

Exhibit \_\_\_\_ (PJS-1)  
Schedule 5  
Page 1 of 21

---

# Aviation Services Analysis

---

2011 and June 2012 Year-to-Date Cost/Benefit Analysis

September 28, 2012

# Outline

---

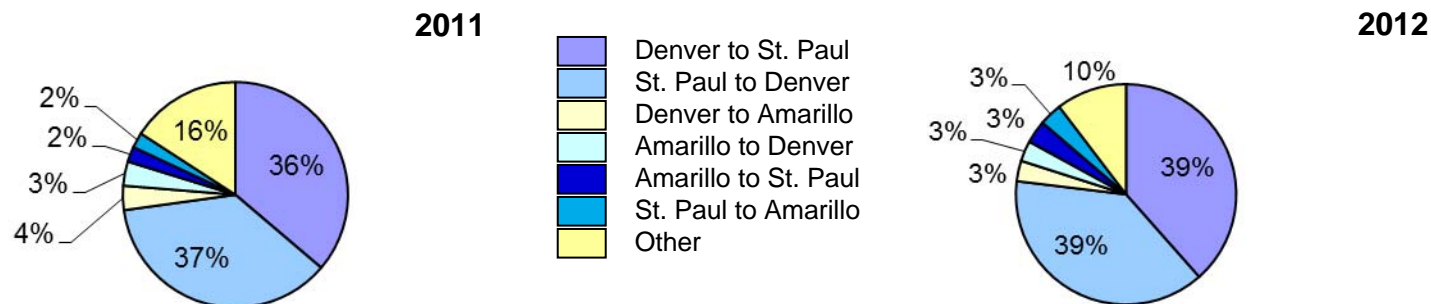
- ◆ Overview of Xcel Energy Aviation Services
- ◆ Summary of Industry Cost/Benefit Studies
- ◆ The Value of Employees' Time
- ◆ Value per Man-Hour (VMH)
- ◆ In-Flight Productivity
- ◆ Productivity During Transportation and Wait Time
- ◆ Analytical Approach
  - Assumptions
  - Average One-Way Commercial Airfares
  - Travel Times by City Pair
  - Overview of Total Cost Calculation
- ◆ Summary of Results
- ◆ Appendices
  - Example Analysis: Denver, CO to Minneapolis, MN
  - Sources

# Overview of Xcel Energy Aviation Services

- ◆ The Mission of the Xcel Energy Aviation Department is to provide convenient, efficient, and safe aviation travel and related services that enhance Xcel Energy profitability and performance through time savings and increased employee productivity
- ◆ Xcel Energy operates two Learjet 45 business aircraft, with hangar facilities in St. Paul, MN, Englewood, CO, and Amarillo, TX
- ◆ A summary of recent operating statistics is shown below:

	2011	June 2012 YTD
No. of Flights (Legs)	776	299
No. of Passengers	4,256	1,740
Nautical Miles (NM)	445,261	176,060
Flight Hours	1,227	480
Total Aviation Expenditures	\$5,693,362	\$2,428,177

- ◆ While the Xcel Energy fleet flies between St. Paul, Denver (Englewood), Amarillo, and other cities, more than 80% of the flights in 2011 and 2012 were between three city pairs:



# Summary of Industry Cost/Benefit Studies

- ◆ A number of studies conducted over the past 10 years have quantified the benefits of corporate aircraft (please see the Sources in the Appendices)
- ◆ Most of these studies define benefits broadly and attempt to correlate the use of corporate aircraft with an increase in shareholder value
  - Various shareholder value dimensions have been considered:
    - Revenue/market share growth
    - Profit margin growth
    - Asset efficiency
    - Customer and employee satisfaction
  - Many of these metrics are not applicable to a franchised utility
- ◆ However, other factors are included in these analyses, and it is these that we have focused on in this analysis:
  - Travel expense savings
  - Employee time savings
  - Increased productivity in flight
  - Productivity during transportation and wait time
- ◆ A number of other tangible and intangible benefits are often cited, some which directly impact travel times and productivity, either in flight, or before or after a trip. These include:
  - Reduced travel expenses (due to elimination of overnight stays)
  - Scheduling convenience
  - Elimination of interruptions, noise, and distractions
  - Reduced stress and post-trip fatigue
  - Personal security
- ◆ We did not attempt to quantify the potential value of these benefits in this analysis

# The Value of Employees' Time

- ◆ A study completed by Arthur Andersen in 2001<sup>1</sup> describes the “time savings of flying business aircraft non-stop on passenger-directed schedules between close-in general aviation airports using small, quick-access passenger facilities rather than flying scheduled airlines (and commonly making connections) on airline schedules between (distant) commercially served airports with vast passenger terminals.”
- ◆ The study goes on to state, “the value of a unit of employee time saved resulting from the use of business aircraft... must exceed its cost, as common business sense requires employees to generate more in revenue or profit improvement than they are paid—if they don’t, the company will not survive. The value of employee time concept is perhaps most tangibly illustrated by the hourly billing rates found for personnel in service industries. These billing rates are designed to reflect the cost of compensation for that individual, but also cover overhead, support, profit, and other costs or financial considerations for the employer.”
- ◆ The PRC Aviation study<sup>2</sup> is premised on the concept that “the direct benefits and advantages of business aircraft are either measured in terms of time saved for key employees or converted to an equivalent increment of time saved (gained). The financial value of these benefits can only be established by determining a proper dollar value of a unit of such employees’ time to the employer.”
- ◆ Further, “the field of human resource accounting has established the principle that the value of specific groups, or types of employees, to the employer can be expressed by applying a multiplying factor to the employee’s base salary.”
- ◆ This multiplying factor has been called “value per man-hour” (VMH) in other analyses. A number of VMH factors have been utilized in various studies:
  - The 2004 Daniel Sweet study<sup>3</sup> suggests a VMH factor of 2.5 times (for a professional-level employee)
  - The PRC Aviation study concludes that a “multiplier of 5.7 is appropriate for a senior corporate executive, and 3.8 is appropriate as the multiplier for middle management and professional personnel” (see page 6)
  - The NBAA Travel\$ense model<sup>4</sup> also uses the same factors of 5.7 for “senior executives” and 3.8 for “middle management and professionals” (and cites the PRC study)
  - The Andersen study includes an example with “position leverage multipliers of 5 to 20 times annual compensation”

<sup>1</sup> *Business aviation in today's economy, A guide to the analysis of business aircraft use, benefits and effects on shareholder value*, Summer 2001, Arthur Andersen LLC

<sup>2</sup> *Business Aircraft Operations Financial Benefits and Intangible Advantages*, 1991 (Revised 1995), PRC Aviation

<sup>3</sup> *Business Travel Value Analysis*, April 2004, Daniel L. Sweet

<sup>4</sup> *Travel\$ense – Business Travel Productivity Tracking Software User's Guide*, Release 3, 1999, National Business Aviation Association, Inc.

# The Value of Employees' Time (Cont'd)

- ◆ The Defense Contract Audit Agency Contract Audit Manual states:
  - “The ASBCA (Armed Services Board of Contract Appeals) ruled (in the General Dynamics case no. 31359, 92-2, BCA 24922) that ‘time savings, productivity gains, or more effective use of personnel’ can be used to demonstrate and justify the higher cost of private aircraft.”
  - “The ASBCA also ruled that it is appropriate for the contractor to consider the value of executive time in the cost-benefit analysis. The ASBCA accepted the concept that the calculation of the value of the executive's time could include an estimate of the executive's value to the corporation in addition to the executive salary and fringe benefits. The ASBCA referred to the estimate of the executive's value to the corporation as a ‘multiplier’.”
- ◆ The Minnesota Department of Transportation (MN/DOT) states on its web site that:<sup>1</sup>
  - “Elected officials and state employees are encouraged to utilize MN/DOT's aircraft whenever it is most cost effective in conducting official business outside the metropolitan area and time is essential. Flying increases employee productivity and is often the most cost efficient means of travel when comparing driving time, lodging and meal expenses.”
  - “The value of employee time often exceeds its cost to the company by substantial margins, further increasing the importance of employee time saving. A study conducted by PRC Aviation produced values of 5.7 times the rate of a senior executive and 3.8 times the rate of a middle management/professionals salary to determine the exact hourly value that employee has to the organization. Subsequently, MN/DOT, in a study of their own, determined that a multiplying factor for (a Transportation Worker) specialist should be included at the rate of 2.4 times their hourly and benefits rate.”
  - “There would be those who would argue that no one person's worth is 5.7 times their salary. However, using a base salary multiplier of 2 could easily be defended as merely a loss of productive time while driving plus the time to accomplish the normal working tasks above that as a doubling of time.”
- ◆ “A Harvard study and industry analysts have found that on average, each employee generates revenue and/or adds value at a rate of three times their salary.”<sup>2</sup>
- ◆ “(R)esearch... has indicated that the individual's value is between one and three times their salary (a Harvard University study found that it was three times a person's salary, which many analysts have found to be an accurate estimate).<sup>3</sup>

<sup>1</sup> <http://dotapp7.dot.state.mn.us/flyordrive/about.vm>

<sup>2</sup> *Topic Brief - Calculating the Cost of Vacancy*, 2009, Volt Information Sciences, Inc.

<sup>3</sup> *Calculating the Cost of Vacancies*, October 16, 2007, Dr. John Sullivan, Human Resources Leader

# Value per Man-Hour (VMH)

- ◆ The PRC Aviation study identified a number of methods which are “widely applied professionally and in business practices” to determine the value of executives and other employees to corporations
  - Eight methods were determined to be appropriate for application to corporate personnel. (Three were excluded as the resulting multipliers were thought to be too extreme [high])
  - Of the remaining five methods used as a basis for determination of senior executive value, four of the five were also used for the determination of the value of middle management and professional personnel
- ◆ These methods, and the results computed by PRC Aviation, are shown in the table below:

Method	Senior Executive	Middle Mgmt.	Description
Service Industries	5.0 to 7.0	2.5 to 5.0	Billing rates versus salary levels for service service firms for different types of employee (senior partners 5 to 7X, partners and senior associates 3 to 5X, and professional employees at engineering firms 2.5 to 3X)
Five Times Salary	N/A	N/A	5X salary rule of thumb for key man insurance (rationale is that a replacement can be found and trained within a five-year period)
10 Percent Rule Whole Life	4.9	N/A	Amount of life insurance that can be purchased with 10% of salary
Benefit Term Insurance	5.0 to 7.0	3.0	Group term insurance benefits offered to employees (often 3X salary) and senior executives, 2 to 4X salary above the basic group policy)
Replacement Cost Insurance Present Value of Term of Replacement	5.0 to 5.3	3.5	Present value of the replacement cost over the life of the employee (15 to 20 years)
Replacement Cost Insurance Present Value of Term of Replacement Plus Inefficiencies	6.4 to 6.7	4.8	Present value of the replacement cost over the life of the employee (15 to 20 years), including learning curve inefficiencies over 3 to 5 years
PRC Averages	5.7	3.8	



# In-Flight Productivity

- ◆ In 1997, Louis Harris and Associates, Inc., conducted a survey on behalf of the National Business Aircraft Association<sup>1</sup>. They concluded that passengers of business aircraft are more productive aboard company aircraft than in the office or aboard commercial aircraft

*Passengers report spending nearly half (48 percent) of their time aboard company aircraft in work-related meetings, conferences, or discussions with other company employees or customers, compared with only six percent of time in these activities while aboard commercial aircraft.*

*Further, compared to a typical office productivity level of 5.0, passengers rank their productivity while aboard the company jet at 6.2, while productivity aboard commercial airline aircraft is only 3.2.*

- ◆ In 2009, a similar survey was conducted by Harris Interactive<sup>2</sup> which stated that employees use their time onboard company aircraft more effectively and productively than when they are in the office or on commercial flights

*Passengers dedicate the majority of their time aboard business aircraft to work-related tasks: an average of 36% of their time is spent in meetings with colleagues, almost one third (30%) of their in-flight time is dedicated to doing individual work tasks (another 6% was spent in work-related meetings with customers).*

*The allocation of time changes significantly when these passengers fly on commercial planes. Over one third (36%) of the time is spent doing non-work related activities such as reading or entertainment, 28% of the time is allocated to individual work tasks, and most of the remaining time (25%) is spent sleeping or resting (8% is spent on other non-work-related activities).*

*In total, passengers spend over twice the amount of time on work-related tasks when they are on business aircraft as opposed to commercial (72% vs. 31%).*

*Passengers were also asked to rate their productivity aboard the aircraft in a typical hour using a scale from 1 to 10, where 5 was the office baseline. Compared to a typical hour in the office (five, the baseline on the scale), passengers rate their productivity aboard a company jet at 6, which is a 20% increase in productivity as compared to the office. Airline aircraft productivity ranks significantly below office productivity at an average of 3. This is a 40% drop in productivity from time in the office.*

- ◆ The 2004 Daniel Sweet study also applied different productivity credits—in this case 75% for travel by corporate aircraft, and 15% for travel by commercial airline

<sup>1</sup> Survey of Companies Using Turbine-Powered General Aviation Aircraft for Business Transportation, Study No, 718235, June 24, 1997, Louis Harris and Associates, Inc.

<sup>2</sup> The Real World of Business Aviation: A Survey of Companies Using General Aviation Aircraft, October 15, 2009, Harris Interactive, Inc.



# Productivity During Transportation and Wait Time

- ◆ In 2011, the University of Applied Science Heilbronn partnered with the Association of Corporate Travel Executives (ACTE), SAP, and DuntonTinnus Consulting to conduct a study<sup>1</sup> on the productivity effect of smart phones for business travelers
- ◆ The research methodology involved undertaking a series of personal interviews with experts in the travel industry, followed by a detailed online survey answered by 210 ACTE members, 90% of whom already owned a smart phone
- ◆ Based on this survey, the perceived productivity improvement through the usage of smart phones was substantial
  - “75% of the respondents agreed or strongly agreed to the statement that a mobile device enormously increases their productivity.”*
  - “The usage of mobile technology increases the productivity of business travelers between 30-50%.”*
- ◆ The main influencing factors for more productive trips were time saving aspects and a more flexible choice of working hours and environments
  - “Checking and responding to emails, using the organizer (calendar, reminder, etc.) are the most common features used by respondents of the survey. Using the web browsing capabilities is still just the third most common tool.”*
- ◆ In November 2011, Citrix Systems, Inc. announced findings from a global survey<sup>2</sup> that examined the adoption of consumer-focused communications devices in the workplace and their impact on corporate security and privacy. The survey revealed that several companies were benefiting from an increase of as much as 30% in productivity due to use of personal smart phones, tablets, and other devices for business use
  - “Businesses are seeing productivity gains of up to 36 percent from employees using both personal and business devices. (In the U.S.) 53 percent of businesses have recorded productivity improvements of more than 10 percent, with 16 percent confirming gains of more than 30 percent.”*

<sup>1</sup> *Mobile Technology and Business Travel: How does mobile technology influence the productivity of business travelers?*, 2011, University of Applied Science Heilbronn with partners ACTE Global, SAP and DuntonTinnus Consulting

<sup>2</sup> *Businesses Unprepared to Support New Mobile Ways of Working*, November 21, 2011, Citrix Systems, Inc.

# Analytical Approach

- ◆ For the purposes of this analysis, comparisons of the door-to-door travel time for Xcel Energy Aviation Services passengers versus commercial airline alternatives were developed
  - Commute time between Xcel Energy offices and airports/hangars was based on Google Maps estimated drive times
  - Average flight times between city pairs were based on Xcel Energy actuals and published flight times for commercial airlines on Travelocity and other web sites
  - Allowances for average commercial air travel delays were based on Bureau of Transportation Statistics results
- ◆ Passenger mix was analyzed for all flights flown in 2011 and 2012. The average compensation per passenger (average salary for each level times a benefits loader, plus incentives) was computed
- ◆ The “lost” productivity during travel time was computed for each option by applying a VMH multiplier
  - A productivity differential for work-related activities during flight time was applied, based on the results of the 2009 Harris study
    - 72% for corporate aircraft (a “loss” of productivity of 28%); 31% for commercial airlines (a “loss” of 69%)
  - Based on the 2011 ACTE and University Heilbronn study, a productivity factor of 40% was applied for work-related activities during transportation, security, check-in and wait time (***this is a change in methodology from the 2011 analysis***)
- ◆ Cost per flight for Xcel Energy corporate aircraft was based on average cost per nautical mile and distance per leg
- ◆ Commercial airfares reflect the average of the lowest round-trip prices by departure date over 2011 and June year-to-date 2012, based on published customer searches on Priceline (prices were based on 7 to 21-day advance purchases prior to departure with a trip length of 2 to 10 days (see page 11 for more details))
- ◆ The total cost of each travel option for each leg, based on the average number of passengers flying between each city pair, was then computed
  - An example of this analysis is shown in the Appendices
- ◆ The total cost and total travel time for each option for all six city pair legs were summarized

# Assumptions

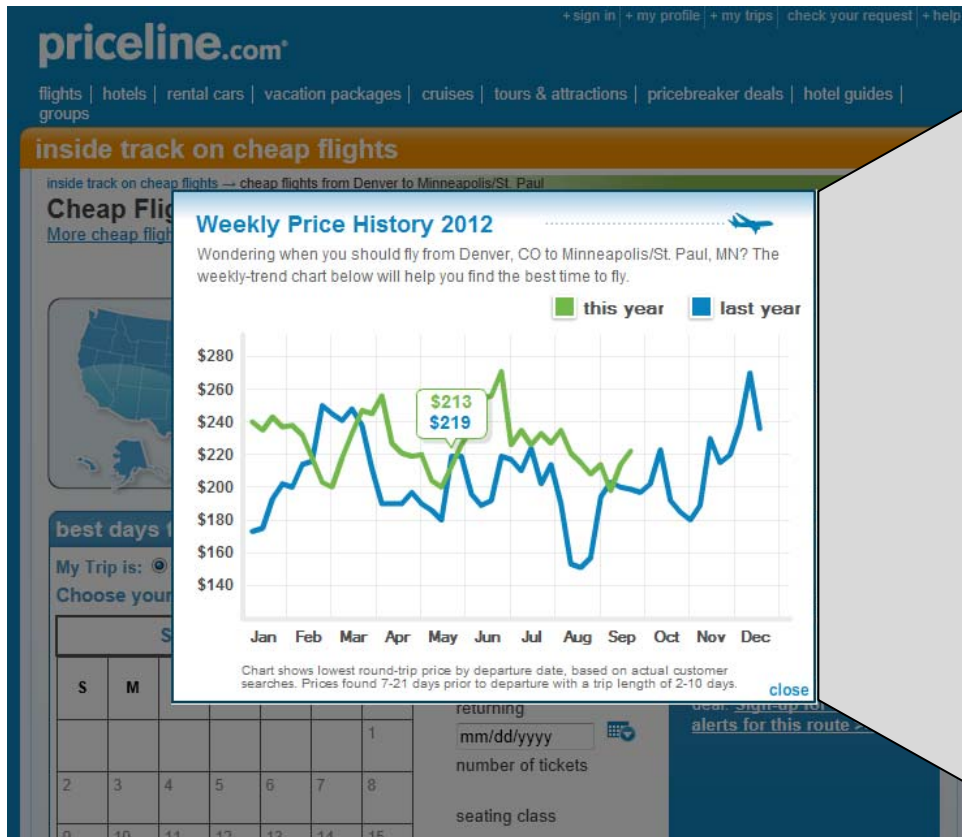
## ◆ Commercial One-Way Airfares

- Since the commercial airfares used in the analysis are historical, they may differ from current fares due to the addition or deletion of flights between city pairs by the airlines, changes in fuel costs, etc.
- The commercial airfare analysis also involves assumptions regarding what might be considered “reasonable” flight options for business travel. Hence, the commercial flight time analysis excludes flights leaving in the middle of the day and flights with unusually long flight times
- The MSP-AMA commercial flight path is relatively long with no direct flights connecting the two airports and is likely to involve an overnight hotel stay. Hotel charges related to commercial travel have not been included in this analysis

## ◆ Productivity Analysis

- The transportation and wait time analysis assumes no productivity for one leg of office-airport transportation. The underlying assumption is that a passenger will drive for one leg of airport transportation and take a taxi or shuttle for the other leg. Zero productivity was assumed for driving time and time to get to the car if the passenger was driving
- Zero productivity was assumed for taxiing and deplaning time
- The definition of Arrival Delay on Therefore Average Delay time for commercial airlines has been split 50/50 between productive and non-productive time. The underlying assumption is that a passenger can be productive during boarding delays due to smart phone usage, etc. However, commercial airlines’ rules prohibit the use of smart phones during take-off and landing, making tarmac/landing delays unproductive

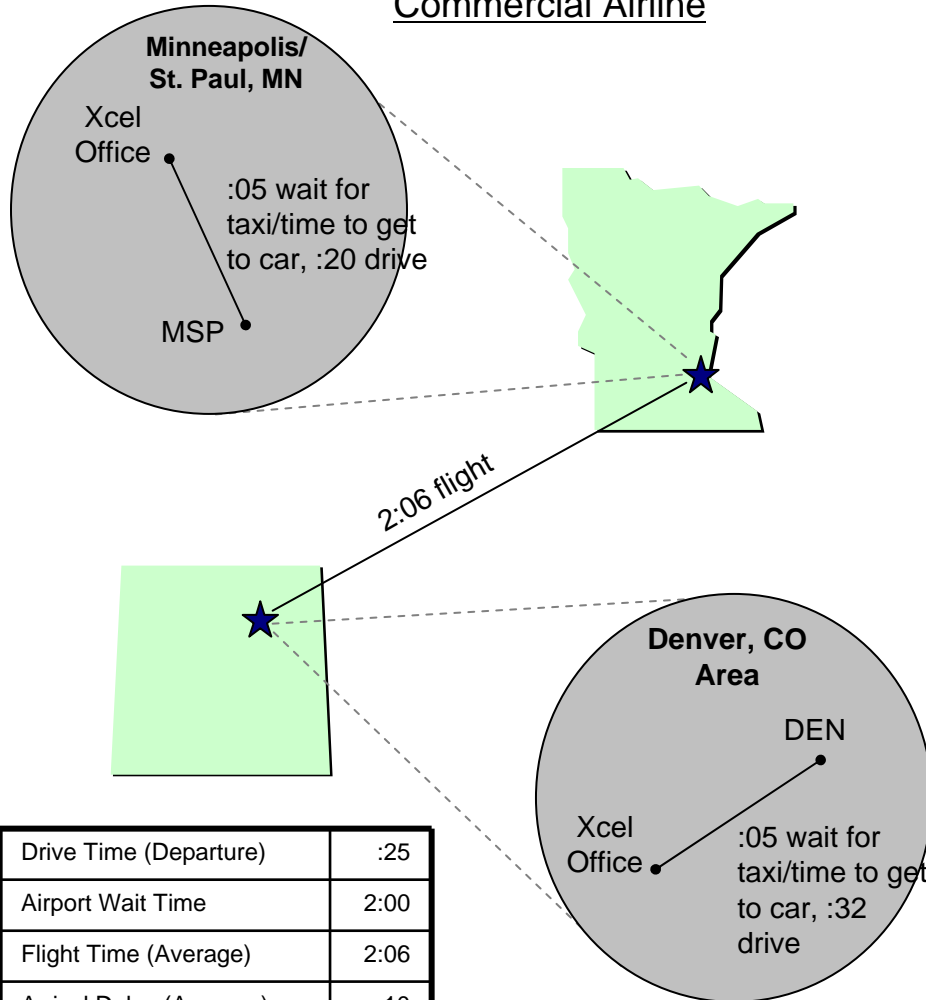
# Average One-Way Commercial Airfares



- ◆ Commercial one-way airfares reflect 50% of the average of the lowest round-trip prices available by departure date between 2011 and YTD June 2012, based on published actual customer searches on Priceline
- ◆ Per Priceline, prices were found 7-21 days prior to departure with a trip length of 2-10 days

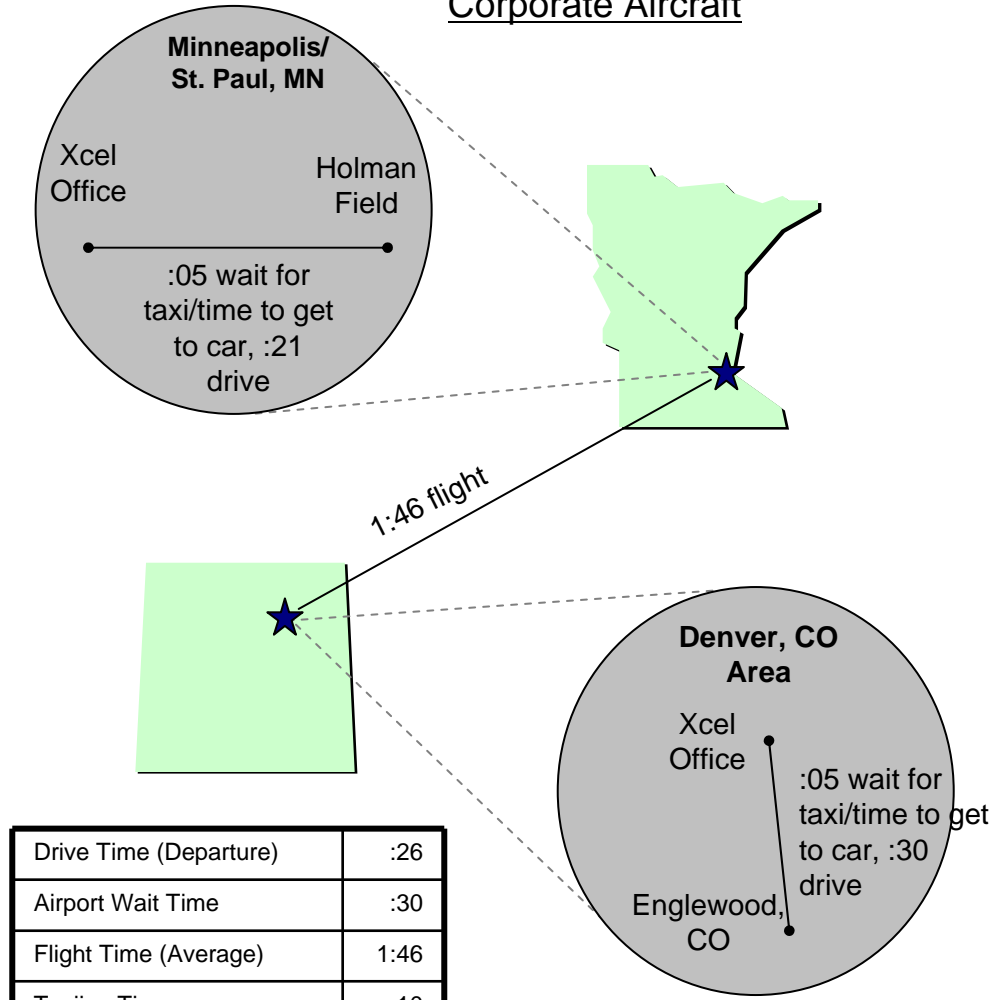
# Travel Times: St. Paul, MN to Denver, CO

## Commercial Airline



Drive Time (Departure)	:25
Airport Wait Time	2:00
Flight Time (Average)	2:06
Arrival Delay (Average)	:10
Deplaning Time	:15
Drive Time (Arrival)	:37
<b>TOTAL</b>	<b>5:33</b>

## Corporate Aircraft

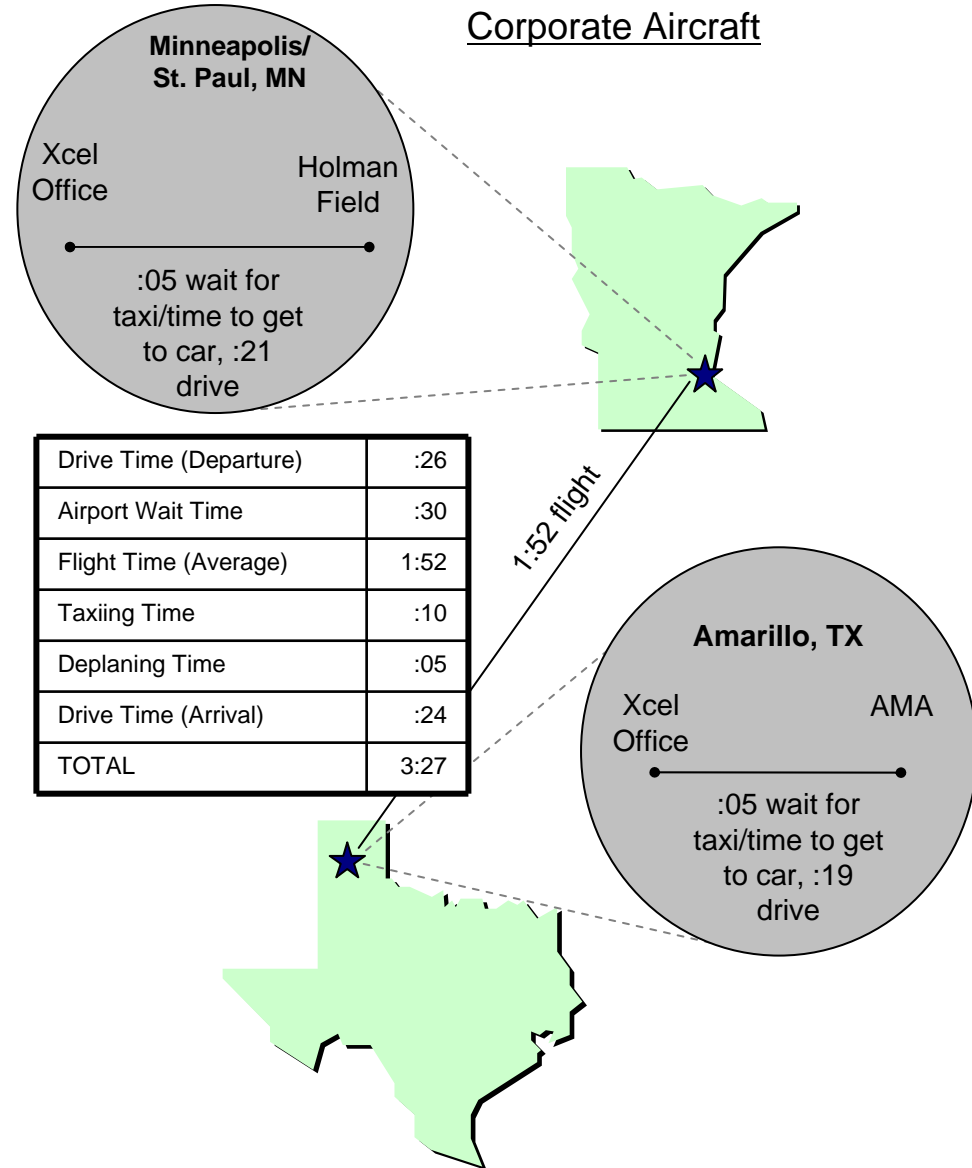
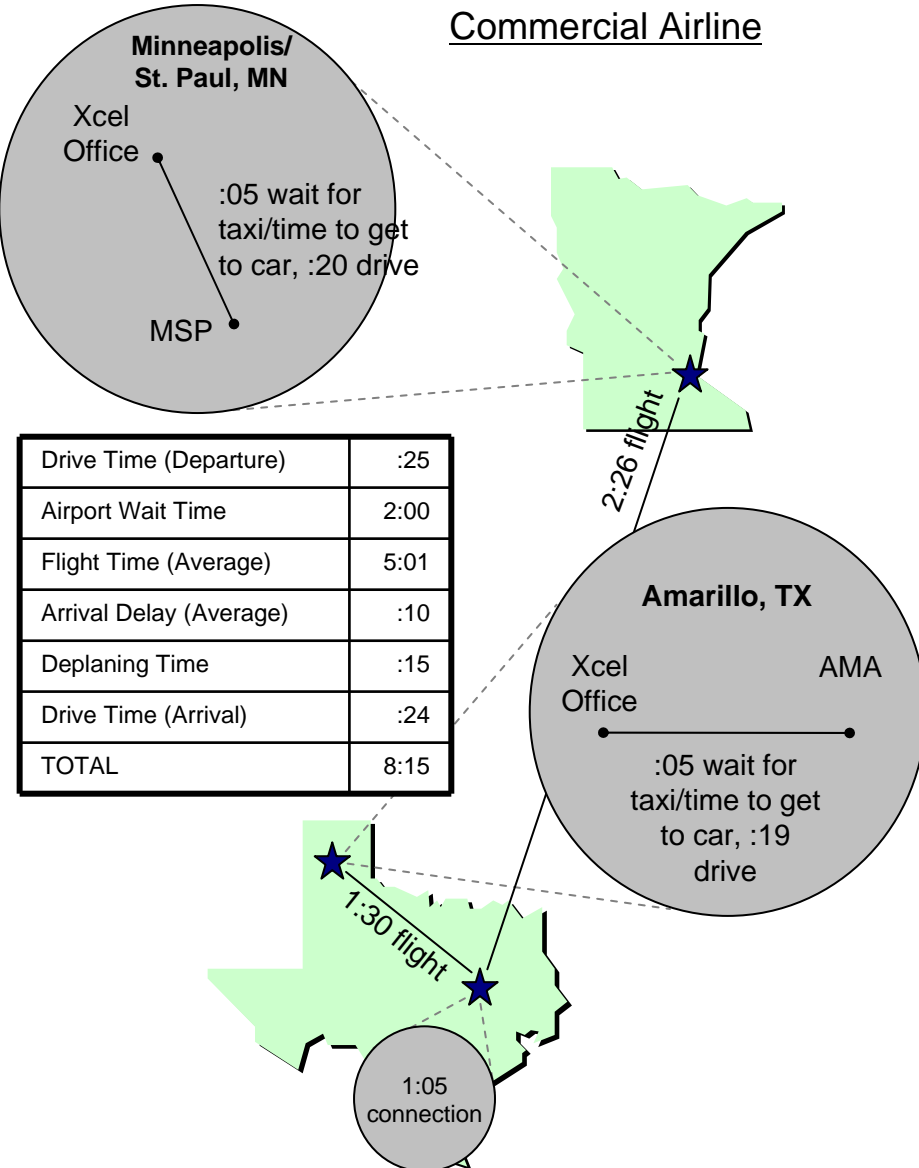


Drive Time (Departure)	:26
Airport Wait Time	:30
Flight Time (Average)	1:46
Taxiing Time	:10
Deplaning Time	:05
Drive Time (Arrival)	:35
<b>TOTAL</b>	<b>3:32</b>

# Travel Times: St. Paul, MN to Amarillo, TX

## Commercial Airline

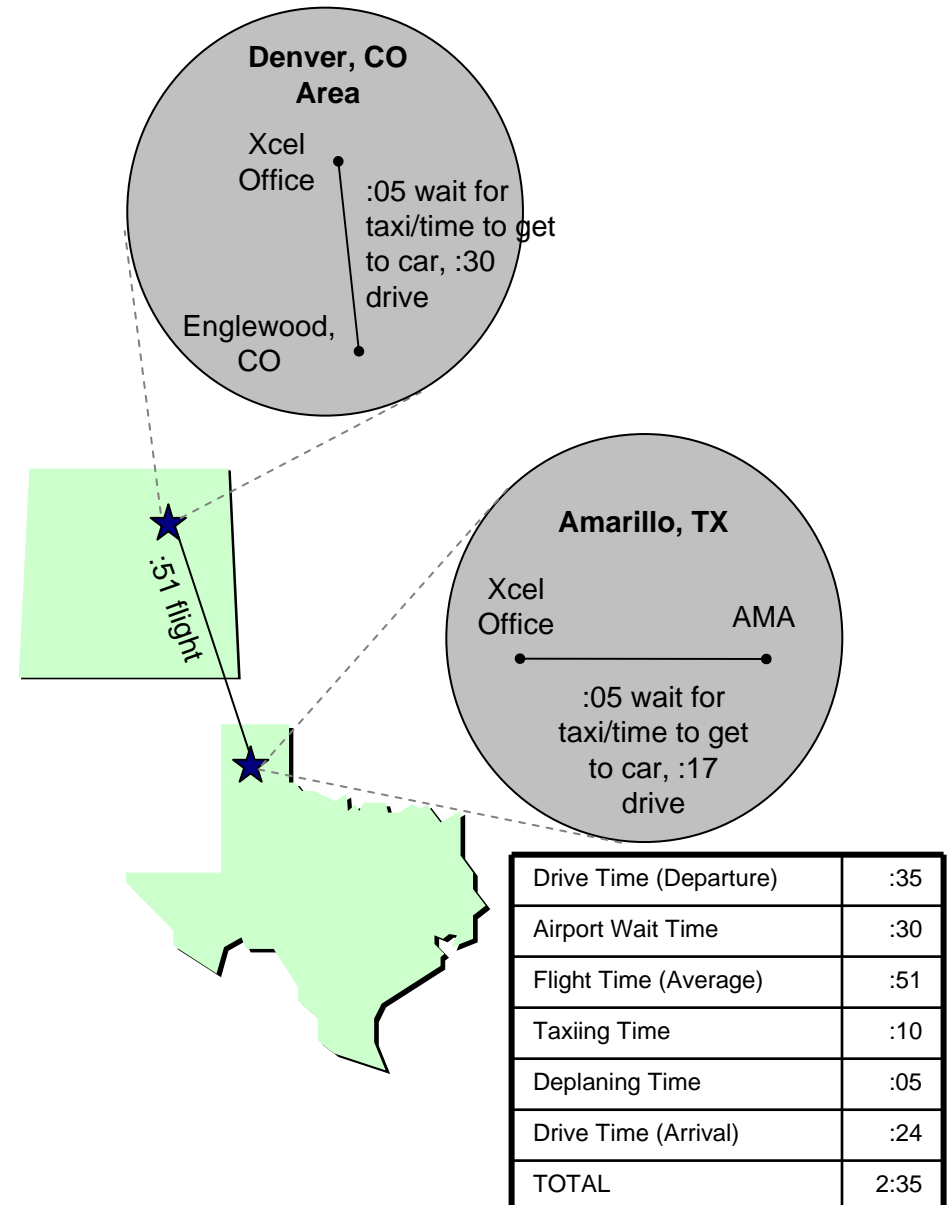
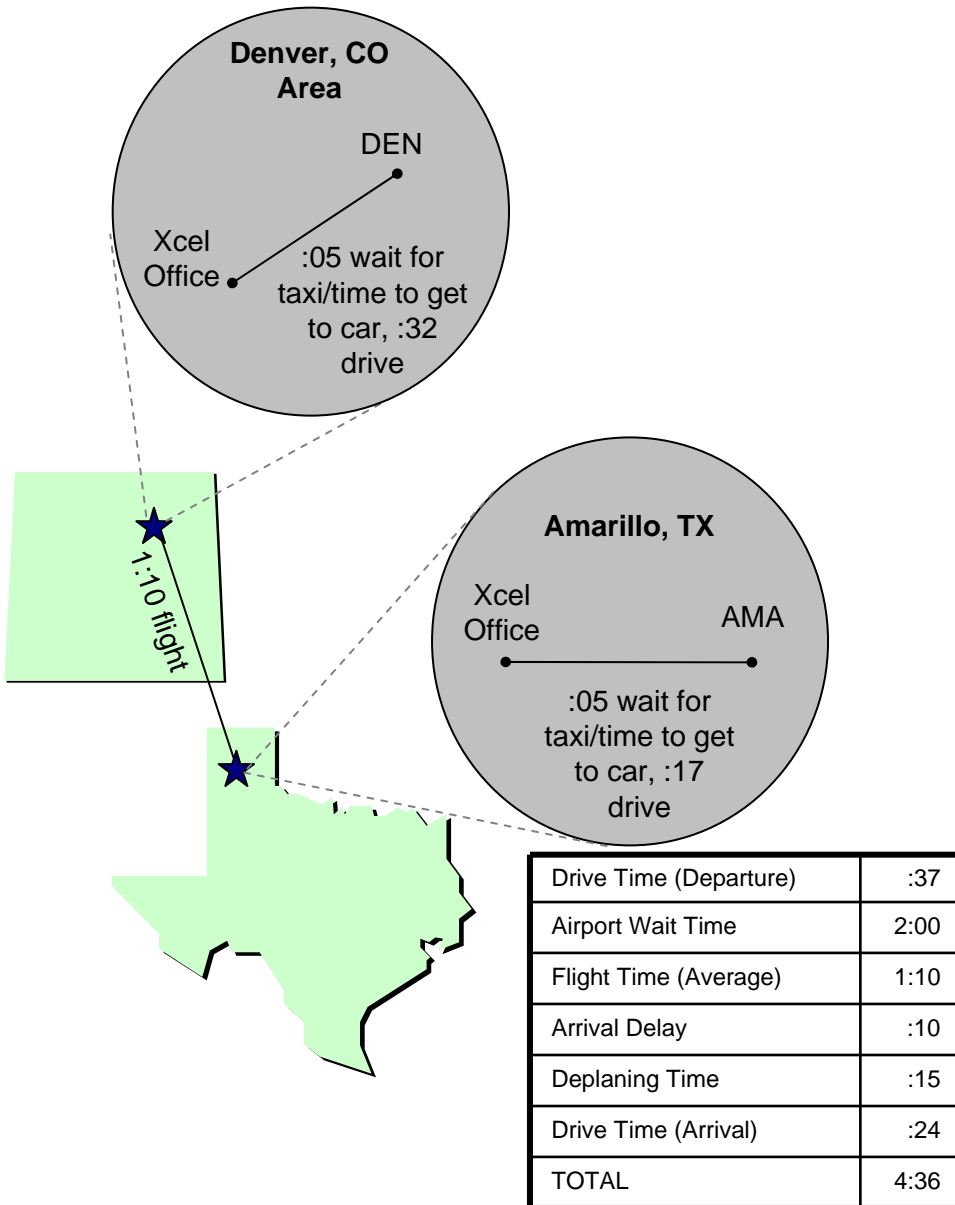
## Corporate Aircraft



# Travel Times: Denver, CO to Amarillo, TX

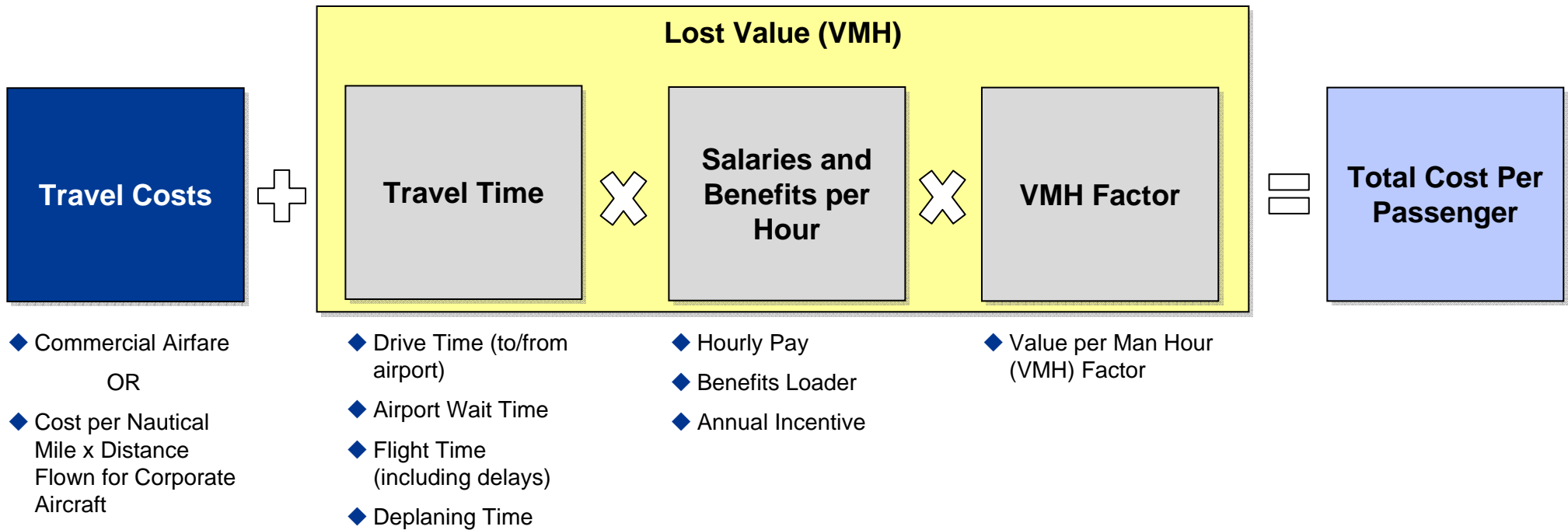
## Commercial Airline

## Corporate Aircraft





# Overview of Total Cost Calculation



# Overview of Total Cost Calculation (Cont'd)

Example: Denver, CO to Minneapolis, MN

Commercial Airline

**Travel Costs**  
\$115.00



**Lost Value (VMH)**  
\$1,170.81



**Average Number of Passengers**  
6.1



**Total Cost Per Flight**  
\$7,893.77

Corporate Aircraft

**Travel Costs**  
\$1,379.37



**Lost Value (VMH)**  
\$572.35



**Average Number of Passengers**  
6.1



**Total Cost Per Flight**  
\$11,981.90

Assumes 2x VMH multiplier

**Additional Costs Utilizing Corporate Aircraft**  
\$4,088.13

# Summary of Results

- ◆ Based on 2011 and annualized 2012 cost and travel statistics, Xcel Energy's corporate aircraft fleet cost between \$1.9M and \$2.3M more than comparable commercial airline travel alternatives for the six city pairs analyzed

## Incremental Cost of Corporate Aircraft Use (More)/Less Than Commercial Airline Use

	2011	2012 Annualized
2.0 VMH	(\$2,261,252)	(\$1,889,158)



# Example Analysis: Minneapolis, MN to Denver, CO

**Cost-Benefit Analysis of Corporate Aircraft and Commercial Airline Travel (Example)**

 Year **2012** Change Cell B3 on "Summary" worksheet to 2012 to apply 2012 data

Minneapolis to Denver		Corporate Aircraft	Commercial Airline
Distance (NM)		614	614
Average Pax per Leg		6.1	6.1
Number of Legs		1	1

Time Spent for One Way Trip		Corporate Aircraft	Commercial Airline
Wait Time for Taxi or Shuttle/Time to get to Car if Driving Office to Airport		0.08	0.08
Allowance for Security, Check-in and Wait Time		0.35	0.33
		0.50	2.00
Flight Time		1.75	2.09
Taxiing Time		0.17	0.00
Average Delay		0.00	0.16
Deplaning Time		0.08	0.25
Wait Time for Taxi or Shuttle/Time to get to Car if Driving Airport to Office		0.08	0.08
		0.50	0.53
<b>Total (one way trip)</b>		<b>3.52</b>	<b>5.53</b>

Total travel times

Commute time based on Google Maps search results

Cost for One Way Trip per Person		Corporate Aircraft	Commercial Airline
Travel-En Route		\$1,383.29	\$107.50
Lost VMH per One Way Trip Per Person		\$576.73	\$1,196.51
Rental Car/Taxi/Shuttle		\$0.00	\$0.00
Hotel		\$0.00	\$0.00
Meals		\$0.00	\$0.00
Other		\$0.00	\$0.00
<b>Total Cost</b>		<b>\$1,960.02</b>	<b>\$1,304.01</b>

Cost For All Passengers		Corporate Aircraft	Commercial Airline
Average Pax per Leg		6.1	6.1
<b>Total Cost</b>		<b>\$11,998.71</b>	<b>\$7,982.81</b>

**Comparative costs of corporate vs. commercial air travel for all passengers on this flight**

Average flight times; Corporate per Xcel Energy, Commercial is average per published flight times

Value per Man Hour (VMH) Calculations						
	% Flights Flown	Hourly Salary	Benefits Loader	Total Hourly Compensation	Value Multiplier	VMH
Board Members	0%	\$ -	0%	\$ -	-	\$ -
CEO	1%	\$ 1,060	22%	\$ 1,293	2.0	\$ 2,586
COO	0%	\$ 748	26%	\$ 942	2.0	\$ 1,883
Senior Executive	12%	\$ 270	29%	\$ 349	2.0	\$ 698
Vice President	18%	\$ 151	33%	\$ 200	2.0	\$ 401
Director/Manager	42%	\$ 78	37%	\$ 107	2.0	\$ 213
Other Employees	24%	\$ 55	40%	\$ 77	2.0	\$ 154
Non-Employees	2%	\$ -	0%	\$ -	-	\$ -
				<b>Wt. Average</b>		<b>\$ 311</b>

Go to "Assumptions" to change the values in these cells

VMH

Total Lost VMH		Corporate Aircraft	Commercial Airline
Potential Lost VMH During Transportation, Security, Check-in and Wait Time*		\$ 313.72	\$ 807.47
% of Transportation and Wait Time Spent on Work-Related Activities	40%		40%
Potential Lost VMH During Flight		\$ 544.87	\$ 650.76
% of Flight Time Spent on Work-Related Activities	72%		72%
VMH on Work-Related Activities		\$ 517.79	\$ 524.72
Lost VMH During Driving and Wait Time*		\$ 235.93	\$ 263.00
<b>Total Lost VMH</b>		<b>\$ 576.73</b>	<b>\$ 1,196.51</b>

Productivity during transportation and wait time

Productivity differential between Corporate and Commercial air travel during flight

Cost of Corporate Aircraft Service	
Nautical Miles Flown	176,060
Aviation Expenditures	\$ 2,428,177
Cost per Nautical Mile	\$ 13.79

# Sources

- ◆ *Business Aircraft Operations Financial Benefits and Intangible Advantages*, 1991 (Revised 1995), PRC Aviation
- ◆ *Survey of Companies Using Turbine-Powered General Aviation Aircraft for Business Transportation*, Study No, 718235, June 24, 1997, Louis Harris and Associates, Inc.
- ◆ *TravelSense – Business Travel Productivity Tracking Software User’s Guide*, Release 3, 1999, National Business Aviation Association, Inc.
- ◆ *Business aviation in today’s economy, A shareholder value perspective*, Spring 2001, Arthur Andersen LLP
- ◆ *Business aviation in today’s economy, A guide to the analysis of business aircraft use, benefits and effects on shareholder value*, Summer 2001, Arthur Andersen LLP
- ◆ *Business Travel Value Analysis*, April 2004, Daniel L. Sweet
- ◆ *Business Aviation – An Enterprise Value Perspective*, Fall 2009, Nexa Advisors, LLC
- ◆ *The Real World of Business Aviation: A Survey of Companies Using General Aviation Aircraft*, October 15, 2009, Harris Interactive, Inc.
- ◆ *DCAA Contract Audit Manual (DCAA Manual 7640.1)*, December 2009, Defense Contract Audit Agency
- ◆ *Fly or Drive Calculator*, Minnesota Department of Transportation
- ◆ *Mobile Technology and Business Travel: How does mobile technology influence the productivity of business travelers?*, 2011, University of Applied Science Heilbronn with partners ACTE Global, SAP, and DuntonTinnus Consulting
- ◆ *Businesses Unprepared to Support New Mobile Ways of Working*, November 21, 2011, Citrix Systems, Inc.