

## Transportation & AIQ Statistics for Champaign-Urbana and UIUC

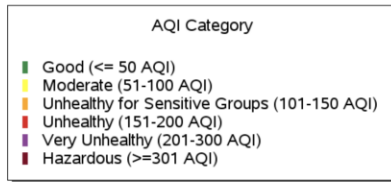
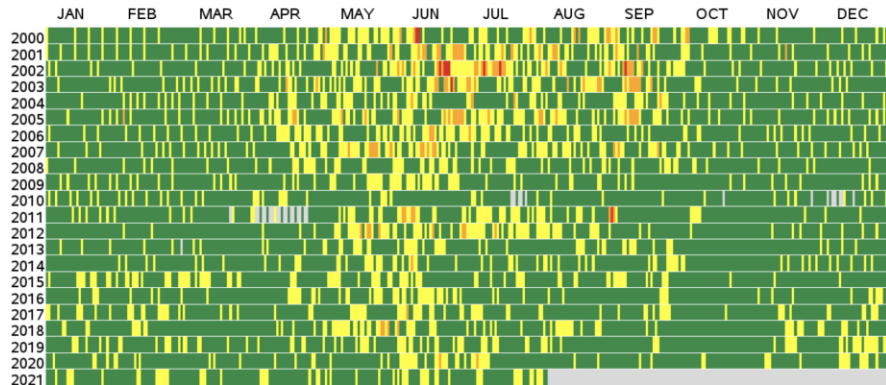
August 5, 2021

### Champaign Air Quality, Transportation, and Resident Information

- **Population & Demographic (US Census Bureau)**
  - [Champaign, IL](#) – 4.3% increase in population since 2010
    - 209,689 (July 2019)
    - 201,081 (April 2010)
    - Full demographic breakdown can be found on the Champaign, IL Census Bureau
  - [Urbana, IL](#) – 0.2% increase in population since 2010
    - 42,214 (July 2019)
    - 42,136 (April 2010)
    - Full demographic breakdown can be found on the Urbana, IL Census Bureau
  - [State of Illinois](#) – -1.2% decrease in population since 2010
    - 12,671,821 (July 2019)
    - 12,831,572 (April 2010)
  - **From the above estimations, Champaign-Urbana, IL makes up 1.99% of the entire Illinois population**
- **[Real Time Air Quality Reports for Illinois Communities \(EPA\)](#)**
  - Champaign is 3<sup>rd</sup> in the list. This resource can be incorporated in the app to show the current air quality each day in Champaign, inspiring individuals to use active modes of transport when its bad and reinforcing positive behavior when the air quality is good.
- **[Illinois Annual Air Quality Reports \(EPA\)](#)**
  - Air Monitoring Station(s)
    - State Water Survey Township Rd. 500 E. (+40.052780, -88.229531)
    - Ameren Substation 904 N. Walnut (+40.1237962, -88.229531)
    - North Thomas St. (+40.244913, -88.188519)
  - [2019 Report](#)
    - 2019 AQI Summary for Champaign
      - Had 65% or more of the days in the “Good” category
      - 77.0% Good, 23.00% Moderate
    - PM<sub>2.5</sub> Monitoring
      - 95 Total Samples
      - Highs (in order from greatest to smallest):
        - 20.1, 19.9, 19.8, 16.5, 17.5, 15.9, 14.8, 14.4
    - 2019 Estimated Champaign Stationary Point Source Emissions [Tons/Year]
      - Carbon Monoxide: 355.8
      - Nitrogen Oxides: 711.9
      - PM10 : 183.2
      - Sulfur Dioxide: 367.6
      - Volatile Organic Material: 422.9
  - [2018 Report](#)

- 2018 AQI Summary for Champaign
  - Had 65% or more of the days in the “Good” category
  - 4 occurrences of “Unhealthy for Sensitive Groups” in Champaign, 70 total.
  - 77.50% Good, 21.40% Moderate, 1.10% Unhealthy for Sensitive Groups
- PM<sub>2.5</sub> Monitoring
  - 119 Total Samples
  - Highs (in order from greatest to smallest):
    - 26.1, 17.7, 16.8, 15.9, 15.4, 15.2, 14.8, 14.6
- 2018 Estimated Champaign Stationary Point Source Emissions [Tons/Year]
  - Carbon Monoxide: 353.4
  - Nitrogen Oxides: 658.8
  - PM10 : 199.0
  - Sulfur Dioxide: 310.8
  - Volatile Organic Material: 404.1
- [2017 Report](#)
- [2016 Report](#)
- [2015 Report](#)
- [2014 Report](#)
- [2013 Report](#)
- [2012 Report](#)
- [2011 Report](#)
- [2010 Report](#)
- [Air Data – Multiyear Tile Plot](#)
  - 1. Pollutant = All AQI Pollutants
  - 2. Period = From 2000 to 2021
  - 3. Geographic Area = Champaign-Urbana, IL

Daily AQI Values, 2000 to 2021  
Champaign-Urbana, IL



Source: U.S. EPA AirData <<https://www.epa.gov/air-data>>  
Generated: August 5, 2021

- [The Sustainability Tracking, Assessment, & Rating System \(STARS\)](#)
  - UIUC – OP-1: Greenhouse Gas Emissions
    - Submitted February 27, 2019
    - Led by Meredith Moore and Micah Kenfield
    - Overall Score: 72.89 (85.00 points grants platinum status)
    - [UIUC GHG Emissions Inventory: Annual Report 2018 \(.csv file\)](#)
      - Broken down by source, GHG, and STARS Scope
  - [Link to iCAP Portal content for STARS \(including all reports\)](#)
  - [AASHE STARS Report 1 – Transportation](#)
    - The University of Illinois received 4.81/7.00 points in the Transportation category of the 2019 STARS Report with a 0.17/1.00 in Campus Fleet, a 1.80/2.00 in Student Commute Modal Split, a 0.84/2.00 in Employee Commute Modal Split, and a 2.00/2.00 in Support for Sustainable Transportation. In the Campus Flett category, 1.00 point is awarded for schools in which their entire campus fleet is composed of vehicles that are alternatively fueled/powered. Not many schools have a high scoring in this category, but universities who have a higher score than U of I have a greater number of vehicles in their campus fleet and have descriptions of the institution’s efforts to support alternative fuel and power technology in its motorized fleet. A long term plan to raise this score would be to increase the number of buses that are alternatively powered or more sustainable. A quick way to raise the university’s score in this area would be to add a description. The Student Commute Modal Split has a high number of points, but the Employee Modal Split still needs some work. A campus mode-share survey was sent out in January 2019 to collect the commuter data for both students and employees, and it was found that a total of 42 percent of the

university's employees use a more sustainable commuting option, but no data was given on the distribution of employees that walk, carpool, bike, use public transportation, etc. One way to entice employees to take this survey, thus allowing the university to obtain more detailed information, is upon completing the survey, the employee's name will be entered into a drawing to win a prize such as Illini Sustainability spirit wear. Current work is being done by WIEFX Sustainability Scholars to improve commuting to work. The Bike Path Renovation: Armory Avenue Path South of Gregory Hall project by Natalie Hill is making it easier for employees and students to bike to class. Another project by Chikako Minaj and Riya Gyanmote is currently being performed to add more electric vehicle charging stations on campus. This will eventually allow more people to drive electric cars to work. One last way to convince employees to commute to work more sustainably is to put closer parking marked specifically for low emission vehicles. With all of these modifications, the score in commuting will eventually grow. Since the university received a 2.00/2.00 in Support for Sustainable Transportation, it needs to maintain these great numbers.

- **AASHE STARS Report 1 – Air and Climate**

- In 2019 the University of Illinois scored a 5.46/11.00 in the Air and Climate category with a 4.46/10.00 in Greenhouse Gas Emissions and a 1.00/1.00 in Outdoor Air Quality. Although the university has a good scoring in Outdoor Air Quality, Greenhouse Gas Emissions need to be improved. Arizona State reported a decrease in their net Scope 1 and Scope 2 GHG emissions per weighted campus user of 100 percent whereas the University of Illinois had a decrease of 34.12 percent (shown in Figures 7 and 8). One of the programs that Arizona State has implemented is an air travel carbon fee that is used to plant trees in an urban forestry program. This program is similar to the current Study Abroad Carbon Emission Offset program implemented by WIEFX Sustainability Scholars Leah Courtney and Parima Michareune. Other programs that Arizona State initiated are a car-sharing program, a pedestrian transportation promotion, and a Campus Metabolism web tool which displays real-time energy use and generation on their campus. Programs like these could help offset our carbon emissions. Arizona State provided a link as a brief description of what they are doing to lower Greenhouse Gas Emissions. A link to the 2015 iCAP could be displayed here, showing Figure 10. Once the University of Illinois obtains its goal of zero carbon emissions (Figure 9), the campus will receive a perfect score in this category.

- Percentage of particulate matter in IL air from vehicle emission

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#### Related News Articles:

- [People of color hardest hit by air pollution from nearly all sources, UIUC Research News](#)

#### iCAP Portal Pages:

- [Reduce Transportation Emissions](#)
  - [Decrease Emissions from UI Fleet](#)

- [Pavement Maintenance and Management](#)
- [Reduce Cars \(Vehicle Miles Traveled\) on Campus](#)
  - [Discourage Vehicles on Campus](#)
  - [Encourage Ride-Sharing](#)
  - [Encourage Active Transportations](#)
- [Encourage Low-Emission Vehicles](#)
- [Reduce Business Travel Emissions](#)
  - [Encourage Telecommuting](#)
  - [Encourage Train Travel for Business Trips](#)
  - [Offset Emissions from Plane Trips](#)
  - [Encourage Ride-Sharing for Business Trips](#)

### Transportation Statistics:

- [Percent of Staff Driving Alone](#)
  - FY07 – 74.00% (mi-plan survey)
  - FY11 – 65.00% (CUUATS survey)
  - FY19 – 60.00%
  - FY20 – 55.00% (iCAP 2015 Goal)
  - FY25 – 50.00% (iCAP 2015, 2020 Goal)
  - FY30 – 45.00% (iCAP 2015, 2020 Goal)

- **UI Fleets:**

The UI Fleet includes over 1,000 motor vehicles, used for a variety of purposes. These include large construction vehicles, trucks, sedans, and some individual mobility vehicles.

The Facilities & Services (F&S) fleet is divided into three categories:

1. Car Pool: contains 220 vehicles including cars, SUV's and minivans. F&S provides fast and convenient full-service car rental for temporary (day or monthly rental) and permanent rentals.
2. Truck Pool: contains 300 service vehicles for electrical work, cargo-vans and dump trucks.
3. Heavy Equipment Pool: contains around 24 vehicles. They are large construction vehicles including the waste transfer trucks.

*(NB. These counts are from a June 2017 report.)*

- [4.1 Percent Reduction from Air Travel by Fiscal Year \[%\] \(Measured with a Baseline of FY14\)](#)
  - FY15 – 12.79%
  - FY16 – 21.22%
  - **FY17 – 28.86%**
  - FY18 – 26.99%

- FY19 – 24.26%
  - [Air Travel Emissions by Fiscal Year \[eCO2 in Metric Tonnes\]](#)
    - FY08 – 27,453.40
    - FY09 – 21,992.40
    - FY10 – 25,299.00
    - FY11 – 23,191.30
    - FY12 – 27,344.40
    - FY13 – 31,247.00
    - **FY14 – 41,834.60**
    - FY15 – 36,483.00
    - FY16 – 32,955.80
    - FY17 – 29,760.10
    - FY18 – 30,543.12
  - Air Travel Total Expenses per OBFS by Fiscal Year [\$]
    - FY12 – \$8,123,686.20
    - FY13 – \$9,283,105.82
    - **FY14 – \$14,014,590.00**
    - FY15 – \$3,319,877.00
    -
  - [4.2 Percent Reduction in Emissions from the UI Fleet \[%\]](#) (Measured with a Baseline of FY08)
    - FY09 – 1.57%
    - FY10 – 18.54%
    - FY11 – 13.01%
    - FY12 – 5.98%
    - FY13 – 9.49%
    - FY14 – 3.25%
    - FY15 – 5.53%
    - FY16 – 15.22%
    - FY17 – 15.07%
    - FY18 – 19.30%
    - FY19 – 24.60%
    - FY20 – 20.00% (iCAP 2015 Goal)
  - [Actual UI Fleet Emissions by Fiscal Year \[eCO2 in Metric Tonnes\]](#)
    - FY08 – 5,688.00
    - FY09 – 5,598.70
    - FY10 – 4,633.20
    - FY11 – 4,947.90
    - FY12 – 5,345.90
    - FY13 – 5,148.00
    - FY14 – 5,503.40
    - FY15 – 5,373.60
    - FY16 – 4,822.50
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- **ADDITIONAL INFORMATION TO FIND FROM CASE STUDY**

- How much GHG can be reduced from the use of less vehicles/trips
- Average distance of car trips
- 40% of all car trips in the U.S. are made within 2 miles of home.
- The average Illinois driver travels \_\_\_\_\_ miles in approximately \_\_\_\_\_ trips per week.
- Roughly \_\_\_\_\_% of Illinois' population lives in Champaign, IL.
  - Population density in Central Illinois.

In addition, year round use of the Tracker has given companies and municipalities the ability to host TravelWise "mini" Challenges at a time that best meets their needs. Results thus far include:

- 11 mini-Challenges held
  - Saved 827,067 vehicle miles
  - Eliminated 53,076 vehicle trips
  - Reduced 231 tons of vehicle emissions
  - Saved \$245,193 in gas, vehicle maintenance and wear-and-tear
  - Burned 1,447,746 calories
  - Participation from 1,580 individuals
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- Privacy issues with app
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1. Talk to UI parking (around Aug 18<sup>th</sup>)
    - a. How will the program begin?
    - b. Basic req. Relinquish parking pass (UI parking only has access to that)
  2. Talk with Urbana, Champaign, and Savay parking
    - a. "use parking lots in the community"
    - b. Don't want to take them by surprise
  3. Talk about partnerships/collaborations with departments
    - a. Outside companies more open to partnerships, so they can increase visibility
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- Create a cross check system, Stacey and Sarthak lead program and oversee (not parking, they will be involved but not to their extent)
    - With UI parking collaboration, cross check who has a parking permit & eligibility
  - This information is for the "dashboard"