, and riding/running on some of the roads to base is not pleasant.  If they are working out on base, they are probably using the gym and showers free to all.
ID# 8394766	impossible to track, some JO's life would become a nightmare because of this, the PT program would be undermined

ID# 8396425	It might help reduce congestion.
ID# 8399085	Must be active duty question, because you can't require civilians to do this. However the base has a gym with showers and McDonalds, so why would we drive off base?  If the exercise is a requirement, then so is not driving off base for shower and food.... After initial grumbling about PT requirements....I think that they would accept it.

Question:

Beginning tomorrow, no privately owned vehicles will be allowed on base ever again. How would this impact your life?

<i>Participant</i>	<i>Response</i>
ID# 8356566	For most sailors, this would crush it, and it would destroy the foundations of Bremerton. That would cause a LOT of chaos and probably fights among sailors. Vandalism and theft would probably go up.
ID# 8357627	It would take at least 1.5-2 hours to get to and from work.
ID# 8386396	it would really cramp my style man!
ID# 8386520	Would become an expert on available off-base parking and nearby park-and-ride transit options. Would also maximize carpool opportunities or may leverage family members for daily drop-off and pick-up.
ID# 8386756	Ouch!
ID# 8388169	I would say the command doesn't care about getting the job done and I would quit and find a place who cares about the job.
ID# 8392008	I would look for employment elsewhere.
ID# 8392035	i would retire. there would be a sudden brain drain of people who are eligible for retirement. congressional inquiries would escalate. productivity would be greatly reduced as the disgruntled workforce would spend more time complaining about finding a parking place and the exponential rise in parking costs outside the base.
ID# 8392164	Impossible situation. Daycares would be affected, the NEX and Commissary would be affected, the people who live on base couldn't park here? If the command did that, they would have to find alternatives for their employees, it's not just about the military. There are 17,000 Navy civilian employees in the Puget Sound area. If they did not find suitable alternatives, grievances would be filed with the unions and unfair labor practices.
ID# 8392202	With the current transit options, I will have to get up at least an hour and a half earlier to get to public transportation to be on time to work. This removes three hours of my personal time a day that I would consider unjust and would want to be compensated for. I would also incur transit cost that I previously did not have to pay that I should be reimbursed for. I would expect transit options to be available in case of a family emergency at no cost to me. I would have security concerns about riding public transit and would expect these concerns to be addressed and not just talked about.
ID# 8393130	Would be impossible to come to work
ID# 8393968	I would bring about a great expense and would probably have to find new employment after looking at the numbers.
ID# 8394209	Add ~1 hour to my day to ride mass transit
ID# 8394766	fewer DUIs at the gate,

getting to work would be the easy part,  
the troops who live on base would be hurting,  
retirees would have no commissary, no medical, no dental,  
I would start buying vacant property outside the gate.

ID# 8396425

I might look for another job.

ID# 8399085

I'd be calling a friend who drives a van-pool and beg for a seat, then when the boss wants to know why I can't stay late, he would already have the answer.

Question:

You are sponsoring a new family moving into the area, they want to live close to base and in an area with a good school district. Where would you suggest they move to?

<i>Participant</i>	<i>Response</i>
ID# 8356566	I would say Port Orchard would be a good option for closeness to the base, but their school district is not as good as it should be. Silverdale and Gig Harbor have better school districts, but they are more of a travel. I would suggest staying out of Bremerton completely.
ID# 8357627	On base.
ID# 8386396	ck!
ID# 8386520	There are no "good" school districts within walking distance to the base, so I'd recommend areas along good transportation corridors (highways, major road, public transportation) for quick access to the base (10-15 minute drive).
ID# 8386756	Central Kitsap County.
ID# 8388169	Tracyton
ID# 8392008	Mullinex area.
ID# 8392035	switzerland
ID# 8392164	Central Kitsap or North Kitsap
ID# 8392202	This all depends on the family, size, ages and their particular school preferences.
ID# 8393130	Central Kitsap School District
ID# 8393968	I would recommend from poulsbo to keyport.
ID# 8394209	Port Orchard
ID# 8394766	trick question, no military base has a good school district around it, just lots of crime and low property values
ID# 8396425	Bainbridge Island has the best schools and an existing bus to PSNS and Bangor.
ID# 8399085	Recommend either South Kitsap - Port Orchard \$; Central Kitsap - Seabeck \$\$/Silverdale \$\$; or North Kitsap - Poulsbo \$\$\$ also depends on their budget

Question:

To encourage military members to live closer to base, all service members moving into the area will be given an additional \$1,000/month for housing to live within a 10 minute walk from base. To be fair, the base housing department offers to cover the moving costs if any current members want to take advantage of this deal. What are your predictions about the effectiveness of this offer?

<i>Participant</i>	<i>Response</i>
ID# 8356566	I think the government would lose money on this program because a lot of people

	would try to take advantage of the system. For example, they might buy houses closer to work and rent them out, pocketing the extra \$1000 a month. Also, I think too many people would be trying to find places that close to base and the area can't support that influx.
ID# 8357627	Not likely good for Bangor; there aren't many housing options w/in 10 min. walk. Also, my husband is in the Army and works at Ft. Lewis so we live halfway between both bases. I think this would be somewhat discriminatory toward dual-income households where work isn't available for one member near the base.
ID# 8386396	it is hard to say.
ID# 8386520	Marginally effective. Many would be interested, but there is a finite capacity in the market for available housing near the base. If demand is too high, prices will rise and the \$1000 will be a less attractive incentive (alternatively prices will fall away from the base). And living within 10 minutes from the base does not address the behavioral change required to reduce automobile use to the base. Right now there are servicemembers living in the BQ who drive less than half a mile to a closer parking spot just to save a couple of minutes walking time.
ID# 8386756	I'd start buying homes to rent close to the base.
ID# 8388169	If there is housing within 10 minutes I think it would work.
ID# 8392008	Very effective!
ID# 8392035	available off base housing near a base is already nonexistent. providing an extra \$1000 would only increase rents in the area by \$1000.
ID# 8392164	Be real! The city of Bremerton is way more costly and we have a serial killer in the area! Not everyone wants to live in town, many like the rural lifestyle - where it's quiet and serial killers aren't running loose. Some even have horses or other animals they raise or they grow large gardens instead of buying from other areas.
ID# 8392202	The current community assets for housing do not support this.
ID# 8393130	very good...housing costs near base will climb
ID# 8393968	If the housing was available, personnel would take them up on the offer, however, as soon as more money is available for personnel to utilize, prices will go up. Supply and Demand laws.
ID# 8394209	Not good, the area around Bremerton is pretty nasty.
ID# 8394766	crime in these areas would go down, 10 min walk is to ambiguous, it would need to be a radius from the gate
ID# 8396425	Sounds effective but there is not enough infra structure for the housing near PSNS.
ID# 8399085	90-95% effective. They would enroll their kids in private school and mom would carpool them.

Question:

Congress just set aside some money for this base to make enough on-base housing for 80% of the families assigned here. As part of this exciting pilot program, you have been selected to be part of the committee to recommend what types of homes and amenities should be included in the plan. What would you recommend?

<i>Participant</i>	<i>Response</i>
ID# 8356566	I would recommend the Navy buy more land - there is not enough room on this base for 12000 people. Space issues aside, a gas station would be nice. The homes should be town homes of various sizes with some apartment style homes for E-4 and below.
ID# 8357627	Normal stuff, a separate pool, a non-profit coffee shop and market for the on-base

	residents where the money goes toward programs and activities for the on-base residents.
ID# 8386396	build apartments instead of houses!
ID# 8386520	I would promote a new urbanism type development, with sustainable mixed use facilities designed to promote a sense of community and encourage pedestrian use. Something similar to the "walking campus" feel of the Capodichino base in Naples Italy.
ID# 8386756	High end appliances, counter tops, cabinets, etc. Make it nice.
ID# 8388169	I am not in the military but from what I recall while I was on active duty I would recommend: 1) Day Care 2) Easy Access to Schools 3) Play areas and ballfield 4) Parking
ID# 8392008	Make them nice, modern, and somewhat upscale.
ID# 8392035	single family dwellings. regular bus service on base and to primary shopping areas off base.
ID# 8392164	That we be allowed to drive our cars on base to go to our homes. Childcare is a must, Commissary, NEX, gym, restaurants, before and after school care for older kids, safe play areas, etc...
ID# 8392202	To make this option successful the base would have to demo most of the current housing to afford room for high-rise housing structures and parking.
ID# 8393130	at least 4 bedrooms.....nice kitchens and baths
ID# 8393968	Homes should be set up in tight neighborhoods with a minimart style store nearby, and a center recreation area. Placing multiple families under one roof to consolidate space and encourage a sense of community among dependants.
ID# 8394209	ABove the average for the area as living on base surrounded by people you see everyday for work is nto appealing and offers less amenities.
ID# 8394766	waste of money, morale killer, most civilized dependants do not want to live on base, especially after cars are banned and you can't take your kids to school or buy groceries in your own car.
ID# 8396425	Go PPV.
ID# 8399085	Homes would be LEED Gold qualified. Would have electric ports for plug-in vehicles, grey water recovery for native/naturalized/xeriscaped landscaping. Garden waste composting/paper/cardboard/foodwaste recycling. Daylighting, solar panels to preheat water, ground source heating...

**Question:**

The city and the base have joined up to create the most bicycle friendly community in America. A significant bicycle network, including bicycle lanes, bicycle racks, lockers, showers, and other bicycle infrastructure has been built everywhere you look. Even food vendors are getting involved, giving free coffee, juice and snacks to bicyclists. You've just won a new bicycle yourself. What else would have to happen to convince you to ride your bicycle to base?

<i>Participant</i>	<i>Response</i>
ID# 8356566	Nothing, I already do, but I wouldn't if the TIP program was not in existance.
ID# 8357627	I would love to if it were safe and a reasonable distance. Again, I live in Gig Harbor b/c my husband and I work on different bases. I actually used to commute with a woman who also worked near me and had

	approx. the same schedule (I even started getting up an hour earlier to commute.) However, she had a lot of medical appointments and I travel for my job somewhat regularly so it ended up being painful to organize who was driving when, etc. And vanpools aren't available to me unless I start getting up 2 hours earlier. Finally, if I vanpool according to the current options available, I won't be able to get to the childcare facility to pick up my daughter w/in the max 10 hours allowed by WA state law.
ID# 8386396	the a-rabs would have to cutt off all oil to the usa and gas would have to be \$10.00 a gallon!!
ID# 8386520	Nice weather that lasts more than 3 months per year.
ID# 8386756	Nothing.
ID# 8388169	A nice climate.
ID# 8392008	Not sure. The weather and hilly terrain would have to be addressed.
ID# 8392035	remove automobile traffic!
ID# 8392164	We live in Washington...it rains here...A LOT! No way! I enjoy working out at the gym or in my living room, except for summer.
ID# 8392202	I do not live close enough to base for this option.
ID# 8393130	I would need to live closer
ID# 8393968	Again live closer
ID# 8394209	Nothing. I would start if there were a trail.
ID# 8394766	less rain, more sunshine, fewer bicyclist fatalities
ID# 8396425	Not going to happen.
ID# 8399085	In this community you are asking for a significant mind shift of enormous proportions. We have drivers that like to 'scare', splash, run-over bicyclists.... Oh yeah....and stop the rain/sleet/snow.

Question:

The base has wide roads, parking garages, ample free parking – encouraging or even requiring you to have a car to get around. The Navy has funded a study to make this base completely walkable, meaning you don't have to have a car to get around. What would have to be addressed to make this a reality?

<i>Participant</i>	<i>Response</i>
ID# 8356566	It doesn't mitigate the fact that people like the convenience of coming/going as they please.
ID# 8357627	Distance of workplace to facilities; it is currently at least 20 min. to and from gym, food, etc. And I'm already so busy that I don't leave my desk for lunch. The Navy would have to get more manpower so that people would have more time to walk to/from facilities, as well.
ID# 8386396	get me new feet!
ID# 8386520	Peripheral transportation or parking. Then options to transit across base extremities.
ID# 8386756	The base bus drivers are horrible. Need to get consumer orientated drivers.
ID# 8388169	I think that all vehicles should be parked in or near the gate with buses tranporting people to central areas and people walking from the central area to specific location. Havin vehicles moving about the base should be avoided.
ID# 8392008	Not sure, but they have done this in WA DC and it works well.
ID# 8392035	primary base amenities be centrally located in a hub with "mini marts" strategically

	located throughout the housing area. possibly designed in a wagon wheel fashion.
ID# 8392164	How do you drop off babies at the childcare and get your groceries to your car? This is not a family friendly idea. The military is going to have a hard enough time recruiting new people with the budget cuts, now you want to take away all of their amenities? Good luck!
ID# 8392202	A transportation loop around the base the stops at all major areas (Pier, training facility, parking, all major commands, support commands and medical facilities).
ID# 8393130	get rid of the waterfront..and waterfront security
ID# 8393968	x
ID# 8394209	\$5 for a gallon of gas. And nice trails that arent loud with traffic. How to deal with wet NW weather
ID# 8394766	if the base has all this infrastructure what is the motivation to ban cars?
ID# 8396425	Sounds great.
ID# 8399085	The base is almost too big for this, especially if I have to carry my gear from one site to another. Many years ago the base allowed tri-cycles with baskets...please bring them back. They can be 'highlighted' for safety and are much more stable than a bike. Give them fatter tires for safety.

**Question:**

Due to budget limitations and traffic congestion, the base just received approval to charge a parking fee on base. They now have to decide how much to charge on a daily basis. The amount needs to be high enough to make people reconsider driving on base, but low enough that if someone had to drive they could afford to park for a day. How much should they charge for parking? Why?

<i>Participant</i>	<i>Response</i>
ID# 8356566	\$3 a day. It's a flat fee - the people who are really persistent will pay it, the people who can't afford it, will carpool.
ID# 8357627	None for those who can't reasonable commute. See above.
ID# 8386396	nothing! free parking at a base is a fundamental benefit for gubmint employees. if you want, charge the contractors for parking!
ID# 8386520	\$4-5 per day. \$80-\$100 per month is enough of a hardship to make people reconsider driving every day, but won't necessary break anyone who MUST drive every day.
ID# 8386756	Nothing. Becuse we are already under paid.
ID# 8388169	I think the fee should be equal to the cost to construct and maintain the parking facility. I a 500 stall parking garage cost \$5,000,000.00 to build and \$10,000.00 to maintain annually; the garage is expect to be usable for 75 years the cost should be about \$1.00 a day to cover cost and have extra for backup.
ID# 8392008	This is insane! Would look for work elsewhere.
ID# 8392035	see answer to #8
ID# 8392164	Charge to park on federal property? Interesting notion, it should not be more costly than the local parking off base.
ID# 8392202	This option would be viewed as punishment for those that could not accommodate other options. This would cause personnel to try and undermine the system and cause other issues for the base that would cause costs to the base and the personnel that committed the offense. Laying the burden on the workforce is never a good idea and comes with unexpected results.
ID# 8393130	3.00 / day

ID# 8393968	I think the fee should be based on wage and benefits, this way it would be fair to all, percentage wise, and should also be based on if an individual lives on base.
ID# 8394209	\$5. Reasonable for a day, but \$160 a month is too much for most folks
ID# 8394766	this would make recruiting difficult,  incentivize, don't penalize  why not charge a toll at the gate? I can buy the easy pass and keep driving to work.
ID# 8396425	\$5.00 one dollar less than in town.
ID# 8399085	More than what is charged out in town by \$5.00/day

Question:

At the gate, as you come in, your ID will be scanned either as driving alone or other. Every work day that you come onto base and you are scanned other (i.e., carpool, bus, bicycle, pedestrian, etc.) you will receive a small amount of money as a reward for not driving alone. How much should this reward be? Why?

<i>Participant</i>	<i>Response</i>
ID# 8356566	I would say \$0.50 a passenger. This fee is small enough that it won't be a HUGE financial burden on the Navy, but big enough that it will add up for the travellers.
ID# 8357627	None unless commuting is equally available for everyone.
ID# 8386396	none! because people should not be treated like children and given money rewards. plus we have too high a national debt! WE NEED TO REDUCE SPENDING NOW!!! 15 TRILLION DEBT ARE YOU KIDDING ME???
ID# 8386520	\$2 per day. Don't know, but it should be tied to the capital cost of maintaining the infrastructure.
ID# 8386756	Sounds to much like big brother to me.
ID# 8388169	That hard to say. It depends of many factors, things like how long you stay at work, what time do you come to work, what time do you go home, how many people are with you when you get credit.
ID# 8392008	not interested.
ID# 8392035	\$2 per day. paid quarterly so the effort feels worth while with a decent lump sum.
ID# 8392164	I thought there were budget concerns?
ID# 8392202	This option would require a survey of cost versus savings to the base and the person. Personal opinion should not be the factor driving the reward for this option.
ID# 8393130	\$5.00/ time.....because that is enough of an incentive to encourage people to find a way to commute
ID# 8393968	\$2.50 - \$5.00 a day, or \$100.00 a month.
ID# 8394209	Nothing. I don't think cash is a good reward. Most people on base are semi-well off with their salary.
ID# 8394766	what about motorcycles and micro-cars?
ID# 8396425	\$3.00 enough to make it worthwhile but not enough to break the bank.
ID# 8399085	Don't give me money...gotta pay taxes on it...give me time off per 'scanned other' so in 2 weeks I get a day off.

Question:

You drive along a primary roadway every day to base and there is really no other practical way to get to base except to drive on this road. You find out that the road, due to congestion, has instituted tolling for

single occupancy vehicles, but have not yet firmed up the pricing scheme. You have been asked to give your recommended toll price that would convince you not to drive alone. How much should the toll be? Why?

<i>Participant</i>	<i>Response</i>
ID# 8356566	\$3 again for same reason of: It's a flat fee - the people who are really persistent will pay it, the people who can't afford it, will carpool.
ID# 8357627	None. B/c I have tried but I can't find someone to commute with.
ID# 8386396	NOTHING! BECAUSE I AHVE ALREADY PAID FOR THIS ROAD WITH ALL OF MY TAXES, MAN!!!
ID# 8386520	\$2 each way will make people consider alternatives.
ID# 8386756	None.
ID# 8388169	Tolls should be based on time of day. If driving during periods of less traffic it should be less than driving during period of high traffic. The toll should be a factor of cost to maintain the road between two points. The factor should be determined by committee.
ID# 8392008	not interested.
ID# 8392035	zero. with the rising cost of fuel i think ride sharing will become self motivating where personal requirements permit.
ID# 8392164	Ask the 520 commuters. There is always another way.
ID# 8392202	This option would cause secondary roads to become congested and would have adverse affects on neighborhoods and the surrounding community. Many are limited on what expenses they can incur before resorting to different means of dealing with an issue. this usually leads to other problems. As previously discussed, laying the burden on the workforce is never a good idea and comes with unexpected results.
ID# 8393130	any amount above \$0.00 as I already pay taxes to maintain that road...
ID# 8393968	\$5.00, could not afford it and would have to find other means or job, which ever is more advantageous.
ID# 8394209	ANything over \$3
ID# 8394766	can a price be put on the peace of mind that comes with a relaxing drive alone?
ID# 8396425	Zero, we pay a lot of taxes for the roads, they need to stay open.
ID# 8399085	\$5./day each way
	Will I get charged on the weekend when I need to go into town or the commissary/exchange or just during commute hours?

Question:

For increased safety and to deter too many people from driving, the commanding officer has increased the base security level to Delta. This will mean that every vehicle coming on base will have to be inspected thoroughly and the wait time could be in the hours to get a vehicle on base. Pedestrians, bicyclists, and transit riders, however, just have to show an ID card and can quickly gain access to the base. How long would you be willing to wait to be able to bring your car on base?

<i>Participant</i>	<i>Response</i>
ID# 8356566	I wouldn't. I would ride.
ID# 8357627	20-30 min. I would then look into telecommuting.
	This also brings up the problem of where people park even to take the shuttle onto

	base. Is the Kitsap Mall really going to allow hundreds or thousands of cars to park there all day? I don't think so.
ID# 8386396	AS LONG AS IT TAKES. IF IT TAKES TOO LONG THE NAVY IS GONNA HAVEE TO PAY FOR IT BY INCREASED USE OF TIME ALLOWED OR ADMIN LEAVE!
ID# 8386520	20 min.
ID# 8386756	5 minutes.
ID# 8388169	If the commanding officer doesn't want the work done than I would go home and turn in my resignation.
ID# 8392008	15 min.
ID# 8392035	if the base co put the base on security level delta for a non-security reason, he would be relieved of command. and the people affected would see to it.
ID# 8392164	It's Uncle Sam's dime. Do they really want to keep people off the deckplates? I wonder how this would affect production?
ID# 8392202	This option would cause extreme burden on the portion of the workforce that does not fit the common mold of this particular case. The administrative burden on supervisors for personnel arriving late to work would increase exponentially.
ID# 8393130	as long as it takes...
ID# 8393968	I would have to wait however long it took.
ID# 8394209	8 minutes
ID# 8394766	I don't think this would pass legal review, perception of profiling, I would sit in the line on principle and be late for work
ID# 8396425	During FPCON Delta only mission essential personnel come onto the base. I would telework.
ID# 8399085	10 minutes....reminds me of the post 9-11 days.

Question:

In an effort to increase morale and productivity, while saving service members car costs, the Navy began routing busses, equipped with wi-fi to pick up all employees. The best part is, once you get on the bus, your clock starts and you can count your commute time against your work time. The Navy's goal is for 80% of employees to use this service, so even a free coffee and snacks are provided. What else should be added to this service?

<i>Participant</i>	<i>Response</i>
ID# 8356566	This wouldn't work for the Navy because we don't work on "time clocks." We get paid 24/7 to do a job. If the job isn't done, we don't go home, so this service is moot.
ID# 8357627	You got me at "pick up all employees". If this were available, I would already be using it.
ID# 8386396	IT IS WAY OVWER THE TOP AS IT IS1 ARE YOU KIDDING?? MAYBE A BLANKY AND A BOTTLE!
ID# 8386520	Nothing.
ID# 8386756	That sounds great to me.
ID# 8388169	This would defeat the purpose of coming to work. I the navy has enough people to wast employee productive time than they need to lay some people off.
ID# 8392008	I would be interested in this!
ID# 8392035	the navy would also need to provide transportation for personnel to keep medical appointments etc.

ID# 8392164	Drop offs for child care.
ID# 8392202	Free parking at the pickup points, security, covered waiting areas, transit options available in case of a family emergency at no cost, transportation is timely and accounts for special shifts (personnel that work outside normal business hours).
ID# 8393130	That would be more than enough
ID# 8393968	I like this idea, but find it financially prohibitive.
ID# 8394209	Nothing.
ID# 8394766	this is an absurd waste of tax money, I would call the Fraud, Waste and Abuse hotline
ID# 8396425	Sign me up. My car will stay at home.
ID# 8399085	This will reduce the budget and the number of folks that support a project, and increase the price and length of time to complete a ships project...don't think NAVSEA/SSP will approve...
	Bigger seats as some workers a quite large.

Question:

Zipcar (an hourly car rental club that pays for gas and insurance ~ \$10/hour) has asked that a fleet of cars be assigned to a parking lot on base to allow base employees the use of a car during the day if they need to run a non-official business errand but carpooled or used transit to get to base. The cost of an over night use of a zipcar is also only around \$36 if someone needed to take the car for the night. What concerns do you have about zipcars being located on base?

<i>Participant</i>	<i>Response</i>
ID# 8356566	They would be taking up valuable parking spaces.
ID# 8357627	AT/FP and what do you do if all the cars are taken? Also, what do you do in case of emergencies? And WA state only allows you to have kids in childcare 10 hrs. per day. I work 8-9 on average and commute approx. 35 min. each way. If a car isn't available, I will be in violation of state law, have to pay significant late fees to the daycare, and will have a very sad & upset daughter.
ID# 8386396	BOMBS!
ID# 8386520	Having an adequate number to cover peak demand.
ID# 8386756	Boom!
ID# 8388169	None
ID# 8392008	None.
ID# 8392035	see # 18, if the command is willing to pick up the tab.
ID# 8392164	What about official business driving? I have to do that all the time and we are unable to maintain a government vehicle due to budget concerns. I drive my own vehicle to off site meetings...all the way from Whidbey to Keyport to Bangor to Manchester.
ID# 8392202	This option does not make sense. It does not cost the average person \$10 an hour to operate their personal vehicle to and from work or \$36 a day even with insurance added in. This option would not make my top 20 list of cost savings ideas.
ID# 8393130	maintennace...and cost for electrical charging
ID# 8393968	I think this is a great idea, I already proposed it earlier.
ID# 8394209	None.
ID# 8394766	security at the gate, zip cars can be returned to any zip car station.

ID# 8396425	Let personnel do personal business on their own time, you come to work to work.
ID# 8399085	Taking away more parking, and parking on base poses a security risk, so park then out in Montgomery lot after you have installed the gates on the west side of the lots, the cars won't have to be inspected.... I love the idea.

Question:

Now that you've heard many ideas, do you have some other suggestions that I haven't addressed?

<i>Participant</i>	<i>Response</i>
ID# 8356566	<i>No response</i>
ID# 8357627	Already included.
ID# 8386396	YEAH, YOU GOTTA BE KIDDIN ME!
ID# 8386520	Encouraging public-private ventures for centralized parking and/or transportation alternatives. Could be "hubs" located on Federal property or at key transportation nodes throughout the community.
ID# 8386756	No.
ID# 8388169	You cannot class all base personel int one group. Some people work the same hours everyday and can use the transit system or carpools or other group transportation. Other people have split shifts or work odd hours or come and go from work and must use their own vehicle. Not being adjustable to how a worker gets to and from work defeats the idea of allowing workers to perform their efficientl.
ID# 8392008	None
ID# 8392035	<i>No response</i>
ID# 8392164	I really think the shuttle lot is a good option. The civilians are the ones who are the constant at any base, so I'm wondering why they are not being taken into consideration here. They support the military.
ID# 8392202	Perform a case study of the past 10 years concerning transit and parking issues in the area that is being considered for transit and parking upgrades. Allow for community input (Local community restrictions have stopped previous efforts by the Navy to implement newer transit and parking initiatives). History has proven that the hardnosed push for change concerning transit and parking has failed and that the burden pushed upon the working class has caused productivity to suffer along with the budget of the individual. This is a paradigm issue that will not be easily changed overnight. Society is very slow to change. Many have stood in the way of progress (city, county and others) only on the principle that the change did not benefit the surrounding communities with increased revenues or jobs. There is no single point solution to this issue. However, as stated before, the burden should not be pushed on the individuals that are trying to get to work on time and support their families. I have learned many things as a leader and manager of people. One thing stands out above the rest. Take care of your workforce and they will take care of you. Successful corporations do this and they are leaders in the market. Let us learn from their successes.
ID# 8393130	<i>No response</i>
ID# 8393968	x
ID# 8394209	Can mass transit be succesful without high density housing?
ID# 8394766	require all active duty to sleep in their workspace at least two nights out of the week
	allow active duty to participate in RDO, alternative work schedules, and work from

	home programs
ID# 8396425	Have a website where you can send in your address and times at work and the computer makes matches for carpool or bus and gets back to you with options.
ID# 8399085	Buy the stip of land on the northside of the base and build off-base, but secured parking. Bring \$\$\$\$\$\$.  OR Build parking garages all the way north on the Montgomery lots and assign to civilians, including the handicapped and NMCI contractors and contracted employees. Then reassign all the parking south of Farragut to active duty, including F lot out by inactive fleet and let them patrol it themselves.

Question:

Last scenario, one you've heard before...let's say you are the new commanding officer of a naval base and have been given an order to cut the number of people driving their cars to your base from 10,000 to 3,000 by next month. What would you do?

<i>Participant</i>	<i>Response</i>
ID# 8356566	Find funding from somewhere for worker driver buses for military, not just civilians, and actually inform people about the TIP program - I had to search for info when it's supposed to be publicized.
ID# 8357627	See above. Commuting options need to be available on a regular basis and make sense from a timing standpoint. I could use a vanpool right now if I woke up two hours earlier and drove 1/3 of the way to work to meet it at the Mullenix Park and Ride. This doesn't seem worth it and I've already tried finding others to commute from Gig Harbor but the Kitsap and Pierce websites don't allow this and I've contacted them to ask but was still told no.
ID# 8386396	SAME AS ABOVE!
ID# 8386520	With only a month, not much changes. But the key is to incentivize behavioral change. Availability of Zipcars (or similar) allows people to retain a sense of autonomy and flexibility in a pinch.
ID# 8386756	Free bus service and work clock starts when you get on bus.
ID# 8388169	I would answer as before: harse measures would be needed and in the end the costs in productivity and moral would be high.
ID# 8392008	develop alternative, frequent running bus routes from various area's of the kitsap peninsula dedicated to the pick-up and delivery of personnell from and within the shipyard. teh shipyard has busses running within the shipyard regularly, and the commuter busses, however, with alternative work schedules, the commuter busses are not always conveyient.
ID# 8392035	provide teleworking for those whose primary work is done on the computer. Stager days that they are required to perform on base duties, provide secure teleconferencing, and schedule face to face meetings at alternate locations conducive to the purpose and requirements of the attendees.
ID# 8392164	Keeping in mind there may be civilians involved, I would notify the local bargaining units and get them involved in the solution. Then I would involve the local transit service to discuss alternative options of getting people to work. I would do a survey of employees to find who drives to work each day, including those in carpools. I would offer incentives for those who drove alone or in small carpools to band together into vanpools or ride on transit buses. I would discuss options with the local municipality to contract parking or look at funding for off site parking

	garages/lots and offer shuttle services to worksites. There are many options available.
ID# 8392202	Please see my previous answers. I have delt with these and other issues during my time working for the Navy. I stand by my ideas due to the fact I have seen more failures by previous Commanding Officers that did not take the advice\input they were provided by their deck plate leaders.
ID# 8393130	provide better more direct routes of public transporation to the base from multiple locations.
ID# 8393968	The same as I already proposed, keeping in mind the geographical area and lack of access.
ID# 8394209	1) Immediately request more funds for buses or vouchers for mass transit 2) Institute stricter parking privileges 3) Prepare letter to your boss saying the goal won't be met in one month unless the cost of gas jumps up.
ID# 8394766	lay off 7,000 people
ID# 8396425	Option 18 might work.
ID# 8399085	See answer to #2.

Question:

Are you:

<i>Participant</i>	<i>Response</i>
ID# 8356566	Active Duty Military
ID# 8357627	Active Duty Military
ID# 8386396	Civilian employee
ID# 8386520	Active Duty Military
ID# 8386756	Civilian employee
ID# 8388169	Civilian employee
ID# 8392008	Civilian employee
ID# 8392035	Civilian employee
ID# 8392164	Civilian employee
ID# 8392202	Civilian employee
ID# 8393130	Active Duty Military
ID# 8393968	Civilian employee
ID# 8394209	Civilian employee
ID# 8394766	Active Duty Military
ID# 8396425	Civilian employee
ID# 8399085	Civilian employee

Question:

What is your paygrade?

<i>Participant</i>	<i>Response</i>
ID# 8356566	E-4 to E-6
ID# 8357627	O-1 to O-3
ID# 8386396	<i>Question was not available to participant</i>
ID# 8386520	O-4 to O-6

ID# 8386756	Question was not available to participant
ID# 8388169	Question was not available to participant
ID# 8392008	Question was not available to participant
ID# 8392035	Question was not available to participant
ID# 8392164	Question was not available to participant
ID# 8392202	Question was not available to participant
ID# 8393130	O-4 to O-6
ID# 8393968	Question was not available to participant
ID# 8394209	Question was not available to participant
ID# 8394766	O-1 to O-3
ID# 8396425	Question was not available to participant
ID# 8399085	Question was not available to participant

Question:

How many days per year do you drive your car alone to base? Estimated.

<i>Participant</i>	<i>Response</i>
ID# 8356566	150
ID# 8357627	225
ID# 8386396	190
ID# 8386520	200
ID# 8386756	190
ID# 8388169	260
ID# 8392008	300
ID# 8392035	200
ID# 8392164	50
ID# 8392202	250
ID# 8393130	265
ID# 8393968	266
ID# 8394209	200
ID# 8394766	250
ID# 8396425	192
ID# 8399085	207

Question:

On a typical day, how many minutes does it take for you to drive from your home to your place of work?

<i>Participant</i>	<i>Response</i>
ID# 8356566	10
ID# 8357627	45
ID# 8386396	45
ID# 8386520	18
ID# 8386756	20
ID# 8388169	45
ID# 8392008	15

ID# 8392035	15
ID# 8392164	20
ID# 8392202	20
ID# 8393130	25
ID# 8393968	35
ID# 8394209	8
ID# 8394766	25
ID# 8396425	16
ID# 8399085	35

Question:

How many cars do you and your household own?

<i>Participant</i>	<i>Response</i>
ID# 8356566	2
ID# 8357627	2
ID# 8386396	3
ID# 8386520	2
ID# 8386756	2
ID# 8388169	2
ID# 8392008	3
ID# 8392035	2
ID# 8392164	1
ID# 8392202	2
ID# 8393130	2
ID# 8393968	4
ID# 8394209	2
ID# 8394766	Other: 5
ID# 8396425	2
ID# 8399085	3

Question:

Estimate in dollars how much you pay every year for your car (include payments, insurance, fuel, maintenance, etc.).

<i>Participant</i>	<i>Response</i>
ID# 8356566	4000
ID# 8357627	10000
ID# 8386396	8000
ID# 8386520	18000
ID# 8386756	4500.00
ID# 8388169	6500
ID# 8392008	12000
ID# 8392035	4000
ID# 8392164	10000

ID# 8392202	7000
ID# 8393130	5000
ID# 8393968	3500
ID# 8394209	5000
ID# 8394766	4000
ID# 8396425	4800
ID# 8399085	4400