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Vanpool: Connecting the Workforce to Work

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This analysis explores the costs, benefits, and opportunities of vanpool in Nebraska. The analysis was commissioned by the Nebraska Department of Transportation. Some of the data used in the analysis was provided by NDOT and their partner in providing vanpool services in Nebraska, Commute with Enterprise.

WHAT IS A VANPOOL?

A vanpool is a mode of public transportation comprised of a group of riders who agree to share their ride to work in a vehicle large enough to accommodate a minimum of seven people. Vanpooling is available across the state of Nebraska. Costs vary based on the number of miles, number of commuters, and other factors.



WHO CAN BENEFIT FROM A VANPOOL?

TABLE 1

	Total workers over 16	Percent of workers that drove alone	Percent of workers that carpooled	Percent of workers that used public transportation
Metropolitan counties (5)	624,745	84%	9%	1%
Rural counties (88)	369,121	79%	10%	0.2%

Source: American Community Survey 5-year estimates 2013-2017

276,134



workers in Nebraska commute to work outside the county they live in

SEE FIGURE 1

Source: United States Census Bureau OnTheMap, 2017



WHO CAN BENEFIT FROM A VANPOOL?

Together, Table 1 and Figures 1 and 2 demonstrate that the potential user group for vanpool in Nebraska is quite large. Table 1 is the data from the American Community Survey conducted by the United States Census. In 2017, most workers statewide drove alone to work. Also notable, our five metropolitan counties, Douglas, Sarpy, Lancaster, Hall, and Dakota, have 84% of their workforce driving alone, while 79% of those in mostly rural counties drive alone.

Figure 1 provides the number of people who live in the county but commute outside of the county for work. The data comes from the United States Bureau of the Census. Their OnTheMap program allows a user to calculate the number of people that live in a county and work in the county, the number that commute into a county and live in another county and the numbers shown here, those that commute out of the county they live in for work. Adding all of the numbers shown in Figure 1, we get total commuters of 276,134. While commuting for work out of county does not necessarily mean this is someone who could vanpool it is a clear estimate of those that commute some distance for work and thus have potential to vanpool.

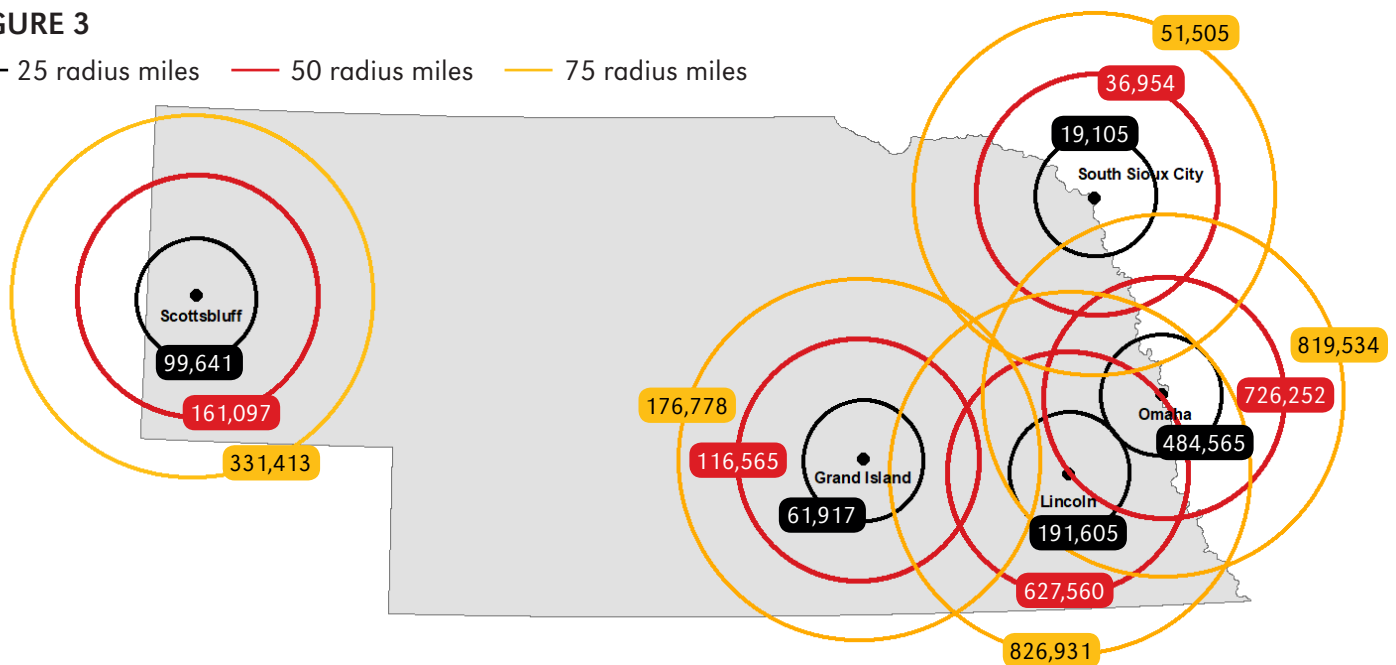
Figure 2 uses the same source as Figure 1 but zooms in on the commuter patterns of those in Lincoln and Omaha. These workforces are the largest in the state and make up a good portion of the 84% of workers that drive alone referenced in Table 1 and Figure 1. In Figure 2, the red arrows reference how many people live in Omaha but commute for work outside of Omaha. The figure shows the top 10 places people commute. The majority of Omaha residents do work in Omaha, 144,540. The location with the second highest number of commuters from Omaha is Bellevue. Almost eight thousand people commute from Omaha to Lincoln every day. This number is of particular interest because the vanpool average commute is 100 miles round trip, per day, which is close to the round trip commute from Omaha to Lincoln. The yellow arrows reference how many people live in Lincoln but commute to work outside of Lincoln. Most workers in Lincoln work in Lincoln, 81,673. Over six thousand workers from Lincoln commute for work to Omaha, 6,315.

Vanpools expand your employment pool and makes sure workers get to work

Figure 3 shows 25, 50, and 75 mile radiuses around cities that are workforce centers in the state. The number of persons 16 years or older that are in the workforce at each circumference is shown. The purpose is to demonstrate the workforce potential when the costs of commuting are reduced.

FIGURE 3

— 25 radius miles — 50 radius miles — 75 radius miles



Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages, June 2019, retrieval algorithms and interface Indiana University, Kelley School of Business, Indian Business Research Center

CAN A VANPOOL REDUCE THE COST OF DRIVING ALONE?

TABLE 2

Cost of driving alone in Nebraska

Table 2 and the graphics on this page explore the costs of driving alone and compare them to the costs of a vanpool. There are a variety of methods to calculate the costs of driving alone. Important to any method, is accounting for both direct expenses like fuel, maintenance, and insurance and annualized costs like appreciation. These costs vary based on mileage, location, vehicle type, and how a person drives. Table 2 and the graphics use a well-known average adjusted rate per mile from the United States General Services Administration. The standard mileage rate is based on the fixed and variable costs of operating a privately owned automobile. The rate was \$0.58 as of January 1, 2019 (GSA, reimbursement rate).

	MILES ONE WAY	MILES ROUND TRIP	COST PER DAY	COST PER WEEK	COST PER YEAR
Lincoln/Omaha Commute					
	59.1	118.2	\$68.56	\$342.78	\$17,824.56
Franklin/Axtell Commute					
	67.6	135.2	\$78.42	\$392.08	\$20,388.16
Hastings/Clay Center Commute					
	49.6	99.2	\$57.54	\$287.68	\$14,959.36
Lincoln/Wahoo Commute					
	31	62	\$35.96	\$179.80	\$9,349.60
Waverly/Tecumseh Commute					
	53.3	106.6	\$61.83	\$309.14	\$16,075.28
Omaha/Nebraska City Commute					
	50.3	100.6	\$58.35	\$291.74	\$15,170.48
Tecumseh/Nebraska City Commute					
	39.4	78.8	\$45.70	\$228.52	\$11,883.04

Source: Google map search center of each town to the next. \$0.58 United States General Services Administration rate used as cost per mileage. <https://www.gsa.gov/travel/plan-book/transportation-airfare-pov-etc/private-owned-vehicle-pov-mileage-reimbursement-rates>

Savings of vanpool riders in Nebraska

The average person driving alone, round trip, 100 miles per day spends about



\$58 per day
or
\$1,160 per month

*See methods section for calculations.

The average person vanpooling in Nebraska spends about



\$5.61 per day
or
\$112 per month

*Not necessarily participant cost as some businesses may chip in. Includes the current NDOT rental subsidy of \$400 per month.

VANPOOL EMPLOYER BENEFITS

Employees are not the only beneficiaries of vanpooling, there is a noted upside for employers as well. According to the Best Workplaces report from the Environmental Protection Agency and Department of Transportation, employers benefit from vanpool as well. **Benefits include, less employee stress, decreased commuting costs to employees, employee empowerment, appreciation, and increased recognition of the employer as promoting environmentally friendly options.**

The biggest bonus to employers comes through improving employee morale and health. In 2015, a study concluded that employees reported, having **21% less stress**, on average, when vanpooling compared to commuting in a single occupancy vehicle.

Another potential benefit of vanpool is reduced absenteeism, by enabling employees to get to work consistently. Circadian 24/7 Workforce Solutions notes in their annual Shift Work & Absenteeism review, that when an employee is absent a business will lose about \$2,660 per shift worker, per year. A company with 50 workers could lose as much as \$133,000 annually, while large companies with 500 workers or more could lose over \$1.3 million. **In 2016, the Center for Disease Control and Prevention estimates that companies averaged a \$1,685 loss per employee, per year, due to absenteeism.**

An additional fiscal incentive to employers to offer vanpool is less costly parking. When an employer provides vanpools it can result in a decreased need for parking spaces on site. Parking lot development and maintenance can be a large cost to the employer, for instance, in 2016 Donald Shoup wrote in Access Magazine that companies will spend, on average, between \$17,000 - \$48,000 per parking space in an American city. **Taking that money and spending it on capital investments can make a difference for Nebraska businesses.**

Vanpool options can financially benefit employers through lower tax burdens. The Qualified Transportation Fringe Benefit allows employees to set aside up to \$265 per month pre-tax deductions, thereby **decreasing their amount of taxable income and in turn increasing take home pay**. The benefit to employers is this pre-tax deduction **decreases the amount of taxable payroll, which then decreases payroll taxes**. Alternatively, employers can directly fund employee's portions of vanpooling in part or full. This benefit will not appear on employees W-2 form as income, so their taxable income will not increase.

BENEFITS BY THE NUMBERS

Vanpoolers experience **21%** less stress

Absenteeism costs companies an average of **\$1,685** per employee, per year

\$17,000 - \$48,000 saved per parking space

Sources: Vanpool Benefits: Implementing Commuter Benefits as One of the Nation's Best Workplaces for Commuters. United States Environmental protection Agency Office of Air and Radiation. Updated November 2005. https://www.bestworkplaces.org/pdf/vanpoolbenefits_07.pdf. Ditmore, C. (2015). "Former vRide employee - A Comparative Analysis of Vanpool and Single Occupant Commuters' Self-Reported Stress Level Before and After the Commute." University of Alaska, Anchorage, Alaska. <https://scholarworks.alaska.edu/xmlui/handle/11122/6529>. Vanpool Benefits: Implementing Commuter Benefits as One of the Nation's Best Workplaces for Commuters. United States Environmental protection Agency Office of Air and Radiation. Updated November 2005. https://www.bestworkplaces.org/pdf/vanpoolbenefits_07.pdf. Shift Work & Absenteeism: The Bottom Line Killer. Circadian 24/7 Workforce Solutions, 2014. <https://www.circadian.com/blog/item/43-shift-work-absenteeism-the-bottom-line-killer.html>. Workplace Health Promotion: Using the Workplace to Improve the Nation's Health At a Glance 2016. Center for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, 2016. <https://www.cdc.gov/chronicdisease/resources/publications/aag/workplace-health.htm>. Vanpool Benefits: Implementing Commuter Benefits as One of the Nation's Best Workplaces for Commuters. United States Environmental protection Agency Office of Air and Radiation. Updated November 2005. https://www.bestworkplaces.org/pdf/vanpoolbenefits_07.pdf. Cutting the Cost of Parking Requirements, Donald Shoup. Access Magazine, Number 48, Spring 2016. <http://www.accessmagazine.org/spring-2016/cutting-the-cost-of-parking-requirements/>

DEMOGRAPHICS OF LINCOLN/OMAHA COMMUTERS

To provide additional context for the analysis, Tables 3 and 4 present demographics of commuters between Douglas, Sarpy (Omaha area), and Lancaster (Lincoln) counties.

Notably, most commuters between the two counties work for private companies. A fair number of commuters between Omaha to Lincoln work for the state (13.0%) and federal government (11.2%), as well.

Most commuters both ways have at least two cars in the household.











Most Omaha and Lincoln commuters are from two or more person households and likely to have a Bachelor's degree.

TABLE 3

JOB TYPE DISTRIBUTION (%)

Lives in Lancaster County but works in Douglas County or Sarpy County	Lives in Douglas County or Sarpy County but works in Lancaster County
75.4%	56.9%
Employee of private for profit company	
8.1%	8.0%
Employee of private nonprofit organization	
4.8%	7.1%
Local government employee	
3.6%	13.0%
State government employee	
5.2%	11.2%
Federal government employee	
2.8%	3.8%
Self-employed	

TABLE 4

Lives in Lancaster County but works in Douglas County or Sarpy County		Lives in Douglas County or Sarpy County but works in Lancaster County
Median earnings from wages/salary \$47,789		Median earnings from wages/salary \$55,580
Has Bachelor's Degree or more 43.9%		Has Bachelor's Degree or more 57.9%
Under age 30 30.8%		Under age 30 31.0%
Age 30 to 49 42.4%		Age 30 to 49 44.4%
Age 50+ 26.8%		Age 50+ 24.6%
Average age 39.1		Average age 38.5
Male 59.2%		Male 63.0%
Average number of persons in household 2.8		Average number of persons in household 3.1
One person households 12.9%		One person households 10.8%
Average number of household vehicles 2.5		Average number of household vehicles 2.4

Source: American Community Survey 2013-2017 5-Year Estimate PUMS file, U.S. Census Bureau

METHODS

Savings of vanpool riders in Nebraska

The cost of a vanpool varies by the number of persons and other factors such as mileage. Thus, to calculate the average cost per rider of a vanpool we looked at the monthly invoices of eight current vanpools in Nebraska. We calculated a total, monthly cost per person using total monthly cost, average commute days, and daily commute miles. We then subtracted \$400 from each total cost to account for the current NDOT rental subsidy per vanpool, then divided the costs by the occupancy listed on the invoices. That number is the total cost per person to vanpool per month. We also calculated a daily rate based on average commute days. The total cost per day ranged from \$3.21 to \$10.26. We averaged the eight invoices to calculate an average daily cost and monthly cost. This may or may not be the actual cost to a participant as some employers cover the cost to vanpool entirely.

ABOUT US



The Center for Public Affairs Research at the University of Nebraska at Omaha is a research and community outreach unit in the College of Public Affairs and Community Service. Our mission is to provide the data you want with insights you need from sources you trust.

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