

Resource Conservation during Business Travel
Environmental Stewardship Transportation Technical Team
October 15, 2010

Recommendation

Encourage (educate and incentivize) the use of mass transit (bus service) by MSU employees when traveling out of Detroit Metropolitan Airport (DTW) for business travel. The Transportation Technical Team unanimously approved this recommendation at its September 23 meeting.

Background

Research conducted by the Transportation Technical Team of 2007 travel vouchers indicates that twice as many employees initiated their business-related air travel out of DTW as opposed to Capital Region International Airport (LAN). A sampling of every 40th voucher revealed that 17% (467 out of the 2,745 vouchers sampled) flew out of DTW. When extrapolated out, this would indicate that approximately 17,400 business-related trips originated out of DTW, whereas approximately 7,900 originated out of LAN. The data also reveals that only 7.0% of the DTW trips (32 out of the 467 vouchers sampled) utilized mass transit (the Michigan Flyer) to commute to DTW.

While the utilization of DTW can often be attributed to personal preference, carrier flexibility, and schedule, there are both environmental and economic reasons for utilizing mass transit. Encouraging the use of mass transit (bus service) is in line with university environmental sustainability goals including a 15% reduction in both greenhouse gas emissions and energy consumption by 2015.

The Transportation Technical Team understands the value in maintaining a strong regional airport and by no means wishes to undermine its success. The goal is to encourage employees who are flying out of DTW to use mass transit rather than a private car, whenever such a choice is practical. As shown below, we make this recommendation for both environmental and economic reasons.

Community Impact - Environmental

The *Union of Concerned Scientists* has prepared an analysis (December 2008) regarding the carbon footprint produced by various modes of travel for trips of various lengths. The trip from Lansing to DTW is approximately 90 miles by highway, so the figures for a 100-mile trip are most relevant (see Table 1). From this we can ascertain:

- 1) For 1, 2 or 4 travelers, the motor coach (bus) has a carbon footprint between 20% and 25% of the carbon footprint of an airplane.
- 2) When a car (not an SUV) has one traveler, its carbon footprint per passenger is worse than that of an airplane. Even when a car has four passengers, its carbon footprint for all of them is approximately twice that of a motor coach (bus).

Table 1 Carbon footprints by vehicle and travel distance in pounds of CO² per 100-mile trip

Number of Travelers	Motor Coach (bus)	Train	Car	SUV	Airplane
1	15	45	110	140	75
2	35	85	110	140	150
4	65	170	120	150	305

Source: http://www.ucsusa.org/assets/documents/clean_vehicles/greentravel_report.pdf p.27

Community Impact - Economic

An assessment of economic data reveals that the university would also save money if more people utilized the bus for commuting to DTW. Table 2 below compares probable costs for various travel scenarios.

If people fly to DTW from LAN, the plane ticket usually costs more than if they start their flight at DTW. To determine the extra cost of flying from Lansing, Campus Planning & Administration student employees made the following cost comparisons for 16 of the largest metropolitan areas in the US. This assessment included the cost of a non-stop flight from DTW to the destination city with the cost of a one-stop flight from LAN to the same city. Trips were assumed to be three days in duration, occurring in the middle of the work week, with a 21-day advance booking.

The cost differential varied by destination city; but for one set of dates (early summer 2010), flying from LAN added an average of \$119 to the flight cost. For the second set of dates (late summer 2010), flying from LAN added an average of \$77 to the flight cost. Hence Table 2 uses the average of those two figures as the extra flight cost from LAN, which is \$98.

Table 2 Estimates of cost difference per travel option

Cost Item	Fly from LAN	MI Flyer/DTW	Private Car/DTW	Taxi/DTW
Flight premium	\$98.0	NA	NA	NA
Parking (3 days)	\$25.5	NA	\$45.0	NA
Mileage or cab round trip	NA	NA	\$85.0	\$308.0
Round trip bus	NA	\$50.0	NA	NA
Total	\$123.5	\$50.0	\$130.0	\$308.0
Cost differential compared				
To using the bus (MI Flyer)	\$73.5	\$0	\$80.0	\$258.0

Notes:

Parking at DTW averaged between using the Big Blue Deck at \$10/day and the MacNamara Terminal at \$20/day.

One-way cost of cab estimated at \$140 by www.metroairporttaxi.org/rates.htm. A 10% tip was added.

Parking at LAN is \$8.50 per day <http://flylansing.com/Parking.aspx>

From the above data we can estimate annual savings from having university employees use the bus to commute to DTW (Table 3a).

Table 3a Estimated annual savings if university employees use the bus rather than private car to DTW

Estimated annual number of trips originating from DTW	17,400
Savings per trip as compared to private car	\$80.0
Annual savings if all used the bus	\$1,392,000
Annual savings if half used the bus	\$696,000

Note: The estimated annual number of trips to DTW is equal to the number of vouchers indicating a DTW origin (435) multiplied times 40 (2007 voucher sampling included every 40th voucher). Numbers are rounded.

In addition we can also estimate the annual savings when comparing a trip originating from LAN and that of one from DTW utilizing the bus to commute (Table 3b).

Table 3b Estimated annual savings if university employees use the bus to access DTW rather than fly from LAN

Estimated annual number of trips originating from LAN	7,900
Savings per trip using bus to DTW	\$73.5
Annual savings if all took bus to DTW	\$580,000
Annual savings if half took bus to DTW	\$290,000

Note: The estimated annual number of trips from LAN is equal to the number of vouchers indicating a LAN origin (198) multiplied times 40 (2007 voucher sampling included every 40th voucher). Numbers are rounded.

Next Steps

1. Have the Office of Campus Sustainability publicize the environmental and economic advantages of taking the bus when traveling to DTW.
2. The only company currently offering bus service between East Lansing and DTW is the Michigan Flyer. MSU's travel website and new on-line reservation service *Cliqbook* msu.pways.com/ should clearly provide access to information about the Michigan Flyer. The link to the Michigan Flyer should be located under the Cliqbook navigation button marked "ground transportation." Currently it is found under "inflight". In addition, spelling errors on the Cliqbook site should be fixed Michigan Flyer. is currently misspelled as "Michicagan Flyer."
3. Enable direct billing of Michigan Flyer or other bus service to MSU accounts.
4. Provide appropriate incentives for using the bus. This could include an approval process that requires justification for using a private car or taxi to DTW rather than the bus. Such justification could include: bus schedule incompatible with traveler's flight schedule; , traveler's home address is more convenient to DTW than to any stop made by the bus to DTW; traveler is carpooling to DTW.