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14. ABSTRACT

This business case projects the likely benefits and costs to Frederick Memorial Hospital that would result from a decision to reconfigure its courier service by way of vehicle diversification and route realignment. Presently, Frederick Memorial Hospital couriers employ inefficient utility vans on redundant routes that are not meeting the hospital's entire demand for courier services. By way of investing in fuel-efficient vehicles, reducing manpower levels, and realigning courier routes, this case proposes changes to the courier service that represent a cumulative savings of $883,263.53 over a five-year analysis period. This equates to an expected five-year return on investment of 2,294%, and a payback period of roughly 3.5 months. After adjusting for the discount rate, the annual cumulative savings equate to a net present value of $761,559.36. Based on five months of exhaustive research and the analysis presented here, it is highly recommended that Frederick Memorial Hospital accept the proposal to reconfigure its courier service by way of vehicle diversification and route realignment.

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Army-Baylor University Graduate Program in Health and Business Administration

Business Case Analysis:

Reconfiguration of the Frederiek Memorial Healtheare System Courier Service

A Graduate Management Projeet
Presented to MAJ Kevin D. Broom, Ph.D.

In partial fulfillment of the requirements for a
Master's Degree in Health Administration

By
CPT Nathan C. Rauch

Frederiek Memorial Hospital, Frederiek, MD
13 May 2008

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First and foremost, thanks to my preceptor, Dr. Rose Labriola, Senior Vice President for Patient Services at Frederick Memorial Hospital, without whom this project nor this residency would have been possible. As a well-respected leader with significant influence among seniors, peers and subordinates alike, Dr. Labriola paved the way of my residency from start to finish by opening doors and granting access typically unavailable in most academic settings. This being only the second year of partnership between Army-Baylor and Frederick Memorial Hospital, Dr. Labriola is well on her way to developing a long-standing and rewarding relationship with the Army Medical Department and Baylor University.

I am also very appreciative of the opportunity to pursue this project, which was granted by Mr. Craig Rosendale, Frederick Memorial Hospital's Vice President and Chief Compliance Officer, and Mr. Rick Lashley, Director, Materials Distribution Center. I sincerely hope the information and recommendations contained herein prove beneficial to these leaders in their pursuit of excellence at Frederick Memorial Hospital.

As with most business case analyses, many hours of research and countless calculations were invested in this project. None of which would have been possible without the support, guidance, and data provided by many leaders at Frederick Memorial Hospital. Specifically, I am grateful to: Mr. Todd Gerwig, Courier Service Supervisor, and his team of professionals, who provide an invaluable service to the hospital, Mr. Harvey Vandenburg, Director of the Frederick Memorial Hospital Laboratory, who made available volumes of valuable information, and Mr. Mike Gaskins, Vice President, Finance, and his encouraging staff, for access to information typically afforded to very few.

Finally, thanks to my family, for their untiring support, and for whom I do all that I do.

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Reconfiguration of the Frederick Memorial Healthcare System
Courier Service

To: Dr. Rose Labriola, Senior Vice President for Patient Care Services, Craig Rosendale, Vice President and Chief Compliance Officer, Mr. Rick Lashley, Director, Materials Distribution Center, and Mr. Todd Gerwig, Courier Service Supervisor
From: Nathan C. Rauch, Army-Baylor Resident in Administration
Date: 12 May 2008

Executive Summary

This business case projects the likely benefits and costs to Frederick Memorial Hospital that would result from a decision to reconfigure its courier service by way of vehicle diversification and route realignment. Presently, Frederick Memorial Hospital couriers employ inefficient utility vans on redundant routes that are not meeting the hospital's entire demand for courier services. In fact, continuing courier service operations as currently configured will result in a cumulative commercial courier expense of $565,491.88 over the next five years. Additionally, over that same period, cumulative manpower expense will exceed $1.9 Million, and fuel and maintenance and repair expenses will surpass $253,000 and $60,000, respectively. In total, the current courier service configuration will cost Frederick Memorial Hospital $3,008,879.54 over the next five years.

By way of investing in three fuel-efficient vehicles, reducing manpower levels, and realigning courier routes, this case proposes changes to the courier service that represent a cumulative savings of $883,263.53 over a five-year analysis period. This equates to an expected five-year return on investment of 2,294%, and a payback period of roughly 3.5 months. After adjusting for the discount rate, the annual cumulative savings equate to a net present value of $761,559.36, as presented in the figure below.

The projected savings associated with this proposal depend on several key assumptions,

including the consistency of courier service workload and the serviceability of vehicles over 100,000 miles. Contingencies concerning these assumptions have been thoroughly examined and appropriately built into this case. Based on five months of exhaustive research and the analysis presented here, it is highly recommended that Frederick Memorial Hospital accept the proposal to reconfigure its courier service by way of vehicle diversification and route realignment.

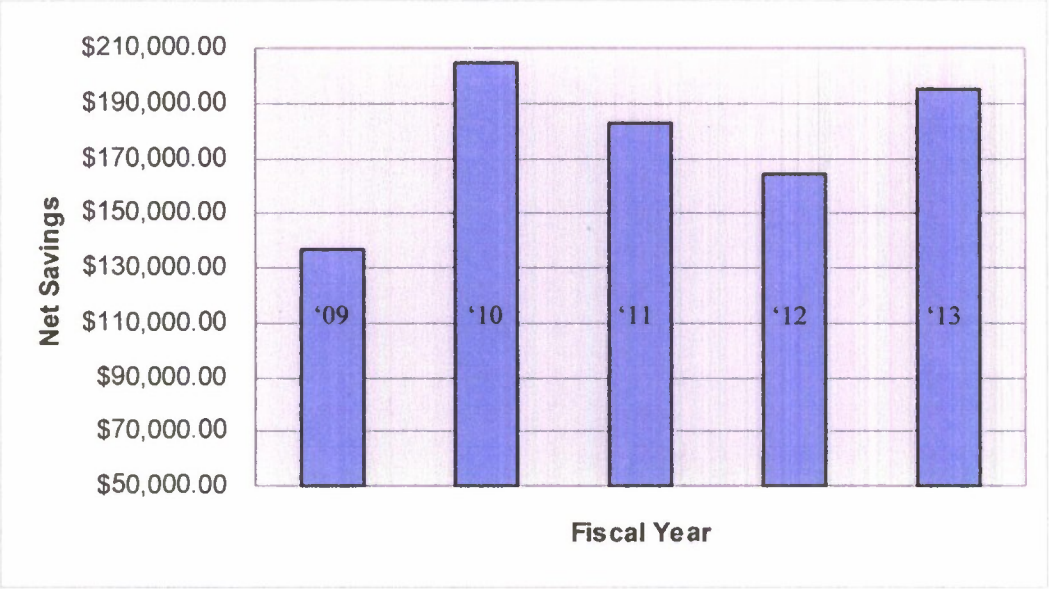

Figure 1. Cumulative savings associated with this proposal. Net present value: $761,559.36.

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A. Introduction

A. 1. Background

Frederick Memorial Hospital (FMH) is the sole inpatient healthcare facility in Frederick County, Maryland, and has maintained a strong outpatient competitive advantage since its establishment in 1902. Located in western Maryland, approximately fifty miles from both Baltimore and Washington D.C., FMH is the most convenient healthcare facility in the county and enjoys a stable, paternal relationship with the Frederick community. Despite this time-honored partnership, however, the rapid progression of the healthcare industry has forced FMH to evolve with its surroundings. Hospitals in adjacent counties, including the world-renowned Johns Hopkins, have made, and continue to make, technological advancements that affect patient access to increasingly effective care. As in any industry, competitors must maintain pace with the most current advancements or face isolation and eventual collapse. Despite strong relationships, reality and an innate desire for quick recovery and good health draw patients to advanced patient care. Frederick Memorial Hospital is well aware of this phenomenon and strives to exceed the expectations of its community on a daily basis.

As a private, not-for-profit, 246-bed hospital under recent leadership change, FMH is continuously making significant strides in technology and advancement to the benefit of its community. With twenty satellite facilities, including a state-of-the-art regional cancer therapy center, three outpatient ancillary centers, two immediate care facilities, a nursing and rehabilitation center, and a comprehensive wellness center, FMH maintains a significant patient care footprint within the county. In an effort to maintain competitive advantage, two additional ancillary facilities will enter the construction phase this fall.

Internally, FMH enjoys daily progress as well. Recently, the hospital was able to

advance its neonatal intensive care unit to level three status, obtaining regional infant care accreditation. A new magnetic resonance imaging housing unit and a state-of-the-art hyperbaric treatment facility were also recently added to the main campus. All patient rooms have been renovated and converted to fully private, and FMH is about to enter the initial construction phase of its Cardiovascular Patient Outcomes Research Trial initiative, which will include full cardiac intervention capability. Lastly, but certainly not completing the list of recent advancements, FMH took the first step toward electronic medical record keeping in October of this year by introducing electronic document management in the emergency department.

As FMH celebrates expansion and technological advancements, it is also faced with increased support requirements associated with growth. The constant strain related to workforce shortages and limited facilities keeps FMH searching for viable alternatives. Additionally, as the hospital footprint continues to expand, transportation requirements associated with its offsite Materials Distribution Center (MDC), located less than two miles from the main campus, are significantly compounded. The burden of ferrying medical and office supplies, equipment, linen, and medical records to and from the main facility and its satellites is shouldered exclusively by the FMH courier service, which is housed at the MDC. The above list comprises the bulk of items historically transported by the hospital's ten-vehicle courier service. However, as FMH incorporated offsite ancillary centers into its healthcare system, the transportation of laboratory specimens was also bestowed upon the service. Today, in addition to the mandatory staple of supplies, linen, mail, and equipment, the courier service transports thousands of specimens worth millions of dollars in revenue to the hospital laboratory each year.

The roots of the FMH courier service can be traced back to 1989, when a single van was purchased for the transportation of laboratory specimens. Due to reimbursement and billing

complications, the van was quickly assigned to the materials management division, which was then located on the main campus. Over the next eight years the courier service evolved into seven employees, four primary vehicles – one wagon, one box truck, one Jeep, and the original van – and a borrowed vehicle from FMH Home Health. In December 1997, Kowalski-Dickow Associates, Inc., a healthcare consulting firm, conducted an analysis of the courier service as it then operated. The firm made several recommendations that may or may not have been implemented. The after effects of the analysis have been difficult to determine, as time has rendered most of its content non-applicable.

In the ten years since the Kowalski-Dickow study, the FMH courier service has relocated to the offsite MDC and has obtained three additional employees and six additional vehicles. Currently, the hospital leases two box trucks and owns seven utility vans and one Jeep Cherokee. As noted, the courier service is fundamental to the financial viability of the FMH laboratory. In addition to this lucrative contribution, it also provides for the daily operation of the main campus and several satellite facilities. From linen to office supplies, biohazard waste to cash deposits, the FMH courier service transports a comprehensive list of supplies and material for its customers seven days a week (Appendix A).

Aside from daily administrative and operational management of courier service employees and a noble effort to maintain satisfaction among customers, the FMH courier service has gone financially and strategically uncontested for years. Perhaps rightfully so, the leadership at FMH have likely overlooked the service historically, rather focusing their attention on major, multi-million dollar projects, such as the recently completed, six-year major construction project, Project 2000, or the Cyber Knife endeavor at its regional Cancer Treatment Center. In fact, since it is difficult to ascertain whether or not consultant recommendations were heeded in 1997, it is

highly unlikely that the courier service has ever undergone financial or strategic scrutiny. As an unfortunate and unattributable result, the FMH courier service has improperly evolved and currently operates inefficiently, as will be evidenced in this analysis.

There is no question of whether or not FMH actually requires a courier service. With twenty satellite facilities and a laboratory highly dependent upon specimens drawn outside the main facility, the need for a competent courier service is undisputed. During the FMH fiscal year (FY) 2007 (01JUL06 – 30JUN07), the courier service delivered $5.4 million in specimens to the laboratory, which was determined by the revenue generated from each specimen. This figure alone clearly supports the existence of the FMH courier service. The problem, rather, lies in the efficiency and effectiveness of the courier service as it is currently configured.

In meeting with Mr. Rosendale and Mr. Lashley to discuss potential projects, they quickly offered an opportunity to conduct an analysis of the courier service. They were both concerned that the service was not operating as efficiently as it should and felt that it was time to take a closer look. They were both in agreement that, aside from the consultant firm ten years ago, little attention had been afforded the courier service and they both felt that perhaps it had wandered astray over the years. Their concerns are legitimate. Investigation into the service has revealed several facts and figures that are incongruent with sound financial objectives.

The first troublesome figure was discovered when examining the courier service FY07 financial report and turning to the gross operating margin, which was -$330,725. Despite the lack of additional information or background knowledge, this figure immediately sparked intrigue, as it seemed excessively high. The second bothersome figure was the total miles driven by the service in FY07, which were 106,127. At nearly 9,000 miles a month, the question of where these vans were driving and why quickly materialized. Digging deeper into the FY07

financial report, the cost of leases, fuel, and maintenance for the service's vehicles also drew attention. During that year, FMH spent $26,581 on box truck leases, $28,857 on fuel, and $8,849 on maintenance. Despite the recent high cost of gasoline, nearly $40,000 a year seemed like an excessive amount to be spending on gas and maintenance. Ultimately, this preliminary investigation led to the conclusion that there must be a more efficient way to operate the FMH courier service. Purchasing newer, more fuel-efficient vehicles, which would require little to no maintenance, instantly surfaced as a viable alternative.

Knowing that the courier service could not be analyzed without first experiencing what it actually does for FMH on a daily basis, a full day was set aside to ride along with one of the couriers. This enlightening experience proved extremely beneficial, as it supported initial inclinations that the courier routes and services were redundant and repetitive (Appendix B). One of the first observations noted was the fact that many of the ten routes overlapped. The route described makes one particular stop three times a day that is right across a parking lot from a stop on another route that is made six times a day. Next, it was noticed that multiple stops are made for interoffice and post office mail, which is run to and from the hospital, satellite facilities, and the finance center located off campus. Postage machines are located at the hospital mailroom, where all mail is sorted, and at one satellite facility. Perhaps as a result of an external viewpoint, ideas instantly materialized on how FMH mail could be run more efficiently. Specifically, postage machines at high volume satellite facilities as well as direct mail service via the United States Postal Service (USPS) came to mind. In fact, no post office mail was picked up at Corporate Occupational Health Solutions, and, upon investigation, it was discovered that the facility had its own postage machine and used the USPS to run its mail. The decision made then to recommend this postage model for all FMH satellite facilities still stands and will

reappear in the Recommendations and Conclusion section of this analysis.

In addition to these observations, great distances traveled to remote facilities for minuscule items that could wait for a less frequent courier, and repetitive stops on the same route that could be reduced to once per day or even once a week were two noted inefficiencies. At day's end, it was concluded that the courier service routes needed significant attention. With the knowledge gained from this experience, and the helpful insight of current courier service personnel, new routes were developed and will be presented in later sections of this analysis.

Despite the seriousness of these initial observations, they were soon shadowed by further investigation. During initial discussions with Mr. Lashley, he mentioned that he would like to reduce the hospital's reliance on the commercial courier service provided by T&J Express Delivery, Inc. In STAT, after hours, and great distance situations, T&J Express is called to courier lab specimens and pharmacy items. In those preliminary discussions, Mr. Lashley thought that the annual cost to the facility for T&J's services was roughly $40,000. At the time, this seemed significant and supportive of the analysis, so Mr. Lashley's request was added to the list of items to research. Roughly one week after this conversation, a significant discovery was made while reviewing the T&J Express account. During FY07 alone, FMH spent $82,455 on courier services provided by T&J Express Delivery, Inc. The discovery of this figure alone revealed an irrefutable potential for savings. Further investigation into the T&J Express invoices for FY08, revealed that FMH was on track to pay that company an estimated $103,410.66 this fiscal year (Appendix C). It then became immediately apparent that several well-researched recommendations could save FMH at least half, if not all that amount for many years to come.

According to Business Case expert, Marty J. Schmidt, "a business case [analysis] is a decision support and planning tool that projects the likely financial results and other business

eonsequenees of an aetion" (p. 1). The misaligned operational strueture and inefficient use of resourees described above provide ideal eonditions for using a business ease analysis to determine an appropriate eourse of aetion. Through the use of business case teehniques deseribed by Sehmidt, the goal of this analysis is to eompile and present aetions that, when implemented, will result in signifieant finaneial benefits and positive business eonsequenees for FMH. Keeping in mind the objective to improve the courier serviee by reducing fuel, maintenanee, commereial eourier serviee, and other costs, the researeh described above suggests restrueturing the FMH eourier serviee by way of vehicle and route diversifieation – reduee the number of gas-guzzling vans, purehase a number of fuel effieient cars, and reconfigure the routes to recapture deliveries and piekups made by T&J Express.

Analyses of struetural business deeisions are routinely eondueted using the business eases analysis technique. Typically, the traditional business case presents two or more seenarios for comparison and deeision purposes. In this ease, a status quo seenario and a proposed eonfiguration seenario are presented. Then, as Sehmidt deseribes, "to deeide whieh alternative is the better business deeision, you [FMH] will compare results of the two scenarios" (p. 84).

Successful organizations routinely eonduet the business ease proeess in order to make sound strategie decisions. In faet, the United States Army Medical Command (MEDCOM) has developed a standard business case tool that it uses to conduet frequent analyses of clinical expansion at its many treatment faeilities. For example, if MEDCOM suspects that a eertain faeility is referring too many physieal therapy patients to eivilian praetiees, resulting in loss of revenue and elevated purehased eare expense, it will eonduet a business ease for that faeility to determine if expansion of the physical therapy clinic is warranted. For illustrative purposes, substitute the FMH courier service for the physieal therapy elinic and eommereial eourier

services for civilian physical therapy care and you have an identical business case.

Over the past five months, utilizing business case techniques that will be explained in detail throughout this case, significant amounts of research and countless calculations have been conducted in an effort to determine the best courier service configuration for Frederick Memorial Hospital. Through the course of several discussions with key courier service stakeholders, to include the courier service supervisor, the MDC manager, the MDC director, and several FMH couriers, multiple courses of action and countless recommendations have been addressed. Taking into careful consideration the vast and invaluable insight provided by the numerous contributors to this analysis, the recommendation to reconfigure the Frederick Memorial Hospital courier service from seven vans, two box trucks, and one Jeep to three vans, three Toyota Yaris, two box trucks, and one Jeep, as well as realign all courier routes in order to recapture commercial courier service expense, is hereby proposed.

A. 2. Subject of analysis

This business case analysis examines the likely benefits and costs to Frederick Memorial Hospital resulting from the decision to reconfigure its courier service by way of vehicle diversification and route realignment. The main elements of the proposal call for $36,888.00 in equipment capital investment, a decrease in labor, insurance, fuel, and maintenance expenses, as well as the recoupment of 71%, or $403,801.93 over five years, of commercial courier service expense.

The benefits and costs associated with the decision to reconfigure the courier service will very likely continue for at least five years. However, given the effects of fluctuating economical and political environments, estimating cash flows any further into the future is difficult to

calculate accurately.

The benefits of reconfiguring the courier service are derived directly from the goals and opportunities mentioned above, namely, commercial courier service cost recoupment and decreasing fuel and maintenance expense. Expected increases in customer satisfaction, to include physicians as well as administrative staff, as well as a potential to expand laboratory outreach market share will likely contribute to the overall benefits projections.

A. 3. Purpose of Analysis

This business case analysis provides Frederick Memorial Hospital leadership with the necessary financial projections, financial metrics, and assessment of contingencies and risks to support a decision to either accept or decline the proposal to reconfigure the courier service.

B. Methods and Assumptions

B. 1. Scenarios and Data

This business case examines two alternatives for Frederick Memorial Hospital courier service requirements. The case emphasizes cash flow analysis, to include net cash flows and net present value of costs for the five-year analysis period. Additionally, a net savings summary table depicts the annual financial benefit of the recommended scenario, as well as the net present value of those annual savings. Also, payback period on initial investments associated with the proposed scenario is offered in order to illustrate the length of time needed to overcome those costs. Since couriers are an overhead service, the payback will be realized in savings, rather than earnings. The return on investing in a new configuration, realized in savings, is presented as well. These data are also presented in bar charts for additional aesthetic convenience. Non-

financial measures not included in the metrics, but recommended for consideration, include increased courier service customer satisfaction, increased physician satisfaction with laboratory and courier services, potential increase in laboratory outreach market share, and decreased turn around time for laboratory results. See Appendix D for an illustration of these scenarios:

Scenario 1 (Maintain Current Configuration – Status Quo)

- Make no changes and continue courier service operations as configured.

Scenario 2 (Reconfigure courier service by way of vehicle diversification; realign routes)

- Trade-in four utility vans toward the purchase of three new Toyota Yaris 3-Door Liftbacks.
- Realign current courier routes in accordance with the attached schedule (Appendix E).
- Make no vehicle configuration or route changes to current box truck operations.

B. 2. Scope of the Case

Time

This business case covers a five-year time horizon. In order to avoid financial complications associated with mid-fiscal year introduction of unscheduled and unbudgeted projects, the projected start date is 01 July, 2008, extending through 30 June, 2013. It is assumed that implementation will coincide with the start of the fiscal year, with all negations occurring prior to this point.

Organizations

This case includes expected business performance improvements primarily for the Frederick Memorial Hospital courier service. Cost impacts for this analysis will span the following areas: fuel, labor, repairs and maintenance, commercial courier services, insurance,

and capital equipment expense.

B. 3. Financial Metrics

The model calculates Net Present Value (NPV) on the basis of input data for two different courier service configuration scenarios. Cash flow projections for all variables are included for each of the five years in the analysis period. Fuel, labor, repair and maintenance, commercial courier service, insurance, lease, and new vehicle costs are captured beginning in year one of the analysis starting 01 July, 2008. Financial metrics utilized include:

Net Cash Flow

Results of summation for estimated cash outflows are presented for the five-year analysis period. Cumulative net cash flows for each year of the analysis period are also presented in the cash flow summary worksheet.

Net Present Value

The net present value calculation is a profitability measure that uses discounted cash flows to forecast the profitability of projects. A positive NPV indicates a profitable project, and the higher the NPV the more profitable the project.

Return on Investment

Return on investment is expressed as a percentage and represents the projected incremental gains from an investment and the net costs of an investment.

Payback Period

The payback period is the number of years, or months in this case, required to recover the initial costs of an investment through expected gains. The shorter the payback period, the more liquid the project.

B. 4. Benefits

The benefits of reconfiguring the courier service include the following:

- **Increased productivity and fuel efficiency**

By reconfiguring the vehicle makeup of the courier service fleet, and realigning the courier routes in accordance with the proposed schedule, total miles driven per year by utility vans will be reduced from 106,127 to 10,296. Overall, the proposed configuration will reduce total miles driven annually from 122,557 to 119,540, for a total of 3,037 miles saved per year. Miles saved over five years total 15,185, which equates to a 41%, or $102,957.05 savings on fuel over the analysis period. Additionally, utilizing the new route schedule, supply, linen, and biohazard trash delivery and pick-ups will be reduced from daily to three times per week, significantly improving proper utilization of utility van cargo capacity. Finally, utilization of the small and fuel-efficient Toyota Yaris will enable FMH couriers to focus their efforts on the lucrative, core business of the courier service - frequent and timely pick-up and delivery of laboratory specimens. The Yaris will also easily accommodate all forms of mail, X-Rays, deposits, and medical records, which comprise the bulk of the service's ancillary duties.

- **Decreased commercial courier expense**

Despite the fact that it operates its own robust courier service, FMH is currently on track to pay $103,410.66 for commercial courier services this fiscal year (Appendix C). Even if this proposal is implemented, a fraction of these charges are unavoidable, unless the hospital elects to expand its courier service to a twenty-four hour, on-call operation, which was not considered in this analysis. Currently, unpredictable trips to and from the hospital's reference laboratory in Chantilly, Virginia, as well as the Maryland State Health Department in Baltimore, are efficiently outsourced to T&J Express Delivery, Inc. at $80 per weekday trip and $100 per

weekend trip. Unless an opportunity arises where a FMH courier is able to perform one of these trips, continued employment of T&J Express, for this sole purpose, is recommended. Conversely, implementation of the proposed courier service configuration, as well as the proposed route schedule, will enable FMH couriers to recapture 71% of the current annual commercial courier expense, or $403,801.93 over five years.

- **Decreased capital equipment expense**

The current FMH courier service fleet is aged and near end-of-life, with an average odometer reading of 75,366 miles, and three vans over 100,000 miles. Averaging roughly 1,263 miles per month, and adhering to a 120,000-mile life cycle, five vans will need replaced over the next five years, costing FMH $118,883.62. Conversely, the proposed configuration and route schedule calls for the retention of three low-mile utility vans, which will not need to be replaced over the analysis period, and the purchase of three new Toyota Yaris Liftbacks, costing FMH only $36,888.00. In brief, once implemented, the proposed courier service configuration will save the hospital 69%, or $81,995.62 in new vehicle expense over five years.

- **Decreased labor and fringe benefit expense**

As explained in subsequent sections, the proposed courier service configuration requires less manpower. Implementation will save Frederick Memorial Hospital 13%, or $258,902.48 in wage and fringe benefit expense over five years.

- **Decreased maintenance and repair expense**

Explained in detail in the Business Impacts section of this analysis are the overall savings to FMH in repair and maintenance expense, should this proposal be accepted. In short, upon the decision to retain three low-mile utility vans, purchase three Toyota Yaris Liftbacks and maintain current box truck and Jeep Cherokee utilization, Frederick Memorial Hospital stands to save

29%, or $17,701.45 in courier service fleet repairs and maintenance over five years.

- **Increased courier service customer satisfaction**

Although likely classified as a soft benefit, and assigned no financial value in this case, the realignment of courier routes will very likely increase customer satisfaction with the service. Unfortunately, the current routes, although extremely convenient to the customer, do not represent responsible use of financial and capital equipment resources. Increased efficiency and appropriate use of resources are the goals of the proposed schedule, which can be implemented without fear of mission or patient care degradation. At first, customers will likely oppose the change to their accustomed deliveries and pick-ups, specifically those associated with bulk supplies, dirty linen, and biohazard trash. However, over time, they will begin to realize the dependability of a closely managed courier schedule, and become increasingly efficient themselves regarding supply and storage discipline. As these customers begin to accept an every-other-day courier schedule, they will soon realize that their previous dependence on a daily, multiple-visit courier was inappropriate and inefficient. With a dedicated fleet of three utility vans focusing on this portion of the courier service mission, there exists little doubt that customers will soon support the proposed changes and quickly accept them as principle.

As mentioned previously, routes utilizing the small and fuel-efficient Toyota Yaris will focus primarily on the lucrative, core business of the courier service - frequent and timely pick-up and delivery of laboratory specimens. With a dedicated fleet of three Yaris focusing on this portion of the courier service mission, as well as mail, X-Rays, and medical records, satisfaction will undoubtedly increase among care providers who anxiously await information associated with the timely transportation of these items. Undistracted by bulk supply items, linen, and trash, couriers conducting these routes will surely excel in promptness, to the delight of those

relying on them.

- **Potential increase in laboratory outreach market share**

Although this potential benefit is outside the scope of this business case, and therefore assigned no financial value, it deserves consideration during the decision process. Currently, most, if not all laboratory business conducted in Frederick County is dictated by managed care agreements and contracts. That is, insurance requirements stipulate where specimens are to be sent in order to receive maximum compensation. Currently, due to this phenomenon, very little opportunity exists for the FMH laboratory to increase its outreach market share. However, the negotiation cycle of the many managed care contracts in the county remains perpetual, and opportunity will surely present itself in the future, especially if satisfaction with these contracts dips in any way.

As mentioned above, implementation of the proposed configuration and courier routes will very likely increase satisfaction among healthcare providers awaiting pick-up and delivery of their patient's laboratory specimens. As satisfaction with the FMH courier service reaches new heights, word of mouth will vastly compound this potentially lucrative benefit. In turn, as the multiple players in the managed care negotiation process express their preference for the FMH laboratory, the potential for increased outreach market share becomes very real. Remember, last fiscal year alone, couriers delivered specimens worth $5.4 Million to the FMH laboratory. Although most of these specimens were delivered from satellite facilities, even a 10% increase in external business, via outreach services, could mean an extra $540,000 in additional annual revenue for the hospital, or roughly $2.7 Million over a similar analysis period. In short, the laboratory outreach business is extremely profitable. The potential for Frederick Memorial Hospital to capitalize in this market should not be overlooked. By introducing a newly

revamped courier service, in combination with its already robust laboratory services, FMH will stand ready to compete with noteworthy companies in the area, such as Quest Diagnostics and Lab Corp.

B. 5. Cost Impacts

Cost impacts for this business case are detailed in the Microsoft Excel spreadsheets located in the business impacts section. The main impacts of the proposal consist of an initial $36,888.00 capital equipment investment, and a minor maintenance and repairs savings deficit in year five of the analysis period. Given that the proposed capital equipment investment exceeds the projected FY09 capital equipment expense for the courier service, which is the cost of one new utility van, all opportunity costs associated with the proposed investment must be weighed carefully. In the unlikely event that the additional funds required to purchase new Toyotas are needed to purchase capital equipment associated with projects offering greater return, then the decision to reconfigure the FMH courier service should be postponed. However improbable, it is possible that a $15,000.00 investment made elsewhere within the system could reap returns greater than 2,294%

B. 6. Major Assumptions

- The Frederick Memorial Healthcare System 5% Corporate Cost of Capital is the most accurate discount rate for this project. According to the FMH Vice President for Finance, the finance division uses this standard discount rate when researching most investment opportunities.

- Noting the vast amount of research dedicated to this analysis, FMH will accept the new vehicle purchase offer extended by Mr. Joe Taylor, Certified Sales Manager at DARCARS Toyota in Frederick, Maryland.

- The new vehicle purchase offer extended by Mr. Joe Taylor will remain valid through 2008. A decision to purchase new vehicles from DARCARS Toyota beyond 2008 will require renewed negotiation, due to changing vehicle prices.

- Each Toyota Yaris Liftback will sustain adequate serviceability up to 168,638 miles over the five-year analysis period. According to several Toyota owner testimonials at www.toyotanation.com, properly maintained Toyotas are known to achieve over 300,000 miles.

- Notice of courier service operational changes will be announced to all customers well in advance.

- Frederick Memorial Hospital senior leadership will publicly support courier service operational changes and strongly encourage customer cooperation.

- Fredrick and Mount Airy Immediate Care Centers will resume extend hours of operation, 8:00am to 9:00pm, once human resource requirements have been met.

- Current Frederick Memorial Hospital couriers will be encouraged to embrace changes to the courier service structure, despite potential changes to their work schedules.

- Courier service workload requirements will remain constant throughout the analysis period, or slightly increase due the opening of the new Urbana ancillary services facility.

- The projected annual national average cost per gallon of unleaded fuel published by the Energy Information Administration is the most accurate forecast available.

- Courier service vehicle maintenance will continue to be outsourced, rather than conducted internally.

- FMH will receive $3,000 for each Dodge Ram 1500 utility van traded in toward the purchase of three new Toyota Yaris Liftbacks.

- Based on the volatile recent past of petroleum prices, an annual inflation rate of 12.38% is the most accurate rate to use in calculating nominal annual national average cost per gallon of unleaded fuel, and 13.82% is the most accurate inflation rate for diesel fuel. These rates were calculated based on Energy Information Administration historical pricing data.

- An annual inflation rate of 3% is the most accurate rate to use in calculating other projected costs associated with the analysis, such as repairs and maintenance and insurance.

- Frederick Memorial Hospital will maintain a 2.8% average annual merit increase for all employees.

- The need for T&J Express commercial courier services will not be eliminated entirely – rare after hours and Sunday courier requirements as well as trips to Chantilly, Virginia and Baltimore, Maryland will preclude self-sufficiency.

C. Business Impacts

C. 1. Overall Results

The expected cash flows associated with the current FMH courier service configuration are summarized in Table 1 and graphed in Figure 2. The cash flows associated with the proposed reconfiguration and route realignment are summarized in Table 2 and graphed in Figure 3. Finally, the savings associated with reconfiguration and route realignment are summarized in Table 3 and graphed in Figure 4. The net present values of expense associated with each scenario, as well as the net present value of savings associated with the proposed courier service configuration were calculated using the 5% FMH corporate cost of capital. These figures appear in bold at the bottom of each table. Additionally, the analysis of reconfiguring the courier service predicts a positive cumulative savings of $883,263.53 over the five-year analysis period. This savings is projected based on a total expected new vehicle cost of $36,888.00 over the same period, resulting in a simple return on investment of 2,294%. Other financial measurements are also very positive for the proposed scenario. The payback period for the courier service reconfiguration is only 3.5 months. This is the amount of time needed to overcome the initial $36,888.00 investment. Finally, the net present value of expense associated with the proposed scenario is ($1,837,095.34), which is significantly less than the status quo net present value of ($2,598,654.69).

The following is a line-by-line explanation of how annual expense (fuel, manpower, maintenance and repairs, commercial courier, and insurance) and capital expense (new vehicle expense and lease payments) figures were calculated. Each table refers to multiple Microsoft Excel workbooks, where the figures were computed:

- **Fuel**

Using current FMH courier service schedules to determine location and frequency of stops, as well as T&J Express Delivery, Inc. invoices to determine additional requirements, new routes were configured to meet the entire demand for courier services. Again, aside from rare opportunities to recapture a Chantilly, VA or Baltimore, MD trip, FMH will continue to employ T&J Express for those services. Additionally, the courier service was separated into two service lines – a supply, linen, biohazard trash, and other bulk items service line, and a laboratory, mail, X-Ray, medical records, and other small items service line. Utility vans will be used for the former, and the new Toyota Yaris will be used for the latter. See Appendix E for a depiction of the entire proposed schedule, and Appendix F for a detailed description of each route.

Once the new routes were configured, Google Maps were used to calculate the total miles driven per route. Then, many hours were invested in researching the most accurate current and projected annual national average cost per gallon of unleaded and diesel fuel, which were ultimately located on the Energy Information Administration's web site: www.eia.doe.gov/oiaf/aeo/pdf/aeotab_12.p. The Energy Information Administration provides projected cost data based on 2005 dollars. Therefore, the nominal price per gallon was calculated based on the volatile inflation rate of gasoline and diesel fuel over the past five years, which were calculated to be 12.38% and 13.82%, respectively. Miles driven per month and year

were calculated for the new route schedule, divided by the miles per gallon achievable per vehicle, and then multiplied by the nominal price per gallon of unleaded fuel for the vans, cars, and Jeep, and diesel fuel for the box trucks. In a separate set of data, these fuel consumption figures were then calculated for the new ancillary services facility in Urbana, scheduled to open in late calendar year 2009. Finally, the two sets of data were combined to determine total projected fuel consumption for the analysis period (Appendix G).

- **Manpower**

In brief, the proposed courier service configuration and route schedule require less manpower. Currently, the status quo configuration requires 8.83 full-time equivalent (FTE) couriers and one courier supervisor FTE, for a total of 9.93 FTEs. Based on new workload requirements, the proposed route schedule requires only 7.51 courier FTEs (4.31 FTEs for van and car couriers and 3.2 FTEs for box truck couriers), and one courier supervisor FTE, for a total 8.51 FTEs. Using current courier service wage information and the average annual merit increase percentage obtained from the FMH human resources division, annual wage expense was calculated for the analysis period (Appendix H). Annual fringe benefit expense was then calculated using the standard formula – annual wage expense multiplied by 28%.

- **Maintenance and Repairs**

The calculation of maintenance and repairs for the analysis period was an arduous process. The first variable that had to be determined was an acceptable utility van life span. Through exhaustive deliberation with Mr. Gerwig, and careful consideration of historical vehicle replacement records, it was determined that an acceptable utility van life span was 120,000 miles. It was agreed that the cost of maintaining and repairing a van beyond this milestone far exceeded the benefits of purchasing a new van. Next, via lengthy conversations and hours of

maintenance record reviews with Mr. Gerwig, each variable and variable frequency incorporated into total maintenance and repair expense were determined for the utility vans. With these key variables set, annual maintenance and repair expense was calculated for the status quo configuration (Appendix I).

Prior to determining the maintenance and repair expense for the proposed configuration, weeks of research were invested into finding the best vehicle available to perform the courier service mission. Multiple small, fuel-efficient cars were investigated, to include the Hyundai Accent, Chevrolet Aveo, and the Honda Fit. Each vehicle was evaluated on cost, fuel efficiency, predicted reliability, and owner satisfaction. All new vehicle information was obtained via Consumer Reports and the respective vehicle manufacturer websites. Ultimately, the Toyota Yaris 3-Door Liftback achieved top marks in all categories. The vehicle's Consumer Reports accolades include: #1 Small Car Predicted Reliability, #1 Small Car Hatchback/Wagon Owner Satisfaction, and #6 Most Fuel Efficient Small Car (#1 through #5 were either manual transmission vehicles or cost prohibitive). The decision to recommend the Toyota Yaris was solidified after meeting with Mr. Joe Taylor, Certified Sales Manager at DARCARS Toyota, on multiple occasions to discuss the vehicle. Ultimately, Mr. Taylor extended several attractive offers to FMH, all of which included a six-year/100,000 mile extended warranty and a six-year maintenance protection program, covering most minor maintenance on the Yaris.

Once the decision was set to recommend the Toyota Yaris, a new vehicle lease-buy analysis was needed to determine the most beneficial method of attaining the vehicles. This decision was paramount to calculating maintenance and repair expense, as each option involved contrasting figures. After careful consideration of multiple variables associate with each option, including the number of vehicles best suited for the mission (three or four), the recommendation

to purchase three Toyota Yaris far outweighed the others. Appendix J provides a detailed view of the lease-buy analysis and clearly indicates the financial benefits of this recommendation.

Once these significant decisions were solidified, maintenance and repair calculations were computed for the proposed courier service configuration. Many of the same variables and frequency formulas that were used to calculate maintenance and repair expense for the utility vans were used for the Yaris, with one exception being the cost of major repairs on vehicles over 75,000 and 100,000 miles. Historical courier service repair records indicated that the cost of these repairs for utility vans far exceed the predicted costs of similar repairs for the Yaris. Appendix K provides a detailed view of maintenance and repair expense for the proposed configuration. It is important to note that maintenance and repair expense associated with the box trucks is covered under the lease agreement between Ideal Lease and FMH.

- **Commercial Courier**

As noted, FMH is currently on track to pay $103,410.66 for commercial courier services this fiscal year. This figure was calculated using the first nine weeks of FY07 invoices received from T&J Express Delivery, Inc. Based on those invoices, a weekly commercial courier expense average of $1,988.66 was multiplied by 52, producing the above annual expense. Annual expense for the status quo scenario was then calculated using a 3% inflation rate, for a total cumulative expense of $565,491.88 over the five-year analysis period.

Under the proposed scenario, FMH couriers are expected to recapture 71% of this expense via the expansion of one weekday route and a more robust Saturday route. Additionally, box truck drivers will be expected to contribute to this effort by allocating one hour on Saturdays and two hours on Sundays to picking up laboratory specimens from the Mount Airy and Frederick immediate care facilities using one of the unmanned Toyotas. Cumulative commercial

courier expense projected for the proposed scenario is $161,689.94 over the five-year analysis period.

- **Insurance**

Current courier service insurance premiums were used to calculate insurance expense for the status quo scenario. An average annual inflation rate of 3% was used to calculate the total insurance expense over the five-year analysis period. For the proposed scenario, annual insurance premium quotes for the Toyota Yaris were obtained from the insurance company currently providing coverage for the courier fleet. Three Yaris annual premiums were then substituted for four utility van premiums, resulting in a total insurance expense for the proposed configuration.

- **New Vehicle Expense**

Using the acceptable utility van life span of 120,000 miles, the current configuration route schedule, and current utility van odometer readings, utility van replacements were projected for the status quo scenario. Given the age and high mileage of the current fleet, five vans will need replaced over the five-year analysis period. The capital equipment savings associated with the proposed configuration is slightly elevated in FY10. This is attributed to purchasing two new vans in a single year under the current configuration. Notice, however, that under the current configuration, there is no capital equipment expense requirement in FY12. Given the current configuration route schedule and the acceptable 120,000-mile life span of utility vans, a properly managed utility van replacement cycle will dictate the purchase of one van per year for all years beyond the analysis period. Therefore, the capital equipment savings associated with the proposed configuration will fluctuate slightly for those years, largely due to the inflating prices of new vehicles. However, future capital equipment savings associated with

the proposed configuration will likely remain proportional to those in the analysis period.

Under the proposed scenario, four high-mileage utility vans will be traded in toward the purchase of three new Toyota Yaris, which will not need replaced during the analysis period. The three remaining lower-mileage vans will be retained in order to perform the supply courier service mission. Given that these vans will drive a combined 10,296 miles per year, they will not need replaced during the analysis period.

- **Lease Payments**

The box truck lease agreement was recently renewed and payments are fixed for the entire analysis period. No additional vehicles will be leased under the proposed configuration.

C. 2. Benefits

At this point, it is important to note that all seven variables analyzed during this analysis produced benefits under the proposed courier service configuration with net present values ranging from $15,459.22 to $348,643.62. The largest projected five-year benefit from reconfiguring the courier service and realigning the route schedule is the $348,643.62 net present value of commercial courier service savings. Again, this is the present value of the five-year, cumulative savings on commercial courier services associated with the proposed configuration. As mentioned, this represents a 71% recoupment of current and projected commercial courier expense associated with the status quo. Following commercial courier savings, the second largest five-year benefit from the proposed courier service reconfiguration is the savings associated with a decrease in manpower requirements, including fringe benefits. The net present value of manpower savings for the five-year analysis period totals $223,579.45.

Despite the projected savings on manpower, the intent of this business case is not to recommend quick elimination of courier service personnel. Rather, adoption of the accepted attrition practice is suggested, allowing the service to achieve proposed manpower levels via elective termination or reassignment. However, in order for the total projected savings to be realized, this employee-friendly approach to manpower reduction must be carefully executed. That is, the total projected manpower savings associated with the proposed configuration will be achieved only if manpower is at the recommended level on the first day of implementation. Therefore, keeping in mind that employee shuffling can be a long and difficult process, immediate action is recommended upon the decision to implement this proposal.

In addition to the timely execution of manpower levels, several other variables could effect realization of the projected manpower savings associated with the proposed configuration. First, if both employer and employee agree to reassignment within the organization as a solution, the process will require careful consideration. For example, if the employee agreeing to be reassigned is not fully qualified to fill existing vacant positions and training is required, the cost of that training must be deducted from the projected manpower savings. Second, if the decision is made to allow manpower to naturally attrit to the recommended level, courier service employee turnover rates should be consulted in order to determine the approximate timeframe required to reach that level. Each day that passes with excess manpower will slowly erode the projected savings. Finally, should employee termination prove to be the most preferable option, severance benefits, when applicable, will also decrease the projected savings. Despite these sensitive personnel considerations, the reduction of 1.42 FTEs required for the proposed configuration should not prove excessively difficult.

Benefits associated with the proposed configuration continue with a $87,995.51 net present value of savings on fuel. This figure reflects the present value of savings on gasoline and diesel fuel associated with the proposed courier service configuration. The projected benefit from capital equipment savings follows closely with a net present value of $70,538.18. This is the present value of savings on new vehicles projected for the proposed configuration. Finally, insurance and maintenance and repairs complement the analysis with projected net present values of $15,459.22 and $16,342.54 respectively.

Table 1
Annual cash flows and overall NPV for the current courier service configuration (5% CCC).

Annual Expense	**FY08 (base FY)**	**FY09**	**FY10**	**FY11**	**FY12**	**FY13**
Fuel						
Van	($24,231.73)	($27,231.61)	($30,602.89)	($34,391.53)	($38,649.20)	($43,433.97)
Box Truck	($6,521.98)	($7,329.40)	($8,236.78)	($9,256.50)	($10,402.45)	($11,690.27)
Jeep	($1,225.66)	($1,377.40)	($1,547.92)	($1,739.55)	($1,954.91)	($2,196.93)
Add Urbana in 2009	-	($2,544.05)	($4,288.50)	($4,819.42)	($5,416.07)	($6,086.58)
Manpower						
Supervisor	($42,265.60)	($43,449.04)	($44,665.61)	($45,916.25)	($47,201.90)	($48,523.56)
Courier	($234,408.93)	($240,972.38)	($247,719.60)	($254,655.75)	($261,786.11)	($269,116.13)
Benefits	($77,468.87)	($79,638.00)	($81,867.86)	($84,160.16)	($86,516.64)	($88,939.11)
Maintenance & Repairs	($21,697.00)	($13,370.53)	($14,899.29)	($8,407.72)	($11,997.21)	($12,260.60)
Commercial Courier	($103,410.66)	($106,512.98)	($109,708.37)	($112,999.62)	($116,389.61)	($119,881.30)
Insurance	($13,417.00)	($13,819.51)	($14,234.10)	($14,661.12)	($15,100.95)	($15,553.98)
Capital Expense						
New Vehicle Expense	($22,000.00)	($22,660.00)	($46,679.60)	($24,039.99)	-	($25,504.03)
Lease payments (fixed contract)	($2,375.00)	($2,375.00)	($2,375.00)	($2,375.00)	($2,375.00)	($2,375.00)
Net Annual Expense	($549,022.43)	($561,279.90)	($606,825.53)	($597,422.61)	($597,790.06)	($645,561.44)
Net Present Value of Expense	**($2,598,654.69)**					

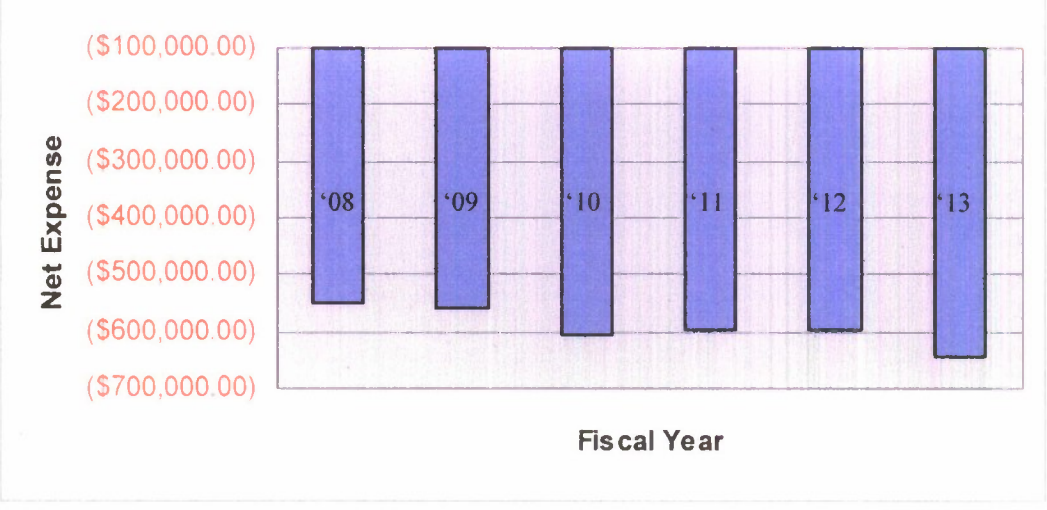

Figure 2. Cumulative cash flow for the current courier service configuration.

Table 2
Annual cash flows and overall NPV for the proposed courier service configuration (5% CCC).

Annual Expense	FY08 (base FY)	FY09	FY10	FY11	FY12	FY13
Fuel						
Toyota Yaris	-	($10,822.93)	($12,162.80)	($13,668.56)	($15,360.73)	($17,262.39)
Van	($24,231.73)	($2,641.90)	($2,968.96)	($3,336.52)	($3,749.58)	($4,213.78)
Box Truck	($6,521.98)	($7,055.34)	($7,793.12)	($8,439.72)	($9,240.49)	($10,395.05)
Jeep	($1,225.66)	($1,297.57)	($1,393.80)	($1,507.74)	($1,658.02)	($1,830.49)
Add Urbana in 2009		($1,476.62)	($2,489.13)	($2,797.29)	($3,143.59)	($3,532.77)
Manpower						
Supervisor	($42,265.60)	($43,449.04)	($44,665.61)	($45,916.25)	($47,201.90)	($48,523.56)
Courier	($234,408.93)	($202,721.72)	($208,397.93)	($214,233.07)	($220,231.60)	($226,398.08)
Benefits	($77,468.87)	($68,927.81)	($70,857.79)	($72,841.81)	($74,881.38)	($76,978.06)
Maintenance & Repairs	($21,697.00)	($5,590.18)	($7,079.32)	($6,487.09)	($10,996.70)	($13,080.62)
Commercial Courier	($103,410.66)	($30,455.04)	($31,368.69)	($32,309.75)	($33,279.04)	($34,277.42)
Insurance	($13,417.00)	($10,447.02)	($10,760.43)	($11,083.25)	($11,415.74)	($11,758.22)
Capital Expense						
New Vehicle Expense	($22,000.00)	($36,888.00)	-	-	-	-
Lease payments (fixed contract)	($2,375.00)	($2,375.00)	($2,375.00)	($2,375.00)	($2,375.00)	($2,375.00)
Net Annual Expense	($549,022.43)	($424,148.16)	($402,312.60)	($414,996.05)	($433,533.78)	($450,625.43)
Net Present Value of Expense	($1,837,095.34)					

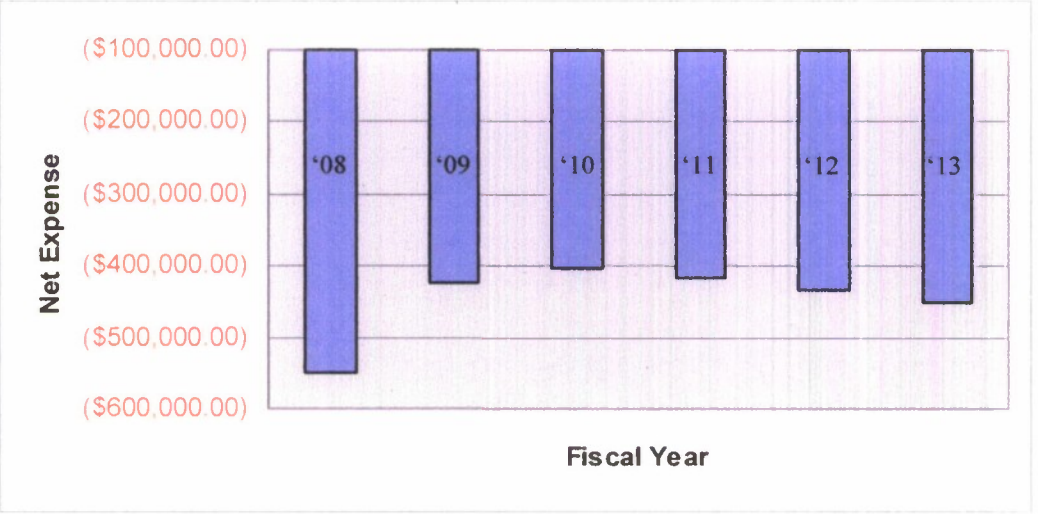

Figure 3. Cumulative cash flow for the proposed courier service configuration.

Table 3
Annual cash flow savings and overall NPV of savings for the proposed courier service configuration (5% CCC).

Annual Savings	**FY08 (base FY)**	**FY09**	**FY10**	**FY11**	**FY12**	**FY13**
Fuel	-	$15,188.12	$17,868.27	$20,457.17	$23,270.22	$26,173.27
Manpower	-	$48,960.84	$50,331.74	$51,741.03	$53,189.78	$54,679.09
Maintenance & Repairs	-	$7,780.36	$7,819.97	$1,920.63	$1,000.51	($820.02)
Commercial Courier	-	$76,057.94	$78,339.68	$80,689.87	$83,110.56	$85,603.88
Insurance	-	$3,372.49	$3,473.66	$3,577.87	$3,685.21	$3,795.76
Capital Expense						
New Vehicle Expense	-	($14,228.00)	$46,679.60	$24,039.99	-	$25,504.03
Lease payments (fixed contract)	-	-	-	-	-	-
Net Annual Savings	-	$137,131.74	$204,512.92	$182,426.57	$164,256.28	$194,936.01
Net Present Value of Savings	**$761,559.36**					

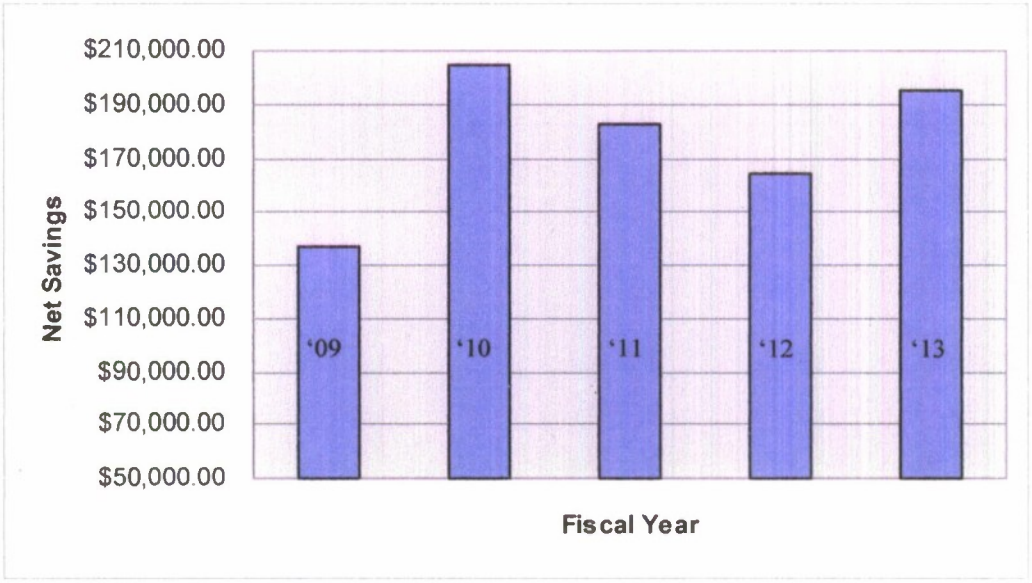

Figure 4. Cumulative cash flow savings for the proposed courier service configuration.

C. 3. Costs

Tables 2 and 3 also summarize the expected cost consequences of reconfiguring the courier service. The major cost impacts include the one-time new vehicle expense of $36,888.00, which includes an expected $12,000.00 utility van trade-in credit. Actual purchase price for three Yaris without trade-in credit is $48,888.00. According to the Kelly Blue Book, the trade-in value of one, good condition 2001 Dodge Ram Van 1500 with 135,000 miles is $3,270.00. Since no commitment has been made by Darcars Toyota to honor full Kelly Blue Book Value, $3,000.00 per van was used to calculate total trade-in value. When using Table 3 to evaluate costs, the new vehicle expense associated with the proposed scenario represents a savings deficit of only $14,228.00 when compared to the expected new vehicle expense associated with the status quo. Additionally, year five of the analysis period yields a minor savings deficit in maintenance and repairs when compared to the status quo, as that is when two vans and all cars will begin requiring repairs associated with an aging fleet.

D. Sensitivities, Risks, and Contingencies

Realization of the total savings associated with the proposed courier service reconfiguration and route realignment will be sensitive to an unexpected increase in workload once the proposal has been implemented. However, this sensitivity is moderate at worst. Given the sizeable savings expected under the proposed configuration, an increase in courier service workload, which may result in the need for an additional courier FTE and one additional Toyota Yaris, will have an impact on the overall results, but will not alter the recommendation to reconfigure the courier service. For example, purchasing an additional Toyota Yaris, for a total of four new vehicles, will increase capital equipment expense by only $16,296.00, resulting in a

slightly lower cumulative capital equipment savings of $65,699.62. Additionally, purchasing one additional Yaris will increase maintenance and repairs and insurance expense by $257.51 and $6,062.18 respectively. Although the cost of hiring an additional courier is significant, doing so will not effect the recommendation to reconfigure the FMH courier service. One additional courier FTE reduces the cumulative manpower savings to $76,255.22 over the five-year analysis period. Finally, should increased courier service workload result in the unlikely addition of another courier route with similar average annual miles (16,683), the increase in fuel expense will reduce the five-year cumulative savings from $102,957.05 to $90,501.88. In total, the addition of one Toyota Yaris, one courier FTE, and one courier route to the proposed configuration would decrease the cumulative savings from $883,263.53 to $709,499.50 over the five-year analysis period. Clearly, even a four-Yaris courier service configuration far outweighs the status quo. Therefore, in the unlikely event that the proposed configuration is deemed inadequate, it would be in Frederick Memorial Hospital's best financial interests to pursue this contingency, versus doing nothing.

Another moderate sensitivity to realizing the total savings associated with the proposed courier service reconfiguration and route realignment is an increase in workload for the supply and larger item courier service line once the proposal has been implemented. At most, this increased workload would result in the slight expansion of the proposed utility van routes, and possibly the addition of one FTE. Given the contingency presented above, these financial calculations are unnecessary. Furthermore, should the workload for both service lines slightly increase, as described here, the necessary changes would still not effect the recommendation to reconfigure the FMH courier service.

At first glance, this analysis might be subjected to criticism on the grounds of sensitivity within the economy, such as the price of fuel, or the inflation rate. These arguments might posit that a sudden dramatic increase in the price of fuel or inflation rate would result in considerably less savings from a reconfigured courier service. However, the specific price of fuel and the precise inflation rate used in this case are somewhat immaterial. Whether the average price per gallon during any given year is five cents or five dollars, the magnitude of savings associated with the proposed courier service configuration remains significant. The rate of inflation has the same effect. Whether an oil change costs $21.00 or $200.00 in 2013, or whether a courier's wage is $13.00 or $30.00 per hour, the outcome of this analysis remains constant; the savings associated with the proposed configuration remain significant. Given that this proposal is centered on a leaner, more efficient courier service, the expense associated with marked increases in these variables clearly supports reconfiguration.

E. Recommendations and Conclusions

Based on months of research and the analysis presented here, it is highly recommended that Frederick Memorial Hospital accept the proposal to reconfigure its courier service by way of vehicle diversification and route realignment. Additionally, it is recommended that Frederick Memorial Hospital take the following steps to help ensure successful implementation and realization of benefits that provide the motivation for this proposal:

- During upcoming fiscal year 2008 budget planning sessions, allocate resources necessary to fund this proposal.

- Initiate formal discussions with Mr. Joe Bushong Taylor, Certified Sales Manager at Darcars Toyota of Frederick, 5293 Buckeystown Pike, Frederick, MD 21704, 1-301-696-6300. Present him the offer extended to FMH on or about October 22, 2007 (see original email, Appendix L). Negotiate trade-in value for four 2001 Dodge Ram Van 1500s based on the attached Kelly Blue Book trade-in pricing report (Appendix M). Initiate purchase of three Toyota Yaris with expected delivery date no later that June 01, 2008.

- Once courier service personnel have been respectfully notified of impending changes, and all manpower adjustments have been privately negotiated, draft a formal announcement to be sent over email and published in the FMH newsletter three months prior to the July 01, 2008 start date. Within the announcement, emphasize the exhaustive research committed to the project and encourage cooperation and compliance. Have the announcement signed by Mr. Rosendale and endorsed by Mr. Kleinhanzl.

- Prepare new vehicles for courier service operations upon delivery, including HAZMAT certification and application of FMH decals. Conduct several practice runs with the new vehicles in accordance with the proposed schedule; make minor route changes as necessary.

- Make additional announcements of the new courier schedule to all customers one month in advance. Emphasize the new supply, linen, and biohazard trash schedule and encourage compliance prior to the July 01, 2008 start date.

- Begin personnel adjustments as soon as the courier service mission permits; preferably prior to the July 01, 2008 start date. Assign couriers to vehicles in accordance with their preferences, and begin negotiating reassignment or voluntary termination of 1.42 courier FTEs.

- Begin full implementation of new courier service procedures no later than July 01, 2008, maintaining precise records of all financial and performance indicators outlined in this case.

- The postal model employed at Corporate Occupational Health Solutions should be the model for all FMH satellite facilities. Allowing external facilities to send and receive their own USPS mail through the use of pre-paid USPS postage machines will alleviate this significant burden on the courier service. At a minimum, FMH should purchase USPS postage machines for its finance and Rose Hill facilities.

- Request, review, and closely monitor reports on the financial measures outlined in this analysis, specifically fuel expense, maintenance and repair expense, commercial courier expense, and vehicle mileage. Address variance and implement adjustments as required, maintaining progress toward the important objectives outlined in this analysis.

Reference

Schmidt, M. J. (2002). *The Business Case Guide* (2nd ed.). Boston: Solution Matrix Ltd.

Appendix A
Typical items transported by the FMH courier service

Interoffice Mail

United States Post Office Mail

Soiled Linen

Clean Linen

Biohazard Trash

Cash and Checks

X-Rays

Laboratory Specimens

Medical Records

Pre-Surgical Admission Screening Documents

Prescription Drugs

Office Supplies

Medical Supplies

Office Equipment

Medical Equipment

Surgical Instruments

Food for Parties/Receptions

Coffee Supplies

Appendix B
07SEP07 Ride along with courier on route 3, FMH courier service

0830 – Arrive Material Distribution Center (MDC); load van with any outgoing supplies, which are very minimal on this day; depart MDC for first stop of the day.

0842 – Arrive Parkview Medical Group (PMG), Rosehill; pick up medical records for MDC, mail, and soiled linen.

0915 – Arrive PMG, Myersville (small doctor's office); pick up locked cash bag and medical records.

0937 – Arrive Frederick Memorial Hospital (FMH); multiple stops within the hospital; give records to box truck courier, who takes them to the MDC; drop off mail and soiled linen; check pharmacy (something for Immediate Care, Frederick, which he will pick up later in the day); drop off cash bag at cashier's cage; pick up empty cash bag for Wellness Center; check radiology, pick up X-Rays for Corporate Occupational Health (Corp OHS); Check sterile processing for instruments (nothing); check receiving, pick up items for finance and PMG Rosehill; check mail room, pick up mail for finance, Wellness Center, and finance; pick up coffee supplies for finance in the cafeteria.

1010 – Arrive Finance (Wies Festival); drop off coffee supplies and mail; pick up mail (interoffice and USPS – large amount) and bank deposit.

1020 – Arrive Corp OHS; drop off interoffice mail and X-Rays; pick up interoffice mail and X-Rays. *Note*: Corp OHS does not have USPS mail for pick up because they have their own postage machine. This is the recommended model for all FMH outlying facilities.

1045 – Arrive Wellness Center, Francis Scott Key Mall; drop off interoffice mail and empty cash bag; pick up soiled linen (small bag now, but Terry says it's a large amount on Mondays).

1055 – Bank deposit for finance – Frederick County Bank

1100 – Arrive PMG Rosehill; drop off PMG, Myersville cash bag and mail from FMH. *Note*: cash bag is processed by PMG Rosehill, then picked up by another courier and taken to the cashier at FMH. Terry will then pick it up from the cashier and take it to finance.

1110 – Arrive Foris Surgical Center; pick up pre-admission screening (PAS) envelope, interoffice mail and X-Rays.

1130 – Arrive Hospice; pick up mail; drop off mail and empty cash bags.

1145 – Arrive FMH; check same stops as previously noted; pick up item for Immediate Care, Frederick; lunch.

1310 – Arrive Immediate Care, Frederick; drop off pharmacy item; pick up red bag trash, soiled

linen and laboratory specimens.

1330 – Arrive Wellness Center, Francis Scott Key Mall; drop off mail; pick up mail and soiled linen.

1345 – Arrive Finance (Wies Festival); drop off cash bag, mail and employee prescriptions from pharmacy; pick up mail.

1400 – Arrive Corp OHS; pick up X-Rays only; again, no USPS.

1415 – Arrive doctor's offices on Thomas Johnson Drive; drop off lab supplies and toner cartridge; pick up specimens and PAS envelope.

1500 – Arrive FMH; drop off X-Rays, PAS envelope, soiled linen, red bag trash, mail, and lab specimens; pick up one X-Ray, lab specimens for Department of Health, mail, and supplies for Cancer Treatment Center (CTC).

1530 – Arrive Frederick County Department of Health; drop off specimens; pick up lab reports.

1600 – Arrive Foris Surgical Center; drop off mail and X-Rays; pick up lab specimens, mail and X-Rays.

1620 – Arrive CTC; drop off supplies; pick up mail.

1635 – Arrive FMH; drop off mail, specimens, X-Rays, and PAS envelope.

1700 – Arrive MDC; end of route

FY 07 T&J Express Delivery, Inc. Most Common FMH Routes

	Total Weekday	Total Weekend	Average/ week	Average/ weekend	Average/ Fiscal Year
Immediate Care, Mt. Airy to FMH	87	25	5.12	1.47	342.59
Immediate Care, Frederick to FMH	67	25	3.94	1.47	281.41
Local (Frederick) to FMH	42	6	2.47	0.35	146.82
FMH to Chantilly, VA	36	16	2.12	0.94	159.06
Jefferson School to FMH	22	1	1.29	0.06	70.35
FMH to Baltimore	8	0	0.47	0.00	24.47
Middletown to FMH	15	2	0.88	0.12	52.00
Walkersville to FMH	12	1	0.71	0.06	39.76
FMH to Bethesda	1	1	0.06	0.06	6.12
Woodsboro to FMH	1	0	0.06	0.00	3.06
Shadygrove to FMH	1	1	0.06	0.06	6.12
Hagerstown to FMH	1	0	0.06	0.00	3.06
Average Totals per Week, Weekend, & FY			**17.24**	**4.59**	**1134.82**

Source: Random sample of 13 weekly T&J Express Delivery, Inc. invoices from FY 07 (which cover 17 billable weeks of deliveries).
8/6/2006 8/20/2006 9/17/2006 9/24/2006 10/1/2006 10/8/2006
10/15/2006 11/5/2006 11/16/2006 11/19/2006 5/20/2007 6/3/2007
6/10/2007

FY 07 Cost to FMH **$82,455.13**

FY 08 T&J Express Delivery, Inc. Most Common FMH Routes (to date)

	Total Weekday	Total Weekend	Average/ week	Average/ weekend	Average/ Fiscal Year
Immediate Care, Mt. Airy to FMH	71	17	7.89	1.89	508.44
Immediate Care, Frederick to FMH	37	16	4.11	1.78	306.22
Local (Frederick) to FMH	70	10	7.78	1.11	462.22
FMH to Chantilly, VA	31	12	3.44	1.33	248.44
Jefferson School to FMH	30	0	3.33	0.00	173.33
FMH to Baltimore	22	2	2.44	0.22	138.67
Middletown to FMH	25	0	2.78	0.00	144.44
Walkersville to FMH	4	0	0.44	0.00	23.11
FMH to Damascus	2	0	0.22	0.00	11.56
FMH to Brunswick	2	0	0.22	0.00	11.56
Shadygrove to FMH	4	0	0.44	0.00	23.11
Hagerstown to FMH	4	0	0.44	0.00	23.11
Average Totals per Week, Weekend, & FY			**33.56**	**6.33**	**2074.22**

Source: All T&J Express Delivery, Inc. invoices from FY 08 (9 weeks of invoices).
6/17/2007 7/14/2007 7/15/2007 7/22/2007 7/29/2007 8/5/2007
8/12/2007

Estimated FY 08 Cost to FMH **$103,410.66**

Trending nearly twice the number of average deliveries in FY07.

Appendix D
Scenario illustrations

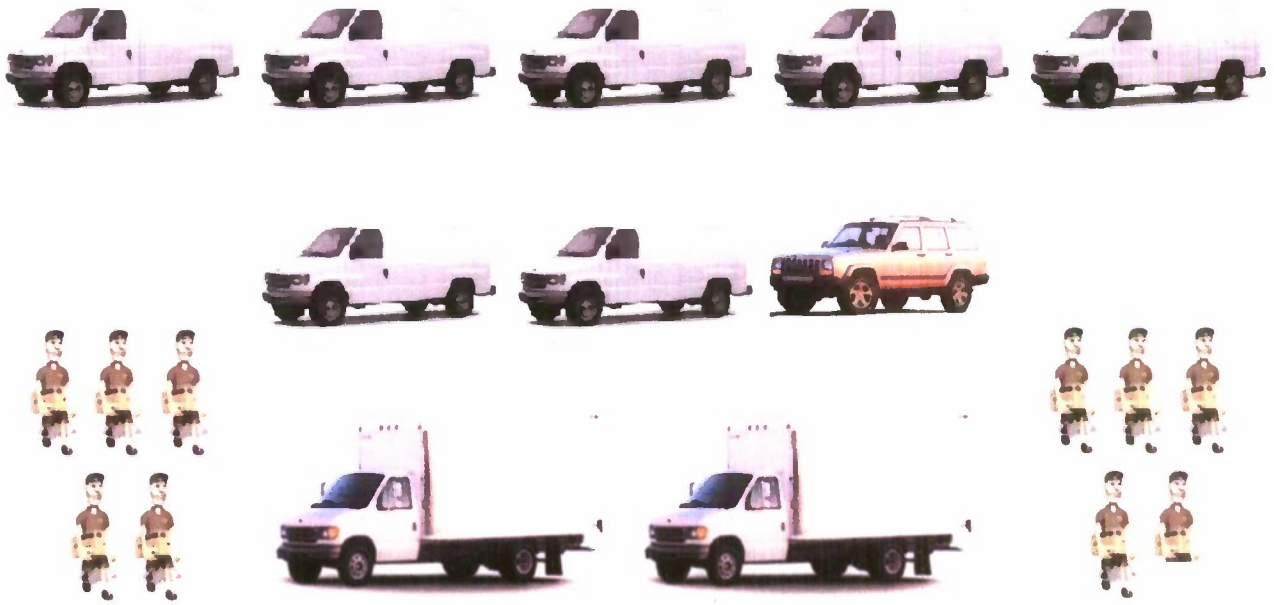

Figure 3. Current configuration (status quo). Five-year cumulative expense: ($3,008,879.54)

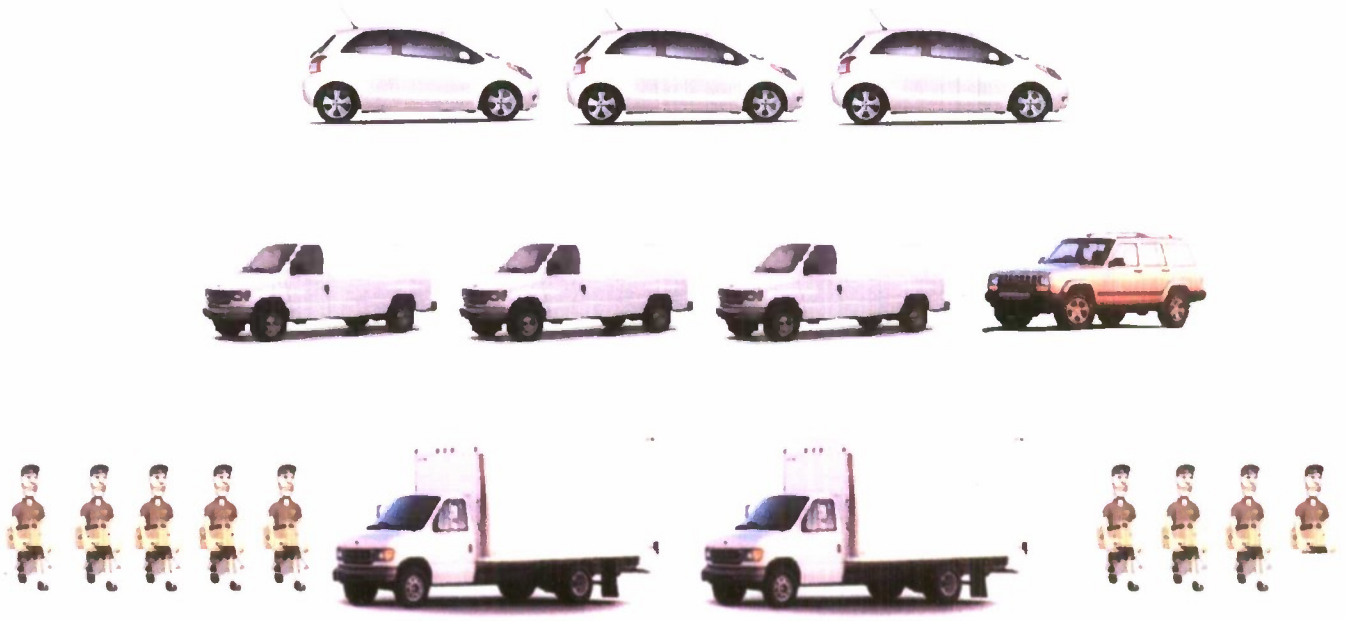

Figure 4. Proposed configuration. Five-year cumulative expense: ($2,125,616.02)

Appendix E
Proposed route schedule

		Mon-Wed-Fri		Monday thru Friday			Saturday	Sunday
		Van Rt. 1	Van Rt. 2	Car Rt. 3	Car Rt. 4	Car Rt. 5	Car Rt. 6	Car Rt. 7
		Name:	Name:	Name:	Name:		Name:	Name:
7am	:00			MDC				
	:05							
	:10							
	:15			FMH				
	:20							
	:25							
	:30	MDC	MDC					
	:35			CTC				
	:40							
	:45							
	:50			Rosehill				
	:55							
8am	:00						MDC	
	:05			FMH				
	:10							
	:15						FMH	
	:20			CTC				
	:25							
	:30	Mt. Airy	CTC					
	:35			Rosehill				
	:40							
	:45						Rosehill	
	:50			FMH				
	:55							
9am	:00		Rosehill				FMH	
	:05			Crestwood				
	:10							
	:15			Fred IC			Fred IC	
	:20							
	:25			OHS Finance				
	:30	FMH					FMH	
	:35							
	:40			CTC				
	:45			FMH				
	:50	MDC						
	:55							
10am	:00		FMH					
	:05							
	:10						Mt. Airy	
	:15		MDC	Mt. Airy				
	:20							
	:25							
	:30	Fred IC	CTC					
	:35							
	:40							
	:45						Rosehill	
	:50			CTC				
	:55							
11am	:00	Crestwood	Rosehill	FMH			FMH	
	:05							
	:10							
	:15							
	:20			Rosehill				
	:25							
	:30	FSK	Urbana in 2009		MDC		Lunch	
	:35			CTC				
	:40				FMH			
	:45			FMH				
	:50							
	:55							
12pm	:00	YMCA	FMH	Crestwood	TJ Drive		FMH	
	:05							
	:10							
	:15			Fred IC			Rosehill	
	:20							
	:25			FMH				
	:30	Unload Additional deliveries as needed	Unload Additional deliveries as needed	Lunch				
	:35						Buckingham's Choice as needed	
	:40							
	:45				FMH			
	:50							
	:55							
1pm	:00	MDC	MDC	CTC	TJ Drive	MDC	Fred IC	
	:05							
	:10							
	:15						FMH	
	:20			Rosehill				
	:25							
	:30					Mt. Airy	Rosehill	
	:35			FMH				
	:40							
	:45				FMH		Tollhouse	
	:50			CTC (Urbana in 2009)				Mt. Airy*
	:55							
2pm	:00				Lunch		FMH	
	:05			Rosehill (Urbana in 2009)				
	:10					CTC		
	:15							
	:20			FMH		FMH		Fred IC
	:25						Mt. Airy	
	:30				FMH			FMH
	:35							
	:40			Crestwood	Hospice			
	:45					Walkersville		
	:50			Fred IC				
	:55							MDC

		Mon-Wed-Fri		Monday thru Friday			Saturday	Sunday
		Van Rt. 1	Van Rt. 2	Car Rt. 3	Car Rt. 4	Car Rt. 5	Car Rt. 6	Car Rt. 7
		Name:	Name:	Name:	Name:	Name:	Name:	
3pm	:00			OHS Finance	Rosehill	Woodsboro	Fred IC	
	:05							
	:10							
	:15			FMH		Union Bridge	FMH	
	:20				TJ Drive/ Dept of Health/ Bank as needed			
	:25							
	:30			MDC			MDC	
	:35							
	:40							
	:45							
	:50							
	:55							
4pm	:00				FMH			
	:05					FMH		
	:10							
	:15							
	:20							
	:25							
	:30				Mt. Airy			
	:35					Myersville		
	:40							
	:45							
	:50							
	:55							
5pm	:00							
	:05				Crestwood	Middletown		
	:10							
	:15				Fred IC			
	:20							
	:25				FMH			
	:30							
	:35					FMH		
	:40							
	:45				Rosehill			
	:50					Lunch		
	:55							
6pm	:00				FMH			
	:05							
	:10							
	:15				TJ Drive			
	:20					FMH		
	:25							
	:30							
	:35					Urbana in 2009		
	:40							
	:45							
	:50							
	:55				Rosehill			
7pm	:00							
	:05							
	:10							
	:15							
	:20				Tollhouse			
	:25							
	:30				FMH	Mt. Airy/ Rosehill/ Tollhouse/ Baltimore/ Chantilly/ Pharmacy/ Fred IC/ STAT requests as needed --Courier located in the Lab. standing by--		
	:35							
	:40							
	:45				MDC			
	:50							
	:55							
8pm	:00							
	:05							
	:10							
	:15							
	:20							
	:25							
	:30							
	:35							
	:40							
	:45							
	:50							
	:55					Mt. Airy	Mt. Airy*	Mt. Airy*
9pm	:00							
	:05							
	:10							
	:15							
	:20					Fred IC	Fred IC	Fred IC
	:25							
	:30					FMH	FMH	FMH
	:35							
	:40							
	:45							
	:50							
	:55					MDC	MDC	MDC

Note: This route schedule is for guidance purposes only. Courier location at any given time is subject to change, due to traffic, emergencies, illness, etc.

*In the **fall of 2009** one van route (2) and two car routes (3 & 5) will need to be adjusted to incorporate deliveries and pick ups at the new **Urbana** ancillary facility.*

** Box Truck drivers use a car to pick up lab specimens from Mt. Airy and Frederick Immediate Care on weekends.*

Van Route #1

	Miles	Minutes
MDC to Mt. Airy	18.60	28
Mt. Airy to FMH	18.40	21
FMH to MDC	1.30	5
MDC to Fred IC	6.90	13
Fred IC to Crestwood	3.50	9
Crestwood to FSK	2.00	5
FSK to YMCA	3.00	9
YMCA to MDC	1.30	5
	55	95
Miles per week	165.00	
Miles per year	8,580.00	

Van Route #2

	Miles	Minutes
MDC to CTC	1.30	5
CTC to Rosehill	1.30	4
Rosehill to FMH	1.60	6
FMH to MDC	1.30	5
MDC to CTC	1.30	5
CTC to Rosehill	1.30	5
Rosehill to FMH	1.60	6
FMH to MDC	1.30	5
	11	41
Miles per week	33.00	
Miles per year	1,716.00	

Car Route #3

	Miles	Minutes
MDC to FMH	1.30	5
FMH to CTC	.25	5
CTC to Rosehill	1.60	6
Rosehill to FMH	1.60	6
FMH to CTC	.25	5
CTC to Rosehill	1.60	6
Rosehill to FMH	1.60	6
FMH to Crestwood	3.00	9
Crestwood to Fred IC	3.50	9
Fred IC to OHS	1.70	6
OHS to CTC	3.00	7
CTC to FMH	.25	5
FMH to Mt. Airy	18.80	23
Mt. Airy to CTC	18.80	23
CTC to FMH	.25	5
FMH to Crestwood	3.00	9
Crestwood to Fred IC	3.50	9
Fred IC to FMH	2.50	7
FMH to CTC	.25	5
CTC to Rosehill	1.60	6
Rosehill to FMH	1.60	6
FMH to CTC	.25	5
CTC to Rosehill	1.60	6
Rosehill to FMH	1.60	6
FMH to CTC	.25	5
CTC to Rosehill	1.60	6
Rosehill to FMH	1.60	6
FMH to Crestwood	3.00	9
Crestwood to Fred IC	3.50	9
Fred IC to OHS	1.70	6
OHS to FMH	3.00	7
FMH to MDC	1.30	5
	92.80	255
Miles per week	464.00	
Miles per year	24,128.00	

Car Route #4

	Miles	Minutes
MDC to FMH	1.30	5
FMH to TJ Drive	3.70	8
TJ Drive to FMH	2.40	6
FMH to TJ Drive	3.70	8
TJ Drive to FMH	2.40	6
FMH to Hospice	.25	5
Hospice to Rosehill	1.80	7
Rosehill to TJ Drive	3.00	6
TJ Drive to FMH	2.40	6
FMH to Mt. Airy	18.80	23
Mt. Airy to Crestwood	15.70	19
Crestwood to Fred IC	3.50	9
Fred IC to FMH	2.50	7
FMH to Rosehill	1.60	6
Rosehill to FMH	1.60	6
FMH to TJ Drive	3.70	8
TJ Drive to Rosehill	3.00	6
Rosehill to Tollhouse	3.50	7
Tollhouse to FMH	2.70	6
FMH to MDC	1.30	5
	78.85	159
Miles per week	394.25	
Miles per year	20,501.00	

Car Route #5

	Miles	Minutes
MDC to Mt. Airy	18.60	28
Mt. Airy to CTC	18.80	23
CTC to FMH	0.25	5
FMH to Walkersville	6.00	11
Walkersville to Woodsboro	4.60	9
Woodsboro to Union Bridge	10.50	20
Union Bridge to FMH	19.60	34
FMH to Myersville	13.00	20
Myersville to Middletown	5.50	12
Middletown to FMH	8.50	17
FMH to Mt. Airy	18.80	23
Mt. Airy to Fred IC	17.30	21
Fred IC to FMH	2.50	7
FMH to MDC	1.30	5
	145.25	235
Miles per week	726.25	
Miles per year	37,765.00	

Car Route #6 (Sat.)

	Miles	Minutes
MDC to FMH	1.30	5
FMH to Rosehill	1.60	6
Rosehill to FMH	1.60	6
FMH to Fred IC	2.50	7
Fred IC to FMH	2.50	7
FMH to Mt. Airy	18.80	23
Mt. Airy to Rosehill	19.70	24
Rosehill to FMH	1.60	6
FMH to Rosehill	1.60	6
Rosehill to Buck Choice	10.80	18
Buck Choice to Fred IC	8.40	16
Fred IC to FMH	2.50	7
FMH to Rosehill	1.60	6
Rosehill to Tollhouse	3.50	7
Tollhouse to FMH	2.70	6
FMH to Mt. Airy	18.80	23
Mt. Airy to Fred IC	17.30	21
Fred IC to FMH	2.50	7
FMH to MDC	1.30	5
	120.60	206
Miles per week	120.60	
Miles per year	6,271.20	

Car Route #7 (Sun.)

	Miles	Minutes
This route twice		
MDC to Mt. Airy (2)	37.20	56
Mt. Airy to Fred IC (2)	34.60	42
Fred IC to FMH (2)	5.00	14
FMH to MDC (2)	2.60	10
	79.40	122
Miles per week	79.40	
Miles per year	4,128.80	

Summary

	w/o Urbana	w/ Urbana *
Total Car miles per year	92,794	101,183
Average miles/car/year (3)	30,931	33,728
Average miles/car/year (4)	23,199	25,296
Total Car miles in 5 years	463,970	505,915
Average miles/car in 5 years (3)	154,657	168,638
Average miles/car in 5 years (4)	115,993	126,479

** Note: Reflects only eight months of Urbana in FY10*

Van Route #1		
	Miles	**Minutes**
MDC to Mt. Airy	18.60	28
Mt. Airy to FMH	18.40	21
FMH to MDC	1.30	5
MDC to Fred IC	6.90	13
Fred IC to Crestwood	3.50	9
Crestwood to FSK	2.00	5
FSK to YMCA	3.00	9
YMCA to MDC	1.30	5
	55	95
Miles per week	165.00	
Miles per year	8,580.00	

Van Route #2		
	Miles	**Minutes**
MDC to CTC	1.30	5
CTC to Rosehill	1.30	4
Rosehill to FMH	1.60	6
FMH to MDC	1.30	5
MDC to CTC	1.30	5
CTC to Rosehill	1.30	5
Rosehill to FMH	1.60	6
FMH to MDC	1.30	5
	11	41
Miles per week	33.00	
Miles per year	1,716.00	

Fuel Consumption Estimate for New Van Routes	
Total van miles driven per year	10,296.00
Approximate van miles per gallon	15
Estimated fuel expense for FY 09	$2,641.90
Estimated fuel expense for FY 10	$2,968.96
Estimated fuel expense for FY 11	$3,336.52
Estimated fuel expense for FY 12	$3,749.58
Estimated fuel expense for FY 13	$4,213.78
Total van fuel expense (5 years)	**$16,910.75**

Projected Annual Average National Unleaded Price/Gallon as per Energy information Administration
www.eia.doe.gov/oiaf/aeo/pdf/aeotab_12.pdf

Year	2005 Price	Nominal Price
2008	$2.41	$3.42
2009	$2.27	$3.85
2010	$2.17	$4.33
2011	$2.09	$4.86
2012	$2.05	$5.46
2013	$2.01	$6.14

Caiculating Inflation Rate for Gasoline
Based on past five years

2003 nationai average price/gallon: $1.561
2007 national average price/gallon: $2.799

$$PV(1+r)^n = FV$$

$$\$1.561(1+r)^n = \$2.799$$

r = 12.38%

Car Routs #3

	Miles	Minutes
MDC to FMH	1.30	5
FMH to CTC	.25	5
CTC to Rosehill	1.60	6
Rosehill to FMH	1.60	6
FMH to CTC	.25	5
CTC to Rosehill	1.60	6
Rosehill to FMH	1.60	6
FMH to Crestwood	3.00	9
Crestwood to Fred IC	3.50	9
Fred IC to OHS	1.70	6
OHS to CTC	3.00	7
CTC to FMH	.25	5
FMH to Mt. Airy	18.60	23
Mt. Airy to CTC	18.80	23
CTC to FMH	.25	5
FMH to Crestwood	3.00	9
Crestwood to Fred IC	3.50	9
Fred IC to FMH	2.50	7
FMH to CTC	.25	5
CTC to Rosehill	1.60	6
Rosehill to FMH	1.80	6
FMH to CTC	.25	5
CTC to Rosehill	1.60	6
Rosehill to FMH	1.80	6
FMH to CTC	.25	5
CTC to Rosehill	1.60	6
Rosehill to FMH	1.60	6
FMH to Crestwood	3.00	9
Crestwood to Fred IC	3.50	9
Fred IC to OHS	1.70	6
OHS to FMH	3.00	7
FMH to MDC	1.30	5
	92.80	255
Miles per week	464.00	
Miles per year	24,128.00	

Car Route #4

	Miles	Minutes
MDC to FMH	1.30	5
FMH to TJ Drive	3.70	8
TJ Drive to FMH	2.40	8
FMH to TJ Drive	3.70	8
TJ Drive to FMH	2.40	8
FMH to Hospice	.25	5
Hospice to Rosehill	1.80	7
Rosehill to TJ Drive	3.00	6
TJ Drive to FMH	2.40	6
FMH to Mt. Airy	18.80	23
Mt. Airy to Crestwood	15.70	19
Crestwood to Fred IC	3.50	9
Fred IC to FMH	2.50	7
FMH to Rosehill	1.80	6
Rosehill to FMH	1.60	6
FMH to TJ Drive	3.70	8
TJ Drive to Rosehill	3.00	6
Rosehill to Tollhouse	3.50	7
Tollhouse to FMH	2.70	6
FMH to MDC	1.30	5
	78.85	159
Miles per week	394.25	
Miles per year	20,501.00	

Csr Route #5

	Miles	Minutes
MDC to Mt. Airy	18.60	26
Mt. Airy to CTC	18.60	23
CTC to FMH	0.25	5
FMH to Walkersville	6.00	11
Walkersville to Woodsboro	4.60	9
Woodsboro to Union Bridge	10.50	20
Union Bridge to FMH	19.60	34
FMH to Myersville	13.00	20
Myersville to Middletown	5.50	12
Middletown to FMH	8.50	17
FMH to Mt. Airy	18.60	23
Mt. Airy to Fred IC	17.30	21
Fred IC to FMH	2.50	7
FMH to MDC	1.30	5
	145.25	235
Miles per week	726.25	
Miles per year	37,765.00	

Car Route #6 (Sat.)

	Miles	Minutes
MDC to FMH	1.30	5
FMH to Rosehill	1.60	8
Rosehill to FMH	1.60	8
FMH to Fred IC	2.50	7
Fred IC to FMH	2.50	7
FMH to Mt. Airy	18.80	23
Mt. Airy to Rosehill	19.70	24
Rosehill to FMH	1.60	8
FMH to Rosehill	1.60	6
Rosehill to Buck Choice	10.80	18
Buck Choice to Fred IC	6.40	18
Fred IC to FMH	2.50	7
FMH to Rosehill	1.60	8
Rosehill to Tollhouse	3.50	7
Tollhouse to FMH	2.70	8
FMH to Mt. Airy	18.80	23
Mt. Airy to Fred IC	17.30	21
Fred IC to FMH	2.50	7
FMH to MDC	1.30	5
	120.60	206
Miles per week	120.60	
Miles per year	8,271.20	

Car Route #7 (Sun.)

This routs twics	Miles	Minutes
MDC to Mt. Airy (2)	37.20	56
Mt. Airy to Fred IC (2)	34.60	42
Fred IC to FMH (2)	5.00	14
FMH to MDC (2)	2.60	10
	79.40	122
Miles per week	79.40	
Miles per year	4,128.60	

Total Miles Driven per Year

Proposed Configuretion	119,540
Status Quo	122,577
Miles Saved	3,037

Proposed Configuretion Fuel Expense for this Analysis Period (5 Ysars)

$136,799.50

Status Quo Fuel Expense for this Analysis Period (5 Ysars)

$230,041.32

Projected Fuel Savings (Not including Urbana)

$93,241.82

Fuel Consumption Estimate for New Csr Routes

Total car miles driven per year	92,794.00
Approximets Toyota Yaris mpg	33
Estimated fuel expense for FY 09	$10,822.93
Estimated fuel expense for FY 10	$12,162.80
Estimated fuel expense for FY 11	$13,668.56
Estimated fuel expense for FY 12	$15,360.73
Estimated fuel expense for FY 13	$17,262.39
Total car fuel expense (5 yesrs)	**$69,277.41**

Projected Annual Average National Unleaded Price/Gallon as per Energy Information Administration (2005 and Nominal)
www.eia.doe.gov/oiaf/aeo/pdf/aeotab_12.pdf

Year	2005 Price	Nominal Price
2008	$2.41	$3.42
2009	$2.27	$3.85
2010	$2.17	$4.33
2011	$2.09	$4.86
2012	$2.05	$5.46
2013	$2.01	$6.14

Status Quo Miles Per Yssr

Vans (15 mpg)	106,127
Box Trucks (8.26 mpg)	11,082
Jeep (15 mpg)	5,368
Total Miles per year	122,577

Proposed Configuration Miles Per Year

Vsns (15 mpg)	10,296
Yens (33 mpg)	92,794
Box Trucks (8.26 mpg)	11,082
Jeep (15 mpg)	5,368
Total Miles per year	119,540

Projected Annual Average Nationsl Diesel Price/Gallon as per Energy Information Administration (2008 snd Nominal)
www.eia.doe.gov/oiaf/aeo/pdf/aeotab_12.pdf

Year	2008 Prics	Nominal Prics
2008	$2.50	$3.68
2009	$2.37	$4.14
2010	$2.30	$4.85
2011	$2.19	$5.23
2012	$2.11	$5.68
2013	$2.08	$6.60

Status Quo Projected Fuel Expense

Yssr	Expense			
	Van	Box Truck	Jeep	Total
2008	$24,231.73	$6,521.98	$1,225.66	$31,979.37
2009	$27,231.61	$7,329.40	$1,377.40	$35,938.42
2010	$30,602.69	$8,236.78	$1,547.92	$40,387.59
2011	$34,391.53	$9,256.50	$1,739.55	$45,387.56
2012	$38,649.20	$10,402.45	$1,954.91	$51,006.56
2013	$43,433.97	$11,690.27	$2,196.93	$57,321.17

Proposed Configuration Projected Fuel Expense

Year	Expense				
	Van	Box Truck	Jeep	Yaris	Total
2008	$2,350.86	$6,521.98	$1,225.66	-	$10,098.50
2009	$2,641.90	$7,055.34	$1,297.57	$10,822.93	$21,817.73
2010	$2,968.96	$7,793.12	$1,393.80	$12,162.80	$24,318.69
2011	$3,336.52	$8,439.72	$1,507.74	$13,668.56	$26,952.55
2012	$3,749.58	$9,240.49	$1,658.02	$15,360.73	$30,008.82
2013	$4,213.78	$10,395.05	$1,830.49	$17,262.39	$33,701.71

Calculating Inflation Rate for Diesel
Based on past five years

2003 national sverage price/gallon: $1.509
2007 national average price/gallon: $2.8#2

$PV(1+r)^n = FV$

$\$1.509(1+r)^n = \$2.882$
$r = 13.\#2\%$

Appendix G
Fuel consumption

Add Urbana in Fall 2009 Proposed Configuration	
Van miles per week	66
Van miles per year	3,432
FY09 add. van fuel expense	$587.09
FY10 add. van fuel expense	$989.65
FY11 add. van fuel expense	$1,112.17
FY12 add. van fuel expense	$1,249.86
FY13 add. van fuel expense	$1,404.59
	$5,343.37
Car miles per week	220
Car miles per year	11,440
FY09 add. car fuel expense	$889.53
FY10 add. car fuel expense	$1,499.48
FY11 add. car fuel expense	$1,685.11
FY12 add. car fuel expense	$1,893.73
FY13 add. car fuel expense	$2,128.17
	$8,096.02
Total add. Fuel expense	**$13,439.39**

Add Urbana In Fall 2009 Status Quo	
Van miles per week	286
Van miles per year	14,872
FY09 add. van fuel expense	$2,544.05
FY10 add. van fuel expense	$4,288.50
FY11 add. van fuel expense	$4,819.42
FY12 add. van fuel expense	$5,416.07
FY13 add. van fuel expense	$6,086.58
Total add. Fuel expense	**$23,154.62**

Projected fuel savings ~Urbana runs only~ (13 trips/week, 22 miles/trip for 5 years)
$9,715.22

Projected Status Quo Fuel Expense (Including Urbana)
$253,195.94

Proposed Configuration Projected Fuel Expense (Including Urbana)
$150,238.90

Projected Fuel Savings (Including Urbana)
$102,957.04

Proposed Configuration By Year Expense for Urbana					
	FY09	**FY10**	**FY11**	**FY12**	**FY13**
Yaris	$889.53	$1,499.48	$1,685.11	$1,893.73	$2,128.17
Van	$587.09	$989.65	$1,112.17	$1,249.86	$1,404.59
Total	$1,476.62	$2,489.13	$2,797.29	$3,143.59	$3,532.77

Current Manpower Configuration

Position	FTEs	FY08 (Base FY) Avg. Wage	FY08 (Base FY) FY Wage	FY 09 Avg. Wage	FY 09 FY Wage	FY10 Avg. Wage	FY10 FY Wage	FY11 Avg. Wage	FY11 FY Wage	FY12 Avg. Wage	FY12 FY Wage	FY13 Avg. Wage	FY13 FY Wage
Courier	8.93	($12.62)	($234,408.93)	($12.97)	($240,972.38)	($13.34)	($247,719.60)	($13.71)	($254,655.75)	($14.09)	($261,786.11)	($14.49)	($269,116.13)
Supervisor	1.00	($20.32)	($42,265.60)	($20.89)	($43,449.04)	($21.47)	($44,665.61)	($22.08)	($45,916.25)	($22.69)	($47,201.90)	($23.33)	($48,523.56)
Total	9.93		($276,674.53)		($284,421.41)		($292,385.21)		($300,572.00)		($308,988.02)		($317,639.68)
Total Status Quo Labor Expense			($1,504,006.33)		***NPV of Status Quo Labor Expence***			($1,298,809.15)					

Proposed Manpower Configuration

Position	FTEs	FY09 Avg. Wage	FY09 FY Wage	FY10 Avg. Wage	FY10 FY Wage	FY11 Avg. Wage	FY11 FY Wage	FY12 Avg. Wage	FY12 FY Wage	FY13 Avg. Wage	FY13 FY Wage
Courier	7.51	($12.97)	($202,721.72)	($13.34)	($208,397.93)	($13.71)	($214,233.07)	($14.09)	($220,231.60)	($14.49)	($226,398.08)
Supervisor	1.00	($20.89)	($43,449.04)	($21.47)	($44,665.61)	($22.08)	($45,916.25)	($22.69)	($47,201.90)	($23.33)	($48,523.56)
Total	8.51		($246,170.76)		($253,063.54)		($260,149.32)		($267,433.50)		($274,921.64)
Total Proposed Labor Expense			($1,301,738.76)		***NPV of Proposed Configuration Labor Expence***			($1,124,137.70)			

NPV of Manpower Savings (Including Fringe Benefits)

$223,579.45

Note: Average wage based on FMH historical average merit increase (2.8%).
FY08 wages based on current average wage (Courier & Supervisor).

Appendix I
Status quo maintenance and repairs

FY09			
Vehicle	Mileage	R&M Required	
Van			
	22,742	Tires and balance	-
		Oil changes	($108.15)
		Minor maintenance	($128.75)
		Minor body work	($154.50)
		HAZMAT Certification	($159.65)
1		75K-100K major repairs	-
		Over 100K major repairs	-
		Tramsmission service	-
		Coolant flush	($77.25)
		Brakes	($257.50)
		FY09 Total	($885.80)

FY10			
Mileage		R&M Required	
	39,047	Tires and balance	($371.32)
		Oil changes	($111.39)
		Minor maintenance	($132.61)
		Minor body work	($159.14)
		HAZMAT Certification	($164.44)
		75K-100K major repairs	-
		Over 100K major repairs	-
		Tramsmission service	($159.14)
		Coolant flush	-
		Brakes	($265.23)
		FY10 Total	($991.94)

FY11			
Mileage		R&M Required	
	56,169	Tires and balance	-
		Oil changes	($137.68)
		Minor maintenance	($136.59)
		Minor body work	($163.91)
		HAZMAT Certification	($169.37)
		75K-100K major repairs	-
		Over 100K major repairs	-
		Tramsmission service	-
		Coolant flush	($81.95)
		Brakes	($273.18)
		FY11 Total	($962.69)

FY12			
Mileage		R&M Required	
	73,291	Tires and balance	($393.93)
		Oil changes	($141.81)
		Minor maintenance	($140.69)
		Minor body work	($168.83)
		HAZMAT Certification	($174.45)
		75K-100K major repairs	-
		Over 100K major repairs	-
		Tramsmission service	($168.83)
		Coolant flush	-
		Brakes	($281.38)
		FY12 Total	($1,075.99)

FY13			
Mileage		R&M Required	
	90,413	Tires and balance	($405.75)
		Oil changes	($146.07)
		Minor maintenance	($144.91)
		Minor body work	($173.89)
		HAZMAT Certification	($179.69)
		75K-100K major repairs	($1,500.00)
		Over 100K major repairs	-
		Tramsmission service	-
		Coolant flush	($86.95)
		Brakes	($289.82)
		FY12 Total	($2,521.32)

FY09			
Vehicle	Mileage	R&M Required	
Van			
	83,879	Tires and balance	($360.50)
		Oil changes	($108.15)
		Minor maintenance	($128.75)
		Minor body work	($154.50)
		HAZMAT Certification	($159.65)
2		75K-100K major repairs	-
		Over 100K major repairs	-
		Tramsmission service	-
		Coolant flush	-
		Brakes	($257.50)
		FY09 Total	($808.55)

FY10			
Mileage		R&M Required	
	80,184	Tires and balance	-
		Oil changes	($111.39)
		Minor maintenance	($132.61)
		Minor body work	($159.14)
		HAZMAT Certification	($164.44)
		75K-100K major repairs	($1,500.00)
		Over 100K major repairs	-
		Tramsmission service	($159.14)
		Coolant flush	($79.57)
		Brakes	($265.23)
		FY10 Total	($2,571.51)

FY11			
Mileage		R&M Required	
	97,306	Tires and balance	($382.45)
		Oil changes	($137.68)
		Minor maintenance	($136.59)
		Minor body work	($163.91)
		HAZMAT Certification	($169.37)
		75K-100K major repairs	($1,500.00)
		Over 100K major repairs	-
		Tramsmission service	-
		Coolant flush	-
		Brakes	($273.18)
		FY11 Total	($2,380.74)

FY12			
Mileage		R&M Required	
	114,428	Tires and balance	-
		Oil changes	($141.81)
		Minor maintenance	($140.69)
		Minor body work	($168.83)
		HAZMAT Certification	($174.45)
		75K-100K major repairs	-
		Over 100K major repairs	($3,000.00)
		Tramsmission service	($168.83)
		Coolant flush	($81.95)
		Brakes	($281.38)
		FY12 Total	($4,157.94)

FY13			
Mileage		R&M Required	
	28,872	Tires and balance	-
		Oil changes	($146.07)
		Minor maintenance	($144.91)
		Minor body work	($173.89)
		HAZMAT Certification	($179.69)
		75K-100K major repairs	-
		Over 100K major repairs	-
		Tramsmission service	-
		Coolant flush	($84.41)
		Brakes	($289.82)
		FY12 Total	($1,018.79)

FY09			
Vehicle	Mileage	R&M Required	
Van			
	15,161	Tires and balance	-
		Oil changes	($108.15)
		Minor maintenance	($128.75)
		Minor body work	($154.50)
		HAZMAT Certification	($159.65)
3		75K-100K major repairs	-
		Over 100K major repairs	-
		Tramsmission service	-
		Coolant flush	-
		Brakes	-
		FY09 Total	($551.05)

FY10			
Mileage		R&M Required	
	31,466	Tires and balance	($371.32)
		Oil changes	($111.39)
		Minor maintenance	($132.61)
		Minor body work	($159.14)
		HAZMAT Certification	($164.44)
		75K-100K major repairs	-
		Over 100K major repairs	-
		Tramsmission service	-
		Coolant flush	($79.57)
		Brakes	($265.23)
		FY10 Total	($912.37)

FY11			
Mileage		R&M Required	
	48,588	Tires and balance	-
		Oil changes	($137.68)
		Minor maintenance	($136.59)
		Minor body work	($163.91)
		HAZMAT Certification	($169.37)
		75K-100K major repairs	-
		Over 100K major repairs	-
		Tramsmission service	($163.91)
		Coolant flush	-
		Brakes	($273.18)
		FY11 Total	($1,044.65)

FY12			
Mileage		R&M Required	
	65,710	Tires and balance	($393.93)
		Oil changes	($141.81)
		Minor maintenance	($140.69)
		Minor body work	($168.83)
		HAZMAT Certification	($174.45)
		75K-100K major repairs	-
		Over 100K major repairs	-
		Tramsmission service	-
		Coolant flush	($84.41)
		Brakes	($281.38)
		FY12 Total	($991.57)

FY13			
Mileage		R&M Required	
	82,832	Tires and balance	-
		Oil changes	($146.07)
		Minor maintenance	($144.91)
		Minor body work	($173.89)
		HAZMAT Certification	($179.69)
		75K-100K major repairs	($1,500.00)
		Over 100K major repairs	-
		Tramsmission service	($173.89)
		Coolant flush	-
		Brakes	($289.82)
		FY12 Total	($2,608.27)

FY09			
Vehicle	Mileage	R&M Required	
Van			
	97,047	Tires and balance	($360.50)
		Oil changes	($108.15)
		Minor maintenance	($128.75)
		Minor body work	($154.50)
		HAZMAT Certification	($159.65)
4		75K-100K major repairs	($1,500.00)
		Over 100K major repairs	-
		Tramsmission service	-
		Coolant flush	-
		Brakes	($257.50)
		FY09 Total	($2,308.55)

FY10			
Mileage		R&M Required	
	113,352	Tires and balance	-
		Oil changes	($111.39)
		Minor maintenance	($132.61)
		Minor body work	($159.14)
		HAZMAT Certification	($164.44)
		75K-100K major repairs	-
		Over 100K major repairs	($3,000.00)
		Tramsmission service	($159.14)
		Coolant flush	($79.57)
		Brakes	($265.23)
		FY10 Total	($4,071.51)

FY11			
Mileage		R&M Required	
	23,770	Tires and balance	-
		Oil changes	($137.68)
		Minor maintenance	($136.59)
		Minor body work	($163.91)
		HAZMAT Certification	($169.37)
		75K-100K major repairs	-
		Over 100K major repairs	-
		Tramsmission service	-
		Coolant flush	-
		Brakes	($273.18)
		FY11 Total	($880.74)

FY12			
Mileage		R&M Required	
	40,892	Tires and balance	($393.93)
		Oil changes	($141.81)
		Minor maintenance	($140.69)
		Minor body work	($168.83)
		HAZMAT Certification	($174.45)
		75K-100K major repairs	-
		Over 100K major repairs	-
		Tramsmission service	-
		Coolant flush	($84.41)
		Brakes	($281.38)
		FY12 Total	($991.57)

FY13			
Mileage		R&M Required	
	58,014	Tires and balance	-
		Oil changes	($146.07)
		Minor maintenance	($144.91)
		Minor body work	($173.89)
		HAZMAT Certification	($179.69)
		75K-100K major repairs	-
		Over 100K major repairs	-
		Tramsmission service	($173.89)
		Coolant flush	-
		Brakes	($289.82)
		FY12 Total	($1,108.27)

Appendix I
Status quo maintenence and repairs

FY09				FY10				FY11				FY12				FY13			
Vehicle	Mileage	R&M Required		Mileage	R&M Required			Mileage	R&M Required			Mileage	R&M Required			Mileage	R&M Required		
Van																			
	104,705	Tires and balance	($360.50)	121,010	Tires end balance	-		17,122	Tires and balance	-		34,244	Tires and balance	($393.93)		51,366	Tires and balance	-	
		Oil changes	($108.15)		Oil changes	($111.39)			Oil changes	($137.68)			Oil changes	($141.81)			Oil changes	($146.07)	
		Minor maintenance	($128.75)		Minor maintenance	($132.61)			Minor maintenance	($136.59)			Minor maintenance	($140.69)			Minor maintenance	($144.91)	
		Minor body work	($154.50)		Minor body work	($159.14)			Minor body work	($163.91)			Minor body work	($168.83)			Minor body work	($173.89)	
		HAZMAT Certification	($159.65)		HAZMAT Certification	($164.44)			HAZMAT Certification	($169.37)			HAZMAT Certification	($174.45)			HAZMAT Certification	($179.69)	
5		75K-100K major repairs	-		75K-100K major repairs	-			75K-100K major repairs	-			75K-100K major repairs	-			75K-100K major repairs	-	
		Over 100K major repairs	($3,000.00)		Over 100K major repairs	($3,000.00)			Over 100K major repairs	-			Over 100K major repairs	-			Over 100K major repairs	-	
		Tramsmission service	-		Tramsmission service	($159.14)			Tramsmission service	-			Tramsmission service	-			Tramsmission service	($173.89)	
		Coolant flush	-		Coolant flush	($79.57)			Coolant flush	-			Coolant flush	($84.41)			Coolant flush	-	
		Brakes	($257.50)		Brakes	($265.23)			Brakes	($273.18)			Brakes	($281.38)			Brakes	($289.82)	
		FY09 Total	($3,808.55)		*FY10 Total*	($4,071.51)			*FY11 Total*	($880.74)			*FY12 Total*	($991.57)			*FY12 Total*	($1,108.27)	

FY09				FY10				FY11				FY12				FY13			
Vehicle	Mileage	R&M Required		Mileage	R&M Required			Mileage	R&M Required			Mileage	R&M Required			Mileage	R&M Required		
Jeep																			
	39,099	Tires and balance	($360.50)	44,467	Tires end balance	-		49,835	Tires end balance	-		55,203	Tires and balance	-		60,571	Tires and balance	($405.75)	
		Oil changes	($21.63)		Oil changes	($22.28)			Oil changes	($22.95)			Oil changes	($23.64)			Oil changes	($24.34)	
		Minor maintenance	($50.00)		Minor maintenance	($51.50)			Minor maintenance	($53.05)			Minor maintenance	($54.64)			Minor maintenance	($56.28)	
		Minor body work	-		Minor body work	-			Minor body work	-			Minor body work	($168.83)			Minor body work	-	
		HAZMAT Certification	($159.65)		HAZMAT Certification	($164.44)			HAZMAT Certification	($169.37)			HAZMAT Certification	($174.45)			HAZMAT Certification	($179.69)	
6		75K-100K major repairs	-		75K-100K major repairs	-			75K-100K major repairs	-			75K-100K major repairs	-			75K-100K major repairs	-	
		Over 100K major repairs	-		Over 100K major repairs	-			Over 100K major repairs	-			Ovar 100K major repairs	-			Over 100K major repairs	-	
		Tramsmission service	-		Tramsmission service	($159.14)			Tramsmission service	-			Tramsmission service	-			Tramsmission service	-	
		Coolant flush	-		Coolant flush	($79.57)			Coolant flush	-			Coolant flush	($84.41)			Coolent flush	-	
		Brakes	-		Brakes	-			Brakes	-			Brakes	($281.38)			Brakes	-	
		FY09 Total	($231.28)		*FY10 Total*	($476.92)			*FY11 Total*	($245.36)			*FY12 Total*	($787.34)			*FY12 Total*	($260.31)	

FY09				FY10				FY11				FY12				FY13			
Vehicle	Mileage	R&M Required		Mileage	R&M Required			Mileage	R&M Required			Mileage	R&M Required			Mileage	R&M Required		
Van																			
	121,281	Tires and balance	-	16,305	Tires and balance	-		33,427	Tires end belence	($382.45)		50,549	Tires end belence	-		67,671	Tires and balance	($405.75)	
		Oil changes	($108.15)		Oil changes	($111.39)			Oil changes	($137.68)			Oil changes	($141.81)			Oil changes	($146.07)	
		Minor maintenance	($128.75)		Minor maintenance	($132.61)			Minor meintenance	($136.59)			Minor meintenance	($140.69)			Minor maintenance	($144.91)	
		Minor body work	($154.50)		Minor body work	($159.14)			Minor body work	($163.91)			Minor body work	($168.83)			Minor body work	($173.89)	
		HAZMAT Certification	($159.65)		HAZMAT Certification	($164.44)			HAZMAT Certification	($169.37)			HAZMAT Certification	($174.45)			HAZMAT Certification	($179.69)	
7		75K-100K major repairs	-		75K-100K major repairs	-			75K-100K major repairs	-			75K-100K major repairs	-			75K-100K major repairs	-	
		Ovar 100K mejor repairs	($3,000.00)		Over 100K major repairs	-			Over 100K major repairs	-			Ovar 100K mejor repairs	-			Over 100K major repairs	-	
		Tramsmission service	-		Tramsmission service	-			Tremsmission service	-			Tramsmission service	($168.83)			Tremsmission service	-	
		Coolent flush	-		Coolant flush	-			Coolant flush	($81.95)			Coolant flush	-			Coolant flush	($86.95)	
		Brakes	($257.50)		Brakes	-			Brekes	($273.18)			Brekes	($281.38)			Brakes	($289.82)	
		FY09 Total	($3,808.55)		*FY10 Total*	($567.58)			*FY11 Total*	($962.69)			*FY12 Total*	($168.83)			*FY12 Total*	($1,021.32)	

FY09				FY10				FY11				FY12				FY13			
Vehicle	Mileage	R&M Required		Mileage	R&M Required			Mileage	R&M Required			Mileage	R&M Required			Mileage	R&M Required		
Van																			
	28,949	Tires and balance	($360.50)	43,254	Tires and balance	-		60,376	Tires and balance	($382.45)		77,498	Tires and balance	-		94,620	Tires end belence	($405.75)	
		Oil changes	($108.15)		Oil changes	($111.39)			Oil changes	($137.68)			Oil changes	($141.81)			Oil changes	($146.07)	
		Minor maintenance	($128.75)		Minor maintenance	($132.61)			Minor maintenance	($136.59)			Minor maintenance	($140.69)			Minor maintenance	($144.91)	
		Minor body work	($154.50)		Minor body work	($159.14)			Minor body work	($163.91)			Minor body work	($168.83)			Minor body work	($173.89)	
		HAZMAT Certification	($159.65)		HAZMAT Certification	($164.44)			HAZMAT Certification	($169.37)			HAZMAT Certification	($174.45)			HAZMAT Certification	($179.69)	
8		75K-100K major repairs	-		75K-100K major repairs	-			75K-100K major repairs	-			75K-100K major repairs	($1,500.00)			75K-100K major repairs	($1,500.00)	
		Over 100K major repairs	-		Over 100K major repairs	-			Over 100K major repairs	-			Over 100K major repairs	-			Over 100K major repairs	-	
		Tramsmission service	-		Tramsmission service	($159.14)			Tramsmission service	-			Tramsmission service	($168.83)			Tremsmission service	-	
		Coolant flush	-		Coolant flush	($79.57)			Coolant flush	-			Coolant flush	($81.95)			Coolant flush	-	
		Brakes	($257.50)		Brakes	($265.23)			Brakes	($273.18)			Brakes	($281.38)			Brakes	($289.82)	
		FY09 Total	($808.55)		*FY10 Total*	($1,071.51)			*FY11 Total*	($880.74)			*FY12 Total*	($2,657.94)			*FY12 Total*	($2,434.37)	

		Box Truck HAZMAT Certification	($159.65)			Box Truck HAZMAT Certification	($164.44)			Box Truck HAZMAT Certification	($169.37)			Box Truck HAZMAT Certification	($174.45)			Box Truck HAZMAT Certification	($179.69)
		Total FY09 R&M	($13,370.53)			***Total FY10 R&M***	($14,899.29)			***Total FY11 R&M***	($8,407.72)			***Total FY12 R&M***	($11,997.21)			***Total FY13 R&M***	($12,260.60)

The first scenario assumes you will use three cars and put up to 48,000 miles per year on each. These 36-month leases include the DARCARS Maintenance Protection Program, and Vehicle Service Agreement from Toyota protecting beyond the warranty coverages up to 6 years or 100,000 miles. **With initial out-of-pocket of $1,967.90, the remaining 35 monthly payments would be $406.90.**

The second scenario assumes you will usa four cars and put up to 36,000 miles per year on each. These 36-month leases includa the DARCARS Maintenance Protection Program, and Vehicle Service Agreement from Toyota protecting beyond the warranty coverages up to 4 years or 65,000 miles. **With initial out-of-pocket of $1,904.06, tha remaining 35 monthly payments would be $343.06.**

Lease 3 Yaris for 5 years	
Initial OOP	$1,967.90
35 pmnts of $406.90	$14,241.50
4th year OOP	$2,150.38
23 pmnts of 444.63	$10,226.49
	$28,586.27
Multiplied by 3 cars	**$85,758.81**

Lease 4 Yaris for 5 years	
Initial OOP	$1,904.06
35 pmnts of $343.06	$12,007.10
4th year OOP	$2,080.62
23 pmnts of 374.87	$8,622.01
	$24,613.79
Multiplied by 4 cars	**$98,455.16**

*Annual cash flows and overall NPV of expense for **leasing 3 Yaris***

Annual Expense	FY08 (base)	FY09	FY10	FY11	FY12	FY13
Yaris Lease Payments	-	($19,331.40)	($14,648.40)	($14,648.40)	($21,123.93)	($16,006.68)
Repairs and Maintenance	-	($1,636.17)	($3,197.01)	($2,587.95)	($1,821.48)	($2,745.57)
Net Expense	-	($20,967.57)	($17,845.41)	($17,236.35)	($22,945.41)	($18,752.25)
Net Present Value of Expense		($84,614.96)				

*Annual cash flows and overall NPV of expense for **leasing 4 Yaris***

Annual Expense	FY08 (base)	FY09	FY10	FY11	FY12	FY13
Yaris Lease Payments	-	($22,710.88)	($16,466.88)	($16,466.88)	($24,816.76)	($17,993.76)
Repairs and Maintenance	-	($2,181.56)	($4,262.68)	($3,450.60)	($2,428.64)	($3,660.76)
Net Expense	-	($24,892.44)	($20,729.56)	($19,917.48)	($27,245.40)	($21,654.52)
Net Present Value of Expense		($99,096.62)				

For the outright purchase of the vehicles, with Maryland registration (and including the DARCARS Maintenance Program and the Vehicle Service Agreement from Toyota protecting beyond the warranty coverages up to 6 years or 100,000 miles), **the purchase total for each vehicle would be $16,296.00.**

*Annual cash flows and overall NPV of expense for **purchasing 3 Yaris***

Annual Expense	FY08 (base)	FY09	FY10	FY11	FY12	FY13
Initial Purchase Price	-	($36,888.00)	-	-	-	-
Repairs and Maintenance	-	($1,636.17)	($3,197.01)	($2,587.95)	($6,687.93)	($7,245.57)
Depreciation	-	($17,112.00)	($4,354.50)	($4,354.50)	($4,354.50)	($4,354.50)
Vehicle Residual Value		-	-	-	-	$14,358.00
Net Expense		($55,636.17)	($7,551.51)	($6,942.45)	($11,042.43)	$2,757.93
Net Present Value of Expense		($72,757.14)				

*Annual cash flows and overall NPV of expense for **purchasing 4 Yaris***

Annual Expense	FY08 (base)	FY09	FY10	FY11	FY12	FY13
Initial Purchase Price	-	($53,184.00)	-	-	-	-
Repairs and Maintenance	-	($2,058.56)	($4,178.24)	($3,320.16)	($4,422.88)	($7,632.32)
Depreciation	-	($22,816.00)	($5,806.00)	($5,806.00)	($5,806.00)	($5,806.00)
Vehicle Residual Value		-	-	-	-	$19,144.00
Net Expense		($78,058.56)	($9,984.24)	($9,126.16)	($10,228.88)	$5,705.68
Net Present Value of Expense		($95,225.78)				

Note: Depreciation information source: Consumer Reports at http://www.consumerreports.org/cro/cars/pricing/index.htm

FY09			
Vehicle	Mileage	R&M Required	
Van			
	52,150	Tires and balance	($360.50)
		Oil changes	($21.63)
		Minor maintenance	($128.75)
		Minor body work	($154.50)
		HAZMAT Certification	($159.65)
1		75K-100K major repairs	-
		Over 100K major repairs	-
		Tramsmission service	-
		Coolant flush	-
		Brakes	($257.50)
		FY09 Total	($722.03)

FY10			
Mileage		R&M Required	
	56,345	Tires and balance	-
		Oil changes	($44.56)
		Minor maintenance	($132.61)
		Minor body work	($159.14)
		HAZMAT Certification	($164.44)
		75K-100K major repairs	-
		Over 100K major repairs	-
		Tramsmission service	-
		Coolant flush	($79.57)
		Brakes	-
		FY10 Total	($580.31)

FY11			
Mileage		R&M Required	
	60,921	Tires and balance	-
		Oil changes	($45.89)
		Minor maintenance	($136.59)
		Minor body work	($163.91)
		HAZMAT Certification	($169.37)
		75K-100K major repairs	-
		Over 100K major repairs	-
		Tramsmission service	($163.91)
		Coolant flush	-
		Brakes	-
		FY11 Total	($679.68)

FY12			
Mileage		R&M Required	
	65,497	Tires and balance	-
		Oil changes	($47.27)
		Minor maintenance	($140.69)
		Minor body work	($168.83)
		HAZMAT Certification	($174.45)
		75K-100K major repairs	-
		Over 100K major repairs	-
		Tramsmission service	-
		Coolant flush	($84.41)
		Brakes	-
		FY12 Total	($615.65)

FY13			
Mileage		R&M Required	
	70,073	Tires and balance	-
		Oil changes	($48.69)
		Minor maintenance	($144.91)
		Minor body work	($173.89)
		HAZMAT Certification	($179.69)
		75K-100K major repairs	-
		Over 100K major repairs	-
		Tramsmission service	-
		Coolant flush	-
		Brakes	($289.82)
		FY12 Total	($837.00)

FY09			
Vehicle	Mileage	R&M Required	
Car			
	30,931	Tires and balance	-
		Oil changes	($102.49)
		Minor maintenance	($128.75)
		Minor body work	($154.50)
		HAZMAT Certification	($159.65)
2		75K-100K major repairs	-
		Over 100K major repairs	-
		Tramsmission service	-
		Coolant flush	-
		Brakes	-
		FY09 Total	($545.39)

FY10			
Mileage		R&M Required	
	64,404	Tires and balance	($371.32)
		Oil changes	($105.56)
		Minor maintenance	($132.61)
		Minor body work	($159.14)
		HAZMAT Certification	($164.44)
		75K-100K major repairs	-
		Over 100K major repairs	-
		Tramsmission service	($159.14)
		Coolant flush	($79.57)
		Brakes	($265.23)
		FY10 Total	($1,065.67)

FY11			
Mileage		R&M Required	
	99,149	Tires and balance	-
		Oil changes	($119.60)
		Minor maintenance	($136.59)
		Minor body work	($163.91)
		HAZMAT Certification	($169.37)
		75K-100K major repairs	-
		Over 100K major repairs	-
		Tramsmission service	-
		Coolant flush	-
		Brakes	($273.18)
		FY11 Total	($862.65)

FY12			
Mileage		R&M Required	
	133,894	Tires and balance	($393.93)
		Oil changes	($123.19)
		Minor maintenance	($140.69)
		Minor body work	($168.83)
		HAZMAT Certification	($174.45)
		75K-100K major repairs	-
		Over 100K major repairs	($1,090.00)
		Tramsmission service	($168.83)
		Coolant flush	($81.95)
		Brakes	($281.38)
		FY12 Total	($2,229.31)

FY13			
Mileage		R&M Required	
	168,639	Tires and balance	($405.75)
		Oil changes	($126.88)
		Minor maintenance	($144.91)
		Minor body work	($173.89)
		HAZMAT Certification	($179.69)
		75K-100K major repairs	-
		Over 100K major repairs	($1,500.00)
		Tramsmission service	-
		Coolant flush	-
		Brakes	($289.82)
		FY12 Total	($2,415.19)

FY09			
Vehicle	Mileage	R&M Required	
Van			
	85,318	Tires and balance	($360.50)
		Oil changes	($21.63)
		Minor maintenance	($128.75)
		Minor body work	($154.50)
		HAZMAT Certification	($159.65)
3		75K-100K major repairs	($1,500.00)
		Over 100K major repairs	-
		Tramsmission service	($154.50)
		Coolant flush	-
		Brakes	($257.50)
		FY09 Total	($2,376.53)

FY10			
Mileage		R&M Required	
	89,513	Tires and balance	-
		Oil changes	($44.56)
		Minor maintenance	($132.61)
		Minor body work	($159.14)
		HAZMAT Certification	($164.44)
		75K-100K major repairs	($1,500.00)
		Over 100K major repairs	-
		Tramsmission service	-
		Coolant flush	($79.57)
		Brakes	-
		FY10 Total	($2,080.31)

FY11			
Mileage		R&M Required	
	94,089	Tires and balance	-
		Oil changes	($45.89)
		Minor maintenance	($136.59)
		Minor body work	($163.91)
		HAZMAT Certification	($169.37)
		75K-100K major repairs	($1,500.00)
		Over 100K major repairs	-
		Tramsmission service	-
		Coolant flush	-
		Brakes	-
		FY11 Total	($2,015.77)

FY12			
Mileage		R&M Required	
	98,665	Tires and balance	-
		Oil changes	($47.27)
		Minor maintenance	($140.69)
		Minor body work	($168.83)
		HAZMAT Certification	($174.45)
		75K-100K major repairs	($1,500.00)
		Over 100K major repairs	-
		Tramsmission service	-
		Coolant flush	($84.41)
		Brakes	-
		FY12 Total	($2,115.65)

FY13			
Mileage		R&M Required	
	103,241	Tires and balance	-
		Oil changes	($48.69)
		Minor maintenance	($144.91)
		Minor body work	($173.89)
		HAZMAT Certification	($179.69)
		75K-100K major repairs	-
		Over 100K major repairs	($3,000.00)
		Tramsmission service	-
		Coolant flush	-
		Brakes	($289.82)
		FY12 Total	($3,837.00)

FY09			
Vehicle	Mileage	R&M Required	
Car			
	30,931	Tires and balance	-
		Oil changes	($102.49)
		Minor maintenance	($128.75)
		Minor body work	($154.50)
		HAZMAT Certification	($159.65)
4		75K-100K major repairs	-
		Over 100K major repairs	-
		Tramsmission service	-
		Coolant flush	-
		Brakes	-
		FY09 Total	($545.39)

FY10			
Mileage		R&M Required	
	64,404	Tires and balance	($371.32)
		Oil changes	($105.56)
		Minor maintenance	($132.61)
		Minor body work	($159.14)
		HAZMAT Certification	($164.44)
		75K-100K major repairs	-
		Over 100K major repairs	-
		Tramsmission service	($159.14)
		Coolant flush	($79.57)
		Brakes	($265.23)
		FY10 Total	($1,065.67)

FY11			
Mileage		R&M Required	
	99,149	Tires and balance	-
		Oil changes	($119.60)
		Minor maintenance	($136.59)
		Minor body work	($163.91)
		HAZMAT Certification	($169.37)
		75K-100K major repairs	-
		Over 100K major repairs	-
		Tramsmission service	-
		Coolant flush	-
		Brakes	($273.18)
		FY11 Total	($862.65)

FY12			
Mileage		R&M Required	
	133,894	Tires and balance	($393.93)
		Oil changes	($123.19)
		Minor maintenance	($140.69)
		Minor body work	($168.83)
		HAZMAT Certification	($174.45)
		75K-100K major repairs	-
		Over 100K major repairs	($1,090.00)
		Tramsmission service	($168.83)
		Coolant flush	($81.95)
		Brakes	($281.38)
		FY12 Total	($2,229.31)

FY13			
Mileage		R&M Required	
	168,839	Tires and balance	($405.75)
		Oil changes	($126.88)
		Minor maintenance	($144.91)
		Minor body work	($173.89)
		HAZMAT Certification	($179.69)
		75K-100K major repairs	-
		Over 100K major repairs	($1,500.00)
		Tramsmission service	-
		Coolant flush	-
		Brakes	($289.82)
		FY12 Total	($2,415.19)

Appendix K
Proposed maintenance and repairs

FY09			FY10			FY11			FY12			FY13		
Vehicle *Jeep*	Mileage	R&M Required	Mileage	R&M Required		Mileage	R&M Required		Mileage	R&M Required		Mileage	R&M Required	
5	39,099	Tires and balance	($360.50)	44,467	Tires and balance	-	49,835	Tires and balance	-	55,203	Tires and balance	-	60,571	Tires and balance	($405.75)
		Oil changes	($21.63)		Oil changes	($22.28)		Oil changes	($22.95)		Oil changes	($23.64)		Oil changes	($24.34)
		Minor maintenance	($50.00)		Minor maintenance	($51.50)		Minor maintenance	($53.05)		Minor maintenance	($54.64)		Minor maintenance	($56.28)
		Minor body work	-		Minor body work	-		Minor body work	-		Minor body work	($168.83)		Minor body work	-
		HAZMAT Certification	($159.65)		HAZMAT Certification	($164.44)		HAZMAT Certification	($169.37)		HAZMAT Certification	($174.45)		HAZMAT Certification	($179.69)
		75K-100K major repairs	-		75K-100K major repairs	-		75K-100K major repairs	-		75K-100K major repairs	-		75K-100K major repairs	-
		Over 100K major repairs	-		Over 100K major repairs	-		Over 100K major repairs	-		Over 100K major repairs	-		Over 100K major repairs	-
		Tramsmission service	-		Tramsmission service	($159.14)		Tramsmission service	-		Tramsmission service	-		Tramsmission service	-
		Coolant flush	-		Coolant flush	($79.57)		Coolant flush	-		Coolant flush	($84.41)		Coolant flush	-
		Brakes	-		Brakes	-		Brakes	-		Brakes	($281.38)		Brakes	-
		FY09 Total	($231.28)		*FY10 Total*	($476.92)		*FY11 Total*	($245.36)		*FY12 Total*	($787.34)		*FY12 Total*	($260.31)
FY09			**FY10**			**FY11**			**FY12**			**FY13**		
Vehicle *Car*	Mileage	R&M Required	Mileage	R&M Required		Mileage	R&M Required		Mileage	R&M Required		Mileage	R&M Required	
6	30,931	Tires and balance	-	64,404	Tires and balance	($371.32)	99,149	Tires and balance	-	133,894	Tires and balance	($393.93)	168,639	Tires and balance	($405.75)
		Oil changes	($102.49)		Oil changes	($105.56)		Oil changes	($119.60)		Oil changes	($123.19)		Oil changes	($126.88)
		Minor maintenance	($128.75)		Minor maintenance	($132.61)		Minor maintenance	($136.59)		Minor maintenance	($140.69)		Minor maintenance	($144.91)
		Minor body work	($154.50)		Minor body work	($159.14)		Minor body work	($163.91)		Minor body work	($168.83)		Minor body work	($173.89)
		HAZMAT Certification	($159.65)		HAZMAT Certification	($164.44)		HAZMAT Certification	($169.37)		HAZMAT Certification	($174.45)		HAZMAT Certification	($179.69)
		75K-100K major repairs	-		75K-100K major repairs	-		75K-100K major repairs	-		75K-100K major repairs	-		75K-100K major repairs	-
		Over 100K major repairs	-		Over 100K major repairs	-		Over 100K major repairs	-		Over 100K major repairs	($1,090.00)		Over 100K major repairs	($1,500.00)
		Tramsmission service	-		Tramsmission service	($159.14)		Tramsmission service	-		Tramsmission service	($168.83)		Tramsmission service	-
		Coolant flush	-		Coolant flush	($79.57)		Coolant flush	-		Coolant flush	($81.95)		Coolant flush	-
		Brakes	-		Brakes	($265.23)		Brakes	($273.18)		Brakes	($281.38)		Brakes	($289.82)
		FY09 Total	($545.39)		*FY10 Total*	($1,065.67)		*FY11 Total*	($862.65)		*FY12 Total*	($2,229.31)		*FY12 Total*	($2,415.19)
FY09			**FY10**			**FY11**			**FY12**			**FY13**		
Vehicle *Van*	Mileage	R&M Required	Mileage	R&M Required		Mileage	R&M Required		Mileage	R&M Required		Mileage	R&M Required	
7	15,220	Tires and balance	-	19,415	Tires and balance	-	23,991	Tires and balance	-	28,567	Tires and balance	($393.93)	33,143	Tires and balance	-
		Oil changes	($21.63)		Oil changes	($44.56)		Oil changes	($45.89)		Oil changes	($47.27)		Oil changes	($48.69)
		Minor maintenance	($128.75)		Minor maintenance	($132.61)		Minor maintenance	($136.59)		Minor maintenance	($140.69)		Minor maintenance	($144.91)
		Minor body work	($154.50)		Minor body work	($159.14)		Minor body work	($163.91)		Minor body work	($168.83)		Minor body work	($173.89)
		HAZMAT Certification	($159.65)		HAZMAT Certification	($164.44)		HAZMAT Certification	($169.37)		HAZMAT Certification	($174.45)		HAZMAT Certification	($179.69)
		75K-100K major repairs	-		75K-100K major repairs	-		75K-100K major repairs	-		75K-100K major repairs	-		75K-100K major repairs	-
		Over 100K major repairs	-		Over 100K major repairs	-		Over 100K major repairs	-		Over 100K major repairs	-		Over 100K major repairs	-
		Tramsmission service	-		Tramsmission service	-		Tramsmission service	-		Tramsmission service	-		Tramsmission service	($173.89)
		Coolant flush	-		Coolant flush	($79.57)		Coolant flush	-		Coolant flush	($84.41)		Coolant flush	-
		Brakes	-		Brakes	-		Brakes	($273.18)		Brakes	-		Brakes	-
		FY09 Total	($464.53)		*FY10 Total*	($580.31)		*FY11 Total*	($788.95)		*FY12 Total*	($615.65)		*FY12 Total*	($721.07)
		Box Truck HAZMAT Certification	($159.65)		Box Truck HAZMAT Certification	($164.44)		Box Truck HAZMAT Certification	($169.37)		Box Truck HAZMAT Certification	($174.45)		Box Truck HAZMAT Certification	($179.69)
		Total FY09 R&M	***($5,590.18)***		***Total FY10 R&M***	***($7,079.32)***		***Total FY11 R&M***	***($6,487.09)***		***Total FY12 R&M***	***($10,996.70)***		***Total FY13 R&M***	***($13,080.62)***

Note: Uder the Toyota Meintenence Protection Program, FMH must purchese the oil filter only: oil and lebor ere included in the package. also, Toyota will chege the oil at any time the customer chooses, for the life of the car.

Appendix L
Toyota Yaris purchase and lease offer

Dear Nathan,

Here are some revised cost numbers for the Yaris leases, and for outright purchase of the vehicles. I calculated two different lease scenarios that would give you up to 84,000 miles per year: 3 cars at 28,000 per year each, and four cars at 21,000 miles per year each.

The first scenario assumes you will use three cars and put up to 48,000 miles per year on each. These 36-month leases include the DARCARS Maintenance Protection Program, and Vehicle Service Agreement from Toyota protecting beyond the warranty coverages up to 6 years or 100,000 miles. **With initial out-of-pocket of $1,967.90, the remaining 35 monthly payments would be $406.90.**

The second scenario assumes you will use four cars and put up to 36,000 miles per year on each. These 36-month leases include the DARCARS Maintenance Protection Program, and Vehicle Service Agreement from Toyota protecting beyond the warranty coverages up to 4 years or 65,000 miles. **With initial out-of-pocket of $1,904.06, the remaining 35 monthly payments would be $343.06.**

For the outright purchase of the vehicles, with Maryland registration (and including the DARCARS Maintenance Program and the Vehicle Service Agreement from Toyota protecting beyond the warranty coverages up to 6 years or 100,000 miles), **the purchase total for each vehicle would be $16,296.00.**

I hope this information is useful! Let me know how else we can assist you!

Sincerely,

Joe Bushong-Taylor
Internet Sales
DARCARS Toyota of Frederick
301-696-6300

YARIS SPECIFICATIONS

Model Number: 1422A
Model Description: 2007 Toyota Yaris 3-Dr Liftback
Factory Installed Accessories: FE CQ CP
Port Installed Accessories ..: CF

Standard Features:

MECHANICAL & PERFORMANCE
1.5L DOHC 16-Valve EFI VVT-i 4-Cylinder
4-Speed Electronically Controlled
Automatic Overdrive Transmission
with Intelligence and Gated Shifter
Air Conditioning
Independent MacPherson Strut
Front Suspension
Torsion Beam Rear Suspension
Electronic Power Steering (EPS)
Electronic Throttle Control System
with Intelligence (ETCS-i)
Front Ventilated Disc Brakes
Rear Drum Brakes
14" Steel Wheels with Full Covers
and P175/65R14 Tires
Temporary Spare Tire
SAFETY
Driver Front Airbag and Front Passenger
Airbag with Advanced Airbag System
3 Point Driver & Fr Pass Seat Belts w/
Pretensioners & Force Limiters
Direct Tire Pressure Monitor System
Side-Impact Door Beams
Center High Mount Stop Lamp
EXTERIOR
Color-Keyed Bumpers, Door handles
and Outside Mirrors
Multi-Reflector Halogen Headlamps
Roof Mounted Antenna
COMFORT & CONVENIENCE
Cloth Front Bucket and Rear Seats
with Adjustable Headrests
Tilt Steering Wheel
Intermittent Windshield Wipers
Audio Prep Package (4 - Speakers)
Folding Rr Seat & Liftback Luggage Cover
Center Mounted Speedometer
with LCD Odometer, Twin Tripmeter
and Fuel Gauge Display
Passenger Dual Glove Box
Dr & Fr Pass Vanity Mirrors, Map Light
Front and Rear Cupholders

Options & Accessories:

FE: 50 States Emission

CQ: Convenience Package: AM/FM/CD with MP3/WMA Playback Capability and Auxiliary Audio Jack, 15-in. Steel Wheels with Full Covers, Rear Wiper and Rear Defroster

CP: All-Weather Guard Package: Larger Washer Tank with Level Warning, Heavy Duty Heater, Heavy Duty Starter, Rear Heater Duct, Daytime Running Lights (DRL)

CF: Carpeted Floor Mats/Cargo Mat

Appendix M
Kelly Blue Book trade-in pricing report

Kelley Blue Book
THE TRUSTED RESOURCE
kbb.com

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2001 Dodge Ram Van 1500

BLUE BOOK® TRADE IN VALUE

	Condition	Value
	Excellent	$3,700
✓	Good (Selected)	$3,270
	Fair	$2,535

Average Consumer Rating (20 Reviews) Read Reviews

4.1 out of 5 Review This Vehicle

Vehicle Highlights

Mileage: 135,000
Engine: V6 3.9 Liter
Transmission: Automatic
Drivetrain: RWD

Selected Equipment

Standard

Air Conditioning
Power Steering
AM/FM Stereo
Cassette
Dual Front Air Bags

Blue Book Trade-In Value

Trade-in Value is what consumers can expect to receive from a dealer for a trade-in vehicle assuming an accurate appraisal of condition. This value will likely be less than the Private Party Value because the reselling dealer incurs the cost of safety inspections, reconditioning and other costs of doing business.

Close Window

Vehicle Condition Ratings

Excellent $3,700

"Excellent" condition means that the vehicle looks new, is in excellent mechanical condition and needs no reconditioning. This vehicle has never had any paint or body work and is free of rust. The vehicle has a clean title history and will pass a smog and safety inspection. The engine compartment is clean, with no fluid leaks and is free of any wear or visible defects. The vehicle also has complete and verifiable service records. Less than 5% of all used vehicles

fall into this category.

✓ **Good** (Selected)

$3,270

"Good" condition means that the vehicle is free of any major defects. This vehicle has a clean title history, the paint, body and interior have only minor (if any) blemishes, and there are no major mechanical problems. There should be little or no rust on this vehicle. The tires match and have substantial tread wear left. A "good" vehicle will need some reconditioning to be sold at retail. Most consumer owned vehicles fall into this category.

Fair

$2,535

"Fair" condition means that the vehicle has some mechanical or cosmetic defects and needs servicing but is still in reasonable running condition. This vehicle has a clean title history, the paint, body and/or interior need work performed by a professional. The tires may need to be replaced. There may be some repairable rust damage.

Poor

N/A

"Poor" condition means that the vehicle has severe mechanical and/or cosmetic defects and is in poor running condition. The vehicle may have problems that cannot be readily fixed such as a damaged frame or a rusted through body. A vehicle with a branded title (salvage, flood, etc.) or unsubstantiated mileage is considered "poor." A vehicle in poor condition may require an independent appraisal to determine its value. Kelley Blue Book does not attempt to report a value on a "poor" vehicle because the value of cars in this category varies greatly.

* Maryland 12/6/2007