

AGENDA



3:00 P.M.

CITY COUNCIL SPECIAL MEETING

WEDNESDAY, SEPTEMBER 28, 2022

NOTES:

- Meeting room is wheelchair accessible. American Disabilities Act (ADA) accommodations are available upon request. Please phone 928-282-3113 at least two (2) business days in advance.
- City Council Meeting Agenda Packets are available on the City's website at:

www.SedonaAZ.gov

THE MEETING CAN BE VIEWED
LIVE ON THE CITY'S WEBSITE AT
WWW.SEDONAAZ.GOV OR ON
CABLE CHANNEL 4.

GUIDELINES FOR PUBLIC COMMENT

PURPOSE:

- To allow the public to provide input to the City Council on a particular subject scheduled on the agenda.
- This is not a question/answer session.
- The decision to receive Public Comment during Work Sessions/Special City Council meetings is at the discretion of the Mayor.
- No disruptive behavior or profane language will be allowed.

PROCEDURES:

- Fill out a "Comment Card" and deliver it to the City Clerk.
- When recognized, use the podium/microphone.
- State your:
 1. Name and
 2. City of Residence
- Limit comments to
3 MINUTES.
- Submit written comments to the City Clerk.

1. CALL TO ORDER/PLEDGE OF ALLEGIANCE/MOMENT OF SILENCE

2. ROLL CALL

3. SPECIAL BUSINESS

LINK TO DOCUMENT =

- a. AB 2870 **Discussion/possible action** regarding approval to participate in the Green Power Partners Agreement through Arizona Public Service (APS).
- b. AB 2740 **Discussion/possible direction** regarding an update on progress made on the Climate Action Plan.
- c. **Discussion/possible action** regarding future meetings/agenda items.

4. EXECUTIVE SESSION

If an Executive Session is necessary, it will be held in the Vultee Conference Room at 106 Roadrunner Drive. Upon a public majority vote of the members constituting a quorum, the Council may hold an Executive Session that is not open to the public for the following purposes:

- a. To consult with legal counsel for advice regarding matters listed on this agenda per A.R.S. § 38-431.03(A)(3).
- b. Return to open session. Discussion/possible action regarding executive session items.

5. ADJOURNMENT

Posted: 09/22/2022

By: DJ

JoAnne Cook, CMC,
City Clerk

Note: Pursuant to A.R.S. § 38-431.02(B) notice is hereby given to the members of the City Council and to the general public that the Council will hold the above open meeting. Members of the City Council will attend either in person or by telephone, video, or internet communications. The Council may vote to go into executive session on any agenda item, pursuant to A.R.S. § 38-431.03(A)(3) and (4) for discussion and consultation for legal advice with the City Attorney. Because various other commissions, committees and/or boards may speak at Council meetings, notice is also given that four or more members of these other City commissions, boards, or committees may be in attendance.

A copy of the packet with material relating to the agenda items is typically available for review by the public in the Clerk's office after 1:00 p.m. the Thursday prior to the Council meeting and on the City's website at www.SedonaAZ.gov. The Council Chambers is accessible to people with disabilities, in compliance with the Federal 504 and ADA laws. Those with needs for special typeface print, may request these at the Clerk's Office. All requests should be made **forty-eight hours** prior to the meeting.

CITY COUNCIL CHAMBERS
102 ROADRUNNER DRIVE, SEDONA, AZ

The mission of the City of Sedona government is to provide exemplary municipal services
that are consistent with our values, history, culture and unique beauty.



**CITY COUNCIL
AGENDA BILL**

**AB 2870
September 28, 2022
Special Business**

Agenda Item: 3a

Proposed Action & Subject: Discussion/possible action regarding approval to participate in the Green Power Partners Agreement through Arizona Public Service (APS).

Department	City Manager's (Sustainability)
Time to Present	15 minutes
Total Time for Item	30 minutes
Other Council Meetings	N/A
Exhibits	A. GPP Option A Form Agreement Sedona

City Attorney Approval	Reviewed 09/19/22 KWC	Expenditure Required
		\$ Approximately \$10,000 over 1 year
City Manager's Recommendation	Approve the Green Power Partners (GPP) agreement with APS to procure Green Power for 100% of applicable usage for one year from the date of finalized agreement.	Amount Budgeted
		\$ \$12,500
		Account No. 10-5220-09-6543 (Description) Renewable Energy Purchase
		Finance ☒ Approval

SUMMARY STATEMENT

Background: City Council approved the Sedona Climate Action Plan (CAP) on July 14, 2021. The CAP sets a science-based target of reducing community-wide emissions in Sedona by 50% by the year 2030. The CAP identifies 50 actions to be taken across five sectors (buildings & energy, transportation & land use, materials & consumption, water & natural systems, and climate resilience). Among those actions, the City is to increase the consumption of renewable energy to 100% by 2025. Additionally, Object 5.2 of the 2020 Municipal Sustainability Plan strives to increase efficiencies and use of renewable energy sources.

Staff will present on the potential agreement to participate in the Green Power Partners (GPP) program through Arizona Public Service. The GPP has been approved through the Arizona Corporation Commission (ACC). Option A of the GPP agreement as is would aim to procure 100% of applicable electrical consumption from renewable energy sources (e.g., wind and solar) for a term of one year from the date of acceptance.

Participation in the GPP is anticipated to cost approximately \$10,000 over the duration of the term (1 year) based on historical consumption and projected increases in consumption, and the Sustainability Program has budgeted \$12,500 for the procurement of renewable energy in

the FY23 budget. Additionally, based on the 2021 Municipal GHG Inventory, this agreement would help mitigate approximately 50% of municipal emissions through receivable renewable energy credits under this agreement. This allows for properly accounting for renewable energy emissions within the respective inventory. The GPP Agreement is attached as **Exhibit A** to this Agenda Bill.

Climate Action Plan/Sustainability Consistent: ☒Yes ☐No ☐Not Applicable

Board/Commission Recommendation: ☐Applicable - ☒Not Applicable

Alternative(s): 1. Reject the agreement outright, ending the pursuit of renewable energy procurement through the Arizona Public Service Green Power Partners. 2. Modify the agreement to apply to less than the 100% of applicable electrical consumption.

MOTION

I move to: approve the Green Power Partners (GPP) agreement with APS to procure Green Power for 100% of applicable City usage.

GREEN POWER PARTNERS OPTION A SUBSCRIPTION AGREEMENT

This Green Power Partners Option A Subscription Agreement (this “Agreement”), dated, is entered into by and between Arizona Public Service Company (“APS”) and City of Sedona (“Customer”). APS and Customer may be referred to herein individually as a “Party” and collectively as the “Parties”.

WHEREAS, Customer desires to participate in APS’s Rate Rider Schedule GPP – Green Power Partners (“Schedule GPP”) under Option A (as described in Schedule GPP);

WHEREAS, the Parties desire to set forth herein the terms and conditions of Customer’s participation in Schedule GPP; and

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

AGREEMENT

1. Green Power Sale. On a monthly basis during the Term of this Agreement, APS shall sell to Customer, and Customer shall purchase from APS, the following quantity or percentage, as specified below, of Green Power and associated Renewable Energy Credits generated by renewable energy facilities serving APS customer load (including Customer), at the following price:

Monthly Quantity (MWh/month) or Percentage (% of Customer usage/month): [100%]
Price: \$2.50/MWh

For the purposes of this Agreement:

“Green Power” is energy (measured in MWh) generated by a renewable energy facility serving APS customer load.

“MWh” means megawatt-hour.

“Renewable Energy Credit” or “REC” is the unit used to track one (1) MWh of Green Power. Renewable Energy Credits sold hereunder include all reporting rights associated therewith, but do not include any tax credits, financial incentives, or other benefits associated with the generation of Green Power. For the avoidance of doubt, one (1) REC represents the renewable attributes associated with one (1) MWh of Green Power.

This Agreement serves as the bill of sale for each REC sold by APS to Customer, and hereby transfers from APS to Customer the exclusive right to claim each such REC for Customer’s own compliance purposes. APS plans to report to the Arizona Corporation Commission (“ACC”) regarding the total of all RECs sold under Schedule GPP, but APS

shall not otherwise track such RECs nor use such RECs for its own Renewable Portfolio Standard (“RPS”) compliance purposes. The price set forth above includes only the cost of the Green Power and the associated RECs and does not include transfer or retirement of RECs through a third-party service, which, if desired by Customer, shall be Customer’s sole responsibility.

2. APS Representations and Warranties. As of the date of each sale contemplated above, APS represents and warrants as follows:
 - (a) Its sale to Customer is its one and only sale of the Renewable Energy Credits associated with the applicable Green Power; and
 - (b) APS has title to, and ownership of, the RECs to be sold to Customer.
3. Customer Eligibility. The transaction contemplated under this Agreement shall be applied to Customer’s account(s) as follows:

All accounts under [City of Sedona], as such accounts may change from time to time/Account(s): [All Accounts].

At all times throughout the Term, Customer shall be subject to the terms and conditions of Schedule GPP and all other rate schedules and service schedules applicable to it as an APS retail customer. If Customer fails to maintain the eligibility requirements to participate in Schedule GPP, then APS may, in its sole discretion, immediately terminate, or refuse to renew, this Agreement.

4. Term. This Agreement shall commence on [] and shall be effective for a period of [one] ([1]) year(s) (the “Term”). The Term shall automatically renew for additional periods of [one] ([1]) year(s) until terminated by either Party by written notice delivered to the other Party (to the address or email listed on the signature page to this Agreement, or to such other address as such Party provides) at least thirty (30) days prior to a renewal date; provided, however, that APS may immediately terminate this Agreement at any time if the ACC enacts changes to the RPS requiring APS to retain the RECs contracted for hereunder. For the avoidance of doubt, Customer may only terminate this Agreement in advance of its renewal date, as set forth in the preceding sentence. Termination of this Agreement for any reason shall not relieve either Party from liability for payment of any amounts due that accrued prior to the termination and that remain unpaid as of the date of termination. If this Agreement is terminated while Customer is an active APS retail customer, then Customer shall retain service under the rate schedules applicable to its demand and use.
5. Disclaimer of Warranties; Limitation of Liability. Customer acknowledges that this Agreement confers no warranty of merchantability or fitness for a particular purpose, and any and all implied warranties are disclaimed. If APS fails to offer to sell the RECs as described above at any time during the Term, then Customer shall not owe the price set forth above for such RECs, but Customer shall not be entitled to any remedies, including specific performance or damages, as a result of APS’s failure, and Customer hereby

waives the same. Neither Party shall be liable for any consequential, incidental, punitive, exemplary, or indirect damages, lost profits, or other business interruption damages, by statute, in tort, or in contract. No individual representative of either Party shall have any personal liability to the other Party as a result of the breach of any representation, warranty, covenant, or agreement contained herein. It is the intent of the Parties that the limitations herein imposed on remedies and the measure of damages be without regard to the cause or causes related thereto, including the negligence of any Party, whether such negligence be sole, joint or concurrent, or active or passive.

6. Governing Law. This Agreement and the rights and duties of the Parties hereunder shall be governed by and construed, enforced, and performed in accordance with the laws of the State of Arizona, without regard to its choice of law provisions.
7. General. This Agreement (including any exhibits, schedules, and any written supplements hereto) shall constitute the entire agreement between the Parties relating to the subject matter contemplated herein. This Agreement shall be considered for all purposes as prepared through the joint efforts of the parties and shall not be construed against one party or the other as a result of the preparation, substitution, submission or other event of negotiation, drafting or execution hereof. Except to the extent herein provided for, no amendment or modification to this Agreement shall be enforceable unless reduced to writing and executed by both Parties. This Agreement shall not impart any rights enforceable by any third party (other than a permitted successor or assignee bound to this Agreement). Waiver by a Party of any default by the other Party shall not be construed as a waiver of any other default. Any provision declared or rendered unlawful by any applicable court of law or regulatory agency or deemed unlawful because of a statutory change will not otherwise affect the remaining lawful obligations that arise under this Agreement; and provided, further, that if a provision is declared or rendered unlawful or deemed unlawful, the Parties shall use their best efforts to reform this Agreement in order to give effect to the original intention of the Parties. The term “including” when used in this Agreement shall be by way of example only and shall not be considered in any way to be in limitation. The headings used herein are for convenience and reference purposes only. This Agreement shall be binding on each Party’s successors and permitted assigns.

[Signature page follows]

IN WITNESS WHEREOF, this Agreement has been executed by the Parties hereto as of the date first set forth above.

Arizona Public Service Company	[City of Sedona]
By:	By:
Name:	Name:
Title:	Title:
Contact Information: Address: Phone: Email:	Contact Information: Address: Phone: Email:



**CITY COUNCIL
AGENDA BILL**

**AB 2740
September 28, 2022
Special Business**

Agenda Item: 3b

Proposed Action & Subject: Discussion/possible direction regarding an update on progress made on the Climate Action Plan.

Department Sustainability

Time to Present 90 minutes

Total Time for Item 150 minutes

Other Council Meetings May 12, 2021, July 14, 2021, February 8, 2022

Exhibits A. 2021 City of Sedona Community GHG Inventory Report

City Attorney Approval	Reviewed 09/19/22 KWC	Expenditure Required
		\$ N/A
City Manager's Recommendation	Discussion and possible direction only.	Amount Budgeted
		\$ All active Climate Action Plan initiatives are already budgeted for FY23. Additional CAP initiatives may require funding that will be requested as part of the annual budgeting process.
		Account No. N/A (Description)
		Finance ☒ Approval

SUMMARY STATEMENT

Background: City Council approved the Sedona Climate Action Plan (CAP) on July 14, 2021. The CAP sets a science-based target of reducing community-wide emissions in Sedona by 50% by the year 2030. The CAP identifies 50 actions to be taken across five sectors (buildings & energy, transportation & land use, materials & consumption, water & natural systems, and climate resilience). These actions aim to both reduce community-wide emissions and bolster resiliency against the adverse effects of climate change.

Staff updates will include, but not be limited to, the following items:

- The City's new Sustainability Coordinator and AmeriCORP Vista
- Municipal and Community Greenhouse Gas Emissions Inventories for 2020 and 2021
- A first-round summary of the Home Energy Retrofit Project

- Arizona State University's Industrial Assessment Center site visits to City Hall Complex and Wastewater Treatment Plant
- Update on the launch and status of the Community Food Scraps Composting Pilot
- Update on public facing electric vehicle charging stations at Sunset Park, Posse Grounds Park, and proposed Uptown garage
- Update on Scorecard Pilot Project for fostering sustainable initiatives in the community
- Green Fleet Policy Status and Update
- Municipal eBike plan and procurement
- Update on solar lighting project at Posse Grounds Park
- Results from FY22 Oak Creek Watershed Agreement Partnership
- Life cycle analysis overview of solar panels and batteries
- Status Update on Off-highway Vehicle efforts
- Spotlight on Sustainability – Projects across departments that contribute to sustainability
- Community Conversations Initiative – Community-based events to supply information and generate dialogue with residents regarding sustainability topics
- Update on the Sustainability Communications and Outreach Plan
- Highlight potential project in waste management.
- Implementation of energy efficiency technologies informed by ASU IAC site visits
- Update on upcoming Household Hazardous Waste Event on Saturday, October 8th

Climate Action Plan/Sustainability Consistent: ☒Yes - ☐No - ☐Not Applicable

Board/Commission Recommendation: ☐Applicable - ☒Not Applicable

Alternative(s): for informational purposes only unless there is a preference to take a position on a particular issue or initiative.

MOTION

I move to: for information, discussion, and possible direction only.

2021 Community GHG Report



Prepared by

Bryce Beck

Sustainability Coordinator, City of Sedona

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2021 City of Sedona Community GHG Inventory Report

Overview

The Sedona Climate Action Plan (CAP) positions the City of Sedona to monitor, implement, and evaluate projects that impact the greenhouse gas emissions at the community level. The CAP sets a goal of reducing community-wide emissions by 50% by the year 2030, using a baseline emissions year of 2018. Emissions were estimated at a total of 165,800 metric tons (MT) of carbon dioxide equivalence (CO₂e) in the CAP. Greenhouse gases are compounds that are created through a variety of sources that trap heat in the atmosphere and warm the environment (MIT, 2020).

Found within this report are revised numbers for the baseline year to adjust for methodology used in the 2020 and 2021 Community calculations. The revised total emissions estimation for the 2018 baseline year is 162,733 MT (2% decrease from CAP). Total emissions estimations did not decrease substantially with the updated methodology applied to the 2018 baseline year, but the distribution of emissions changed. Emissions calculations were summarized into the following categories: Transportation, Stationary Combustion (Natural Gas), Electricity Consumption, Delivered Water, Solid Waste & Wastewater Treatment.

Compared to the Municipal Inventory, the Community Inventory contains more broad and less granular data, making it more difficult to accurately estimate emissions, since most emissions at the Community level are out of the direct control and monitoring of municipal operations. The categories that are covered in this report include the following: Electricity Consumption (Residential, Commercial, and Industrial), Stationary Combustion of Natural Gas (Residential, Commercial, and Industrial), On-Road Travel, Air Travel, Solid Waste, Delivered Water, Wastewater Treatment, Process and Fugitive Emissions. These more defined and narrowed categories are the basis of the information that was originally reported on in the CAP.

Information from this section relied on a multitude of outside partners to gather information and resources. Since a large amount of data at the community level is not tracked or overseen by City operations, collaboration from utility providers, state and county regulators, and third-party businesses is required for successful completion of a Community Inventory for any given year. Unisource Energy Service, Arizona Public Service, the Sedona Airport, Oak Creek Water Company, Arizona Water Company, Arizona Department of Environmental Quality, Arizona Department of Transportation, Waste Management and Arizona Department of Water Resources were all instrumental in the completion of the 2021 Community Inventory.

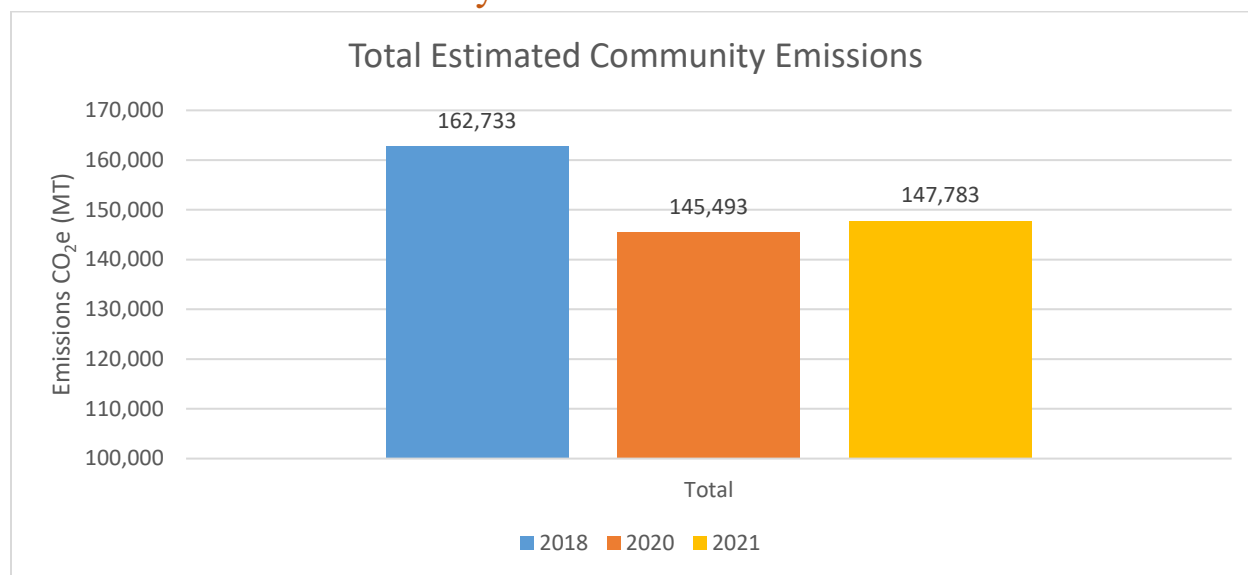
Inventory emissions calculations found within this report were developed following best practices, guidelines, and support from the Climate Registry's General Reporting Protocol, World Resource Institute's Greenhouse Gas Protocol, International Council for Local Environmental Initiatives (ICLEI), and the Environmental Protection Agency resources. Emissions reported in this inventory are in metric tons (MT) of carbon dioxide equivalence

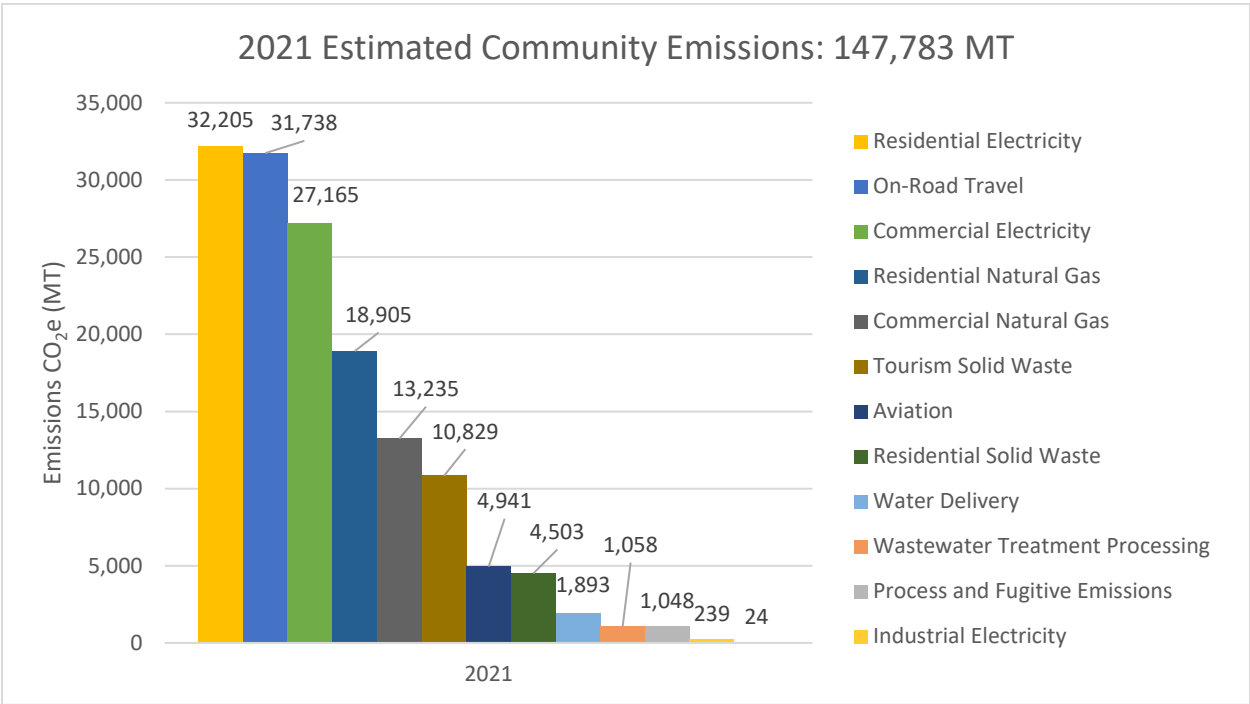
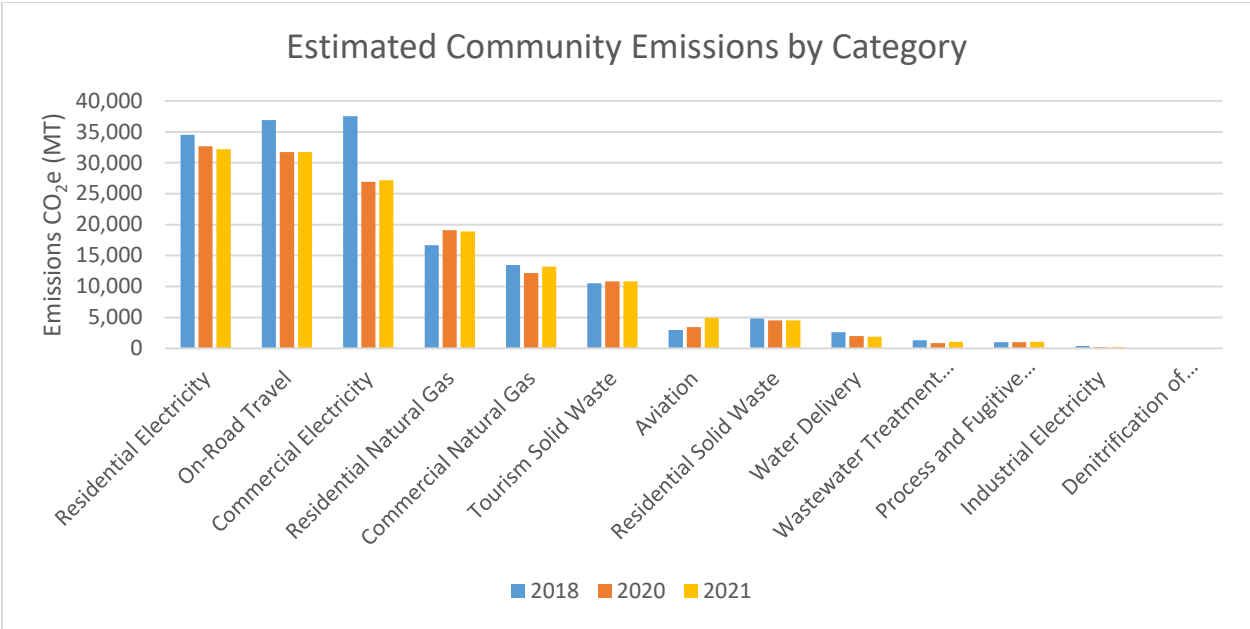
(CO₂e). Additionally, emissions calculations are done both internally and through the ICLEI ClearPath platform to provide redundancy and quality control checks on calculation methods.

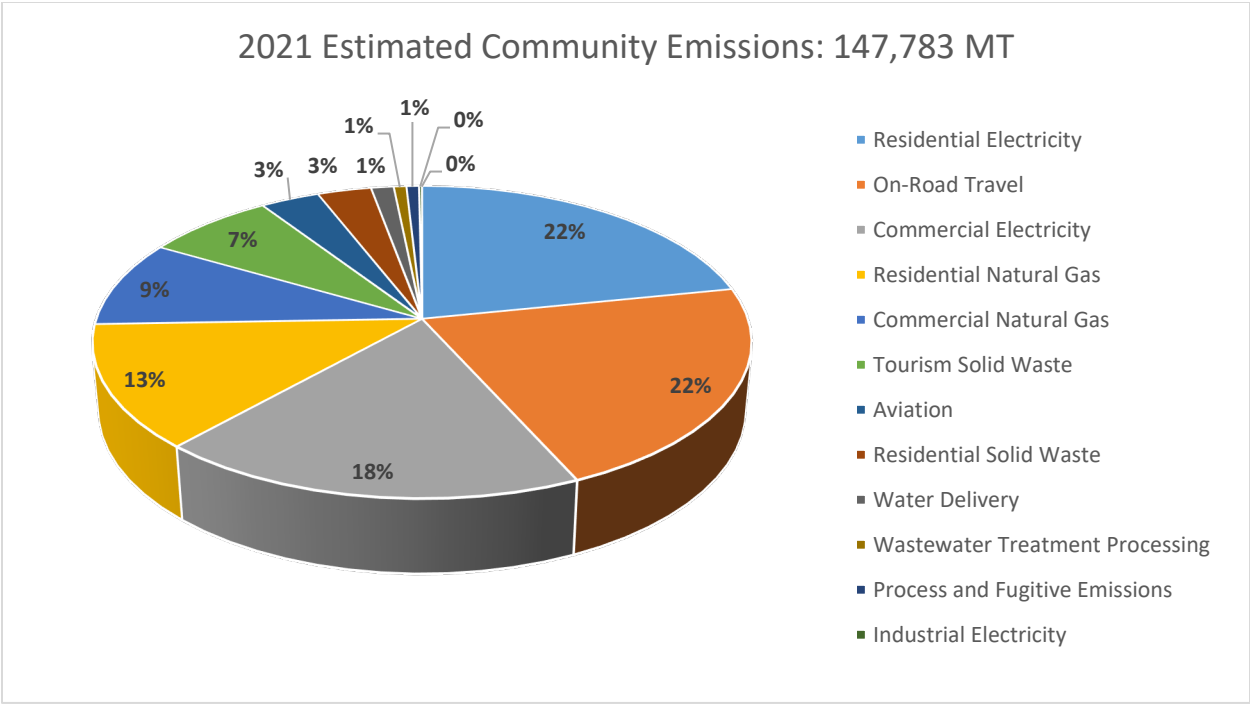
Methodologies, data boundaries, and calculations are now the same across the three reporting years. The 2020 Community GHG report maintained the original methodologies used in the CAP. The 2021 Community report updates the 2018 baseline year to match methodologies used in 2020 and 2021. 2019 estimations were not completed due to time constraints, availability of data, and initial goal of conducting an inventory every two years. Annual estimations are anticipated from 2020 onward at the time of this report.

The categories estimated in this report will be discussed in each emissions category. As greenhouse gas accounting principles advance and evolve over time, future inventories may adapt, modify, expand, or contract on emissions categories, methodologies, and calculations based on available data and best practices at the time of each inventory's creation.

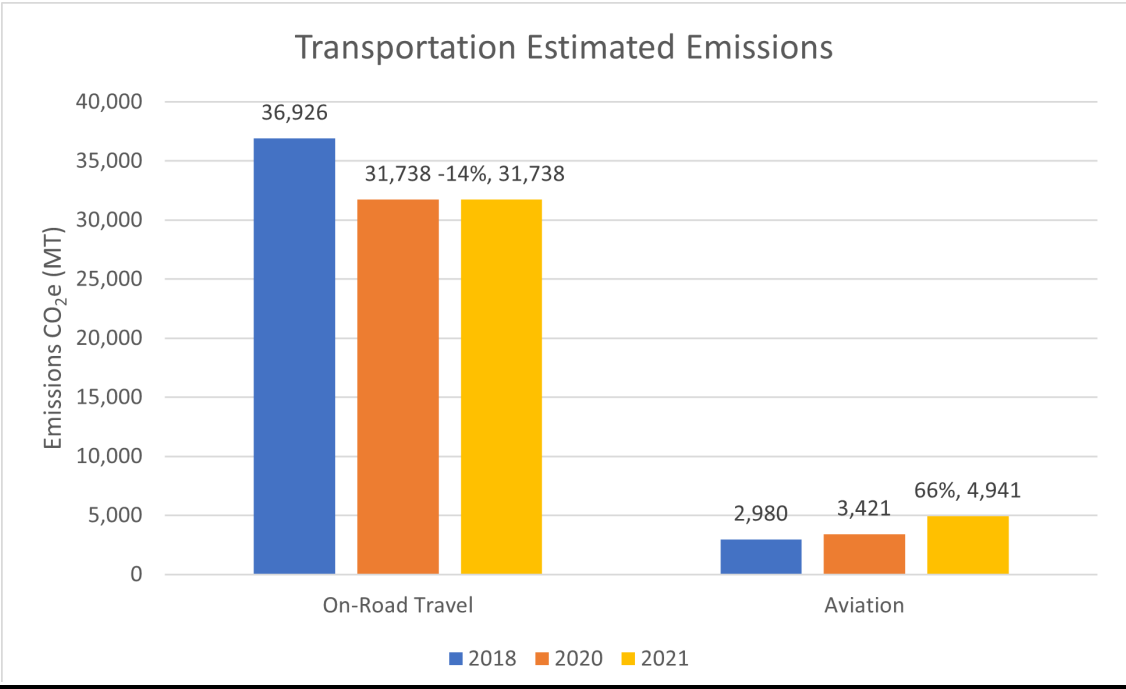
Total Estimated Community Emissions







Transportation



Vehicle and air travel from the community is the second largest source of emissions found in the 2021 inventory. This was also the case in the baseline inventory of 2018. However, when

methodologies and applied calculations for 2020 and 2021 were applied to the baseline 2018 year, revised 2018 numbers for on-road travel increased from 29,457 MT to 36,926 MT. This increase is due to methodology equations being properly applied to vehicle miles traveled (VMT) data for the baseline year. Emissions associated with this category have decreased 14% from the revised 2018 baseline year to 31,738 MT. This is mainly due in part to changes in how emissions factors were applied to vehicle miles traveled, and presumed decreases in VMT brought on by the COVID-19 pandemic. On-road travel emissions estimations have stayed the same for 2021 due to available VMT data only being updated every two years. Transportation emissions estimations (on-road and air travel) are estimated to have decreased from 39,906 MT CO₂e in 2018 to 36,679 MT in 2021 (8% decrease). 2021 transportation emissions are most likely an underestimate due to lack of VMT data specific to the reporting year, and it's assumed that VMT would have increased with the easing of pandemic restrictions.

On-road Travel Methodology

On-road travel calculation are derived from Average Annual Daily Traffic (AADT) counts that are compiled by the Arizona Department of Transportation (AZDOT). AZDOT produces a geodatabase that contains AADT and section length information for mapped roadways. Vehicle Miles Traveled (VMT) is derived from this information. Road segment lengths are multiplied by the segment's AADT to calculate VMT. It's important to note that not all roadways are mapped in the AZDOT database. Many smaller neighborhood roads are not a part of the AADT. However, the number of mapped roadways increased from 2018 to 2020. The AZDOT did not have updated 2021 AADT geodatabase at the time of this inventory, so the 2020 VMT calculations were used in its place. This may underestimate emissions from this sector, since COVID-19 pandemic restrictions and behaviors may have eased, and travel increased. Instead of trying to create a new methodology for this data gap, it was decided to reuse a verified and dependable data set from 2020. Future inventories may be able to revise this number upon updates to AZDOT databases.

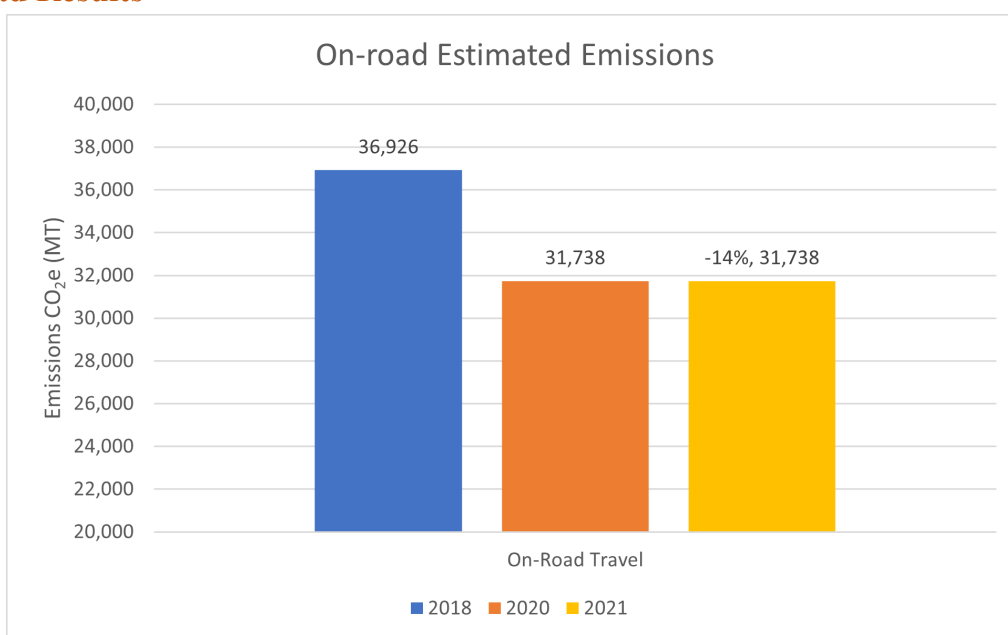
The AZDOT geodatabase contains information that encompasses the entire state. To narrow down the information to the Sedona community level, additional steps must be taken in a GIS application. The AADT line segment layer is clipped to a polygon layer that represents City of Sedona boundaries. The line segments lengths then must be recalculated, as some line segments (representing roadways) may have been cut if they extended beyond the City limits polygon layer. The AADT numbers for a line segment are then multiplied by the recalculated line segment lengths to create a VMT calculation for mapped roadways that exist within the City of Sedona boundary. The VMT for each road segment is then added to get a cumulative VMT for the City of Sedona.

Origin-destination data for vehicle travel was not available at the time of this inventory. This limitation does not enable the inventory to attribute travel as originating or ending within City limits and belonging directly to the Community. VMT data from AZDOT encompasses all traffic, on mapped roadways, regardless of destination. This would mean that pass through traffic (e.g., tourists, deliveries, transport) that are passing through Sedona for other final destinations are incorporated as a part of this inventory. While this limitation in available data doesn't

provide the ability to apply nuance to the VMT calculations, it does encompass all travel that is registered in the AZDOT data that lies within City limits.

The VMT is then attributed to various vehicle types based on national averages (% of vehicle type). Regional specific vehicle percentages were not available at the time of inventory creation. Once VMT has been attributed to vehicle types, the gallons of fuel needed to travel the calculated VMT is based of the national average fuel type and fuel efficiency (miles per gallon) for that vehicle type. Emission factors for CO₂, N₂O, and CH₄ from the EPA are then applied to the estimated fuel consumption and VMT, adjusted for CO₂e, and compiled to get a total estimation in metric tons of CO₂e.

On-Road Results



The VMT calculation method was the same from across all three inventoried years. VMT calculated in 2018 was 73,362,445. VMT in 2020 was 68,905,864 (a 6% decline in VMT from the baseline year). The 2020 VMT is used in the absence of available data source updates for 2021. The decrease in VMT can be partly attributed to the effects of the COVID-19 pandemic that impacted travel behaviors. Emissions from on-road travel are estimated to be 32,717 MT. This is a 14% decrease from the revised baseline year (2018) estimations (36,926 MT vs. 31,738 MT). The emissions estimated by on-road travel for 2021 is the same as 2020. The AZDOT did not have updated 2021 AADT geodatabase at the time of this inventory. On-road travel emissions may be higher than current estimations due to this. However, it was decided upon consultation with industry experts that use of available, verifiable data was preferred in lieu of developing additional methodologies to try and fill this data gap.

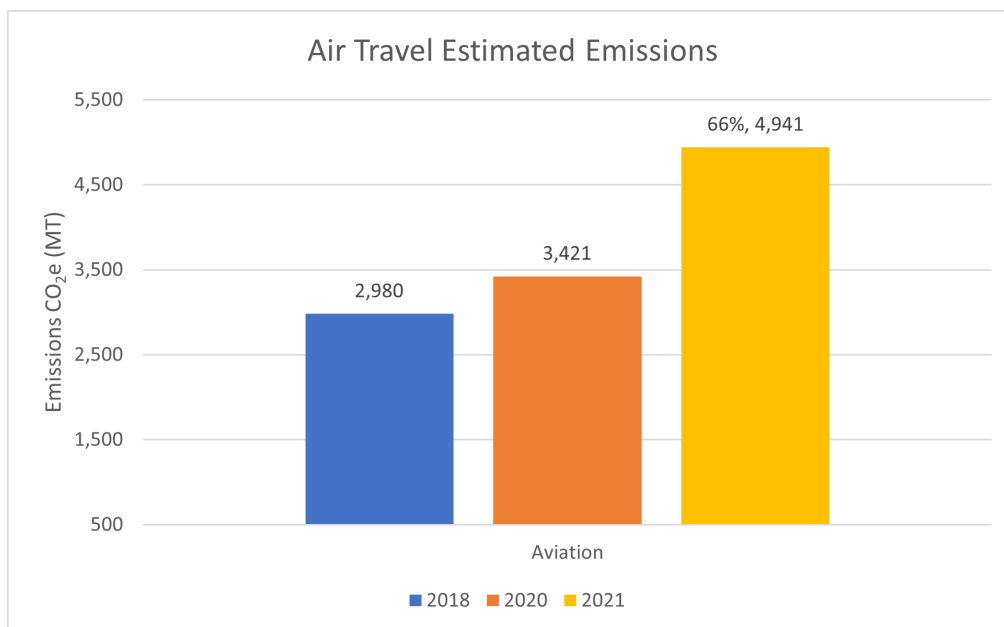
Of note, in the original 2018 GHG analysis, emissions estimates for on-road travel were 26,477 MT for the 73 million VMT. This was an underestimate due to an improper application of the equations and guidelines set in ICLEI ClearPath at the time of benchmarking. The revised

number corrects this discrepancy, which was predominantly found in how diesel calculations were estimated. In the CAP analysis, VMT was separated out to gasoline and diesel specific VMT, which then applied the national average vehicle percentages to each fuel type. However, the national averages apply to the total VMT, not to fuel types specifically. This led to an underestimation in on-road diesel emissions. The change in 2020 and 2021 (applying vehicle percentages to the total VMT) is more representative of total emissions associated with on-road travel.

Air Travel Methodology

Air travel emissions estimations are derived from fueling data acquired from the Sedona Airport. Aviation gasoline and jet fuel purchases are reported in gallons by month and then compiled for a given year. The amount of reported fuel sales was then multiplied by emissions factors from the Climate Registry's General Reporting Protocol v.3.0 to estimate emissions associated with air travel for CO₂, N₂O, and CH₄; converted and summed to a CO₂e. Fuel purchases are assumed to have been expended in a given calendar year. This approach is the same as the one found in the 2018 and 2020 inventories.

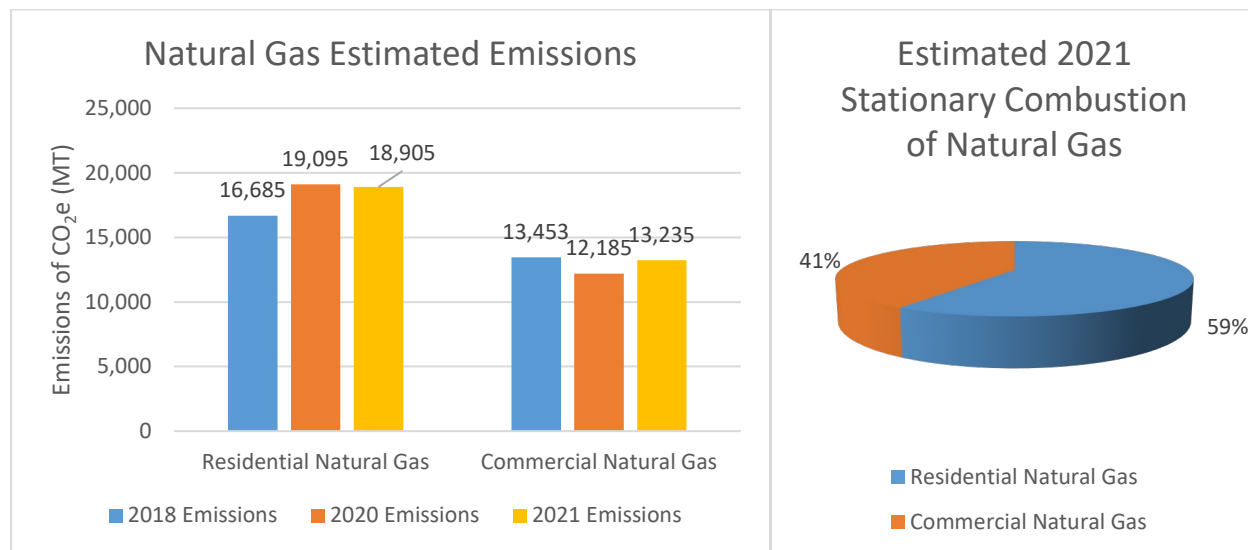
Air Travel Results



Emissions associated with air travel are estimated to have increased from 2018 to 2021. There were no changes in the applied emission factors. The increase in emissions is from an increase in reported fuel sales and fueling at the Sedona Airport in 2021. The reported number of fueling events in 2021 was 5,603 (25% increase over 2018) that resulted in 515,464 gallons of fuel purchased (13% increase). This increase in fuel purchases led to an estimated 4,941 MT of emissions for air travel (66% increase from 2018). This increase is not equal to the increase in gallons, since jet fuel purchased has a larger emission factor associated with it and jet fuel purchases made up the bulk of the increase in overall gallons utilized for air travel. Reported air

travel data does not appear to have been negatively impacted by the COVID-19 pandemic in the same way that on-road travel may have been.

Stationary Combustion (Natural Gas)

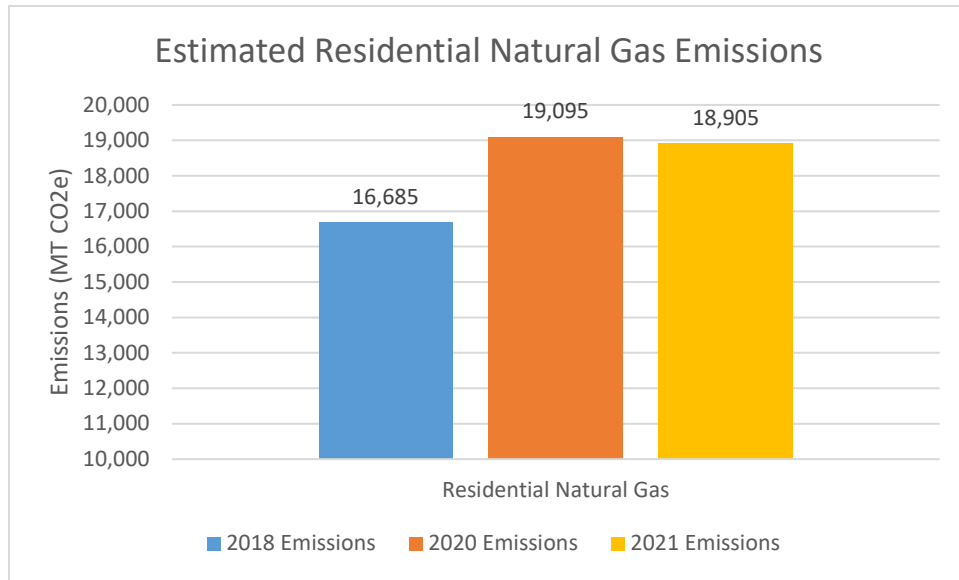


Stationary Sources (Natural Gas) Methodology

Emissions estimations from the combustion of natural gas from stationary sources is heavily reliant on collaboration with Unisource Energy Services (UES). Data received from UES contained usage information (in therms) and the number of premises receiving services for commercial and residential natural gas services. These are the same categories as the ones found in 2018. There was no natural gas usage reported for industrial sources for any of the reporting years. The provided data from UES is believed to be representative of all customers within City of Sedona boundaries.

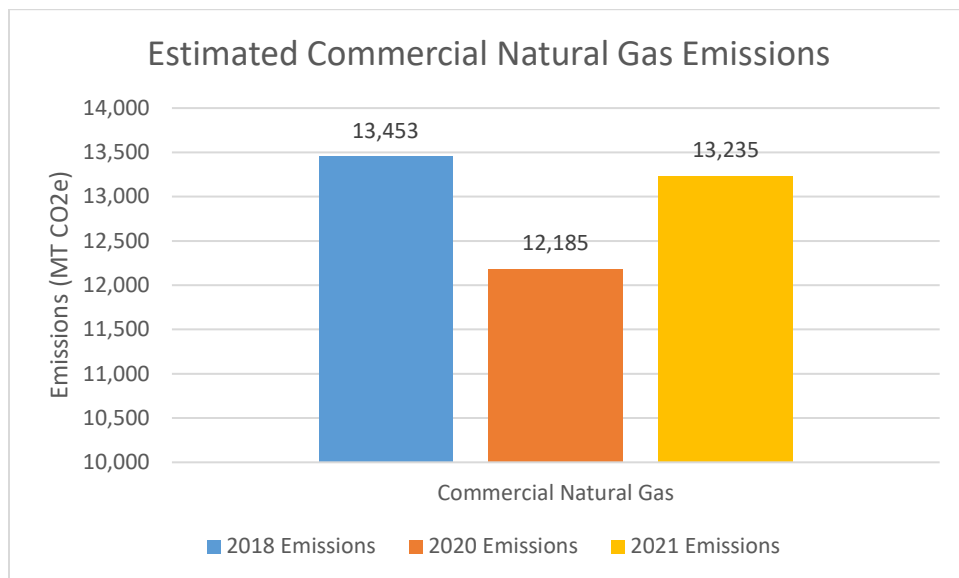
For emissions calculations, therms were converted to MMBtu. The MMBtu amounts were then multiplied by emission factors for CO₂, N₂O, and CH₄ for the commercial and residential sectors from the Climate Registry's General Reporting Protocol. Emissions numbers were then normalized to a CO₂e.

Residential Natural Gas Results



Residential natural gas usage increased from 2018 to 2021. Reported residential usage equaled 3,5554,48 therms (13% increase from 2018, 1% decline from 2021), and the number of premises receiving residential natural gas services increased 2.3% (5,364 to 5,488). 2021 emissions for residential natural gas are up 13% from 2018 to 18,904 MT. Residential premises increased slightly from 2020 but total consumption decreased slightly. The decrease in usage from 2020 may be attributed to changes in weather, property use patterns, leakage behind meters, and possibly changes in short-term rental behaviors at residential properties.

Commercial Natural Gas Results



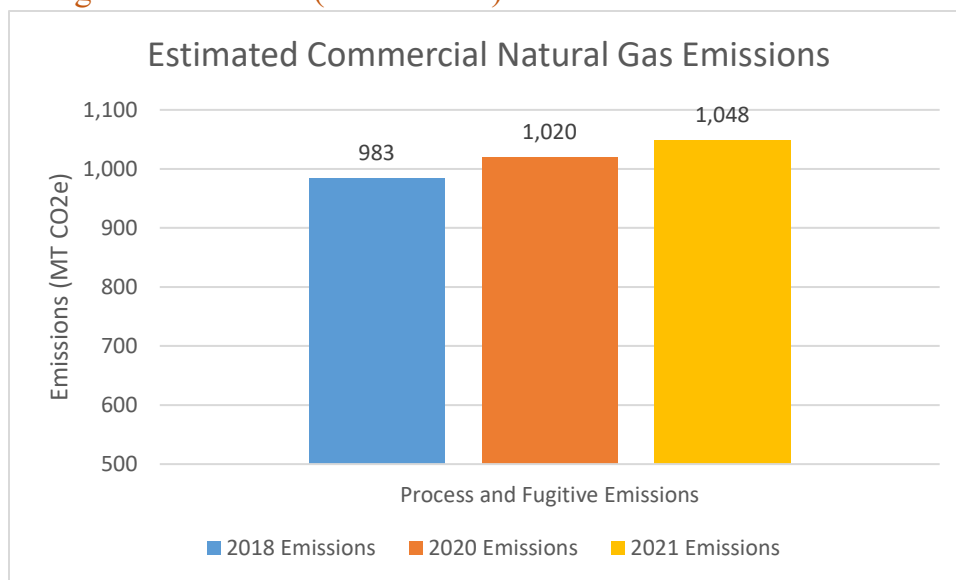
Commercial gas usage increased from 2020 levels and have rebounded to similar emissions reported in 2018. 2,488,332 therms were reported in 2021 (9% increase from 2020). Premises receiving commercial natural gas services increased slightly up to 940 from 925 in 2018 (1.6%

increase). Emissions for commercial properties are estimated to be at 13,235 MT; up 9% from 2020 (12,185 MT) and down 1% from baseline year. This may be attributed to the commercial businesses rebounding from COVID-19 pandemic and associated limitations.

Process and Fugitive Emissions (Natural Gas) Methodology

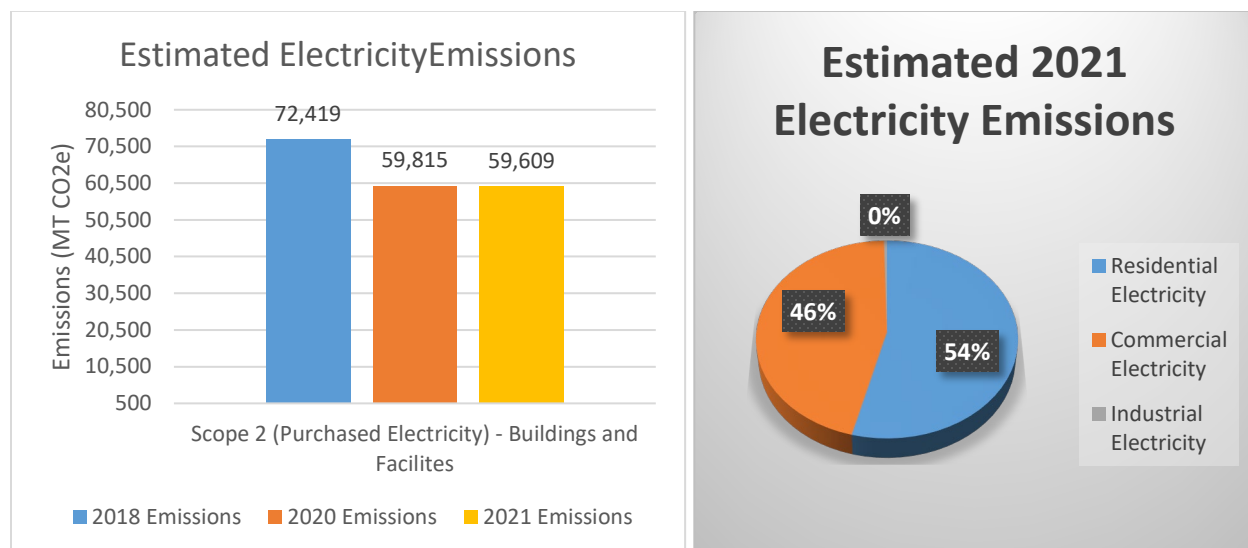
Process and fugitive emissions are largely derived from the distribution of natural gas to premises within the city of Sedona. Total natural gas usage (Commercial and Residential) in therms is used as an input into the ICLEI ClearPath platform, along with utility provider leakage rate, natural gas density, and gas composition. In the absence of utility provider specific information, default national rates are used in this process. Default numbers for leakage rate, fuel mix, and gas density were used for the 2021 and 2020 inventories. Process and Fugitive emissions from refrigerants used in air conditioners and HVAC systems are not captured in the 2018, 2020, and 2021 inventories. These data points have no central access point and are not actively tracked across the community or regulatory bodies, making accurate estimations nearly impossible due to lack of data.

Process and Fugitive Emissions (Natural Gas) Results



Emissions in this sector saw a 3% increase from 2020 and is 7% higher than the baseline year (1,048 MT vs. 983). This is due to the increased total amount of therms used in natural gas consumption between the two years. 2021 data reported a total of 6,042,813 therms, compared to 5,666,464 therms which was reported in 2018. This 7% increase in overall therms aligns with the increase in emissions in the sector. Emission factors, leakage rates, gas density, and other factors used in the calculation did not change between reporting years.

Electricity Consumption



Purchased Electricity Methodology

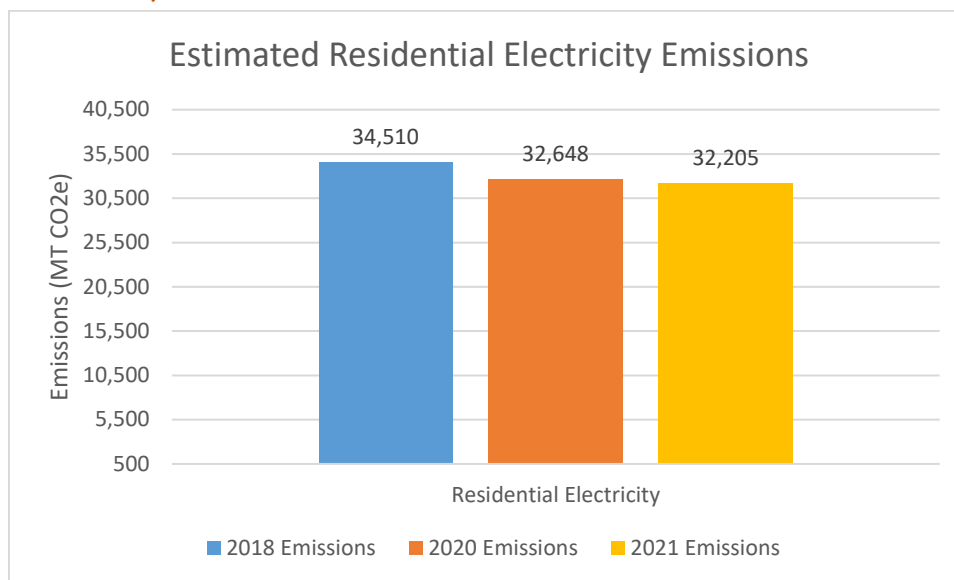
Electricity emissions are based on data obtained through Sedona's electricity utility provider – Arizona Public Service (APS). Data obtained from APS contains information about electricity consumption and number of premises receiving services for residential, commercial, and industrial categories for two separate Zip Codes: 86336 and 86351.

For the purpose of the 2021 inventory, only data from in the 86336 Zip Code was utilized. The 86336 Zip Code has city of Sedona related consumption data, along with an assumed relatively small percentage of consumption existing outside its boundaries. 86351 data contains electricity consumption for the Village of Oak Creek, and the data is exclusively outside city limits. Originally, the 2018 inventory included data that existed in the 86351 Zip Code (Village of Oak Creek). The 2021 Community GHG report has applied the revised methodology to the 2018 data set. This data boundary alteration fundamentally changes emissions calculations in this section from the 2018 baseline. However, use of the 86336 Zip Code data further narrows community contributions to the city of Sedona boundaries that would not be achieved if including the additional Zip Code area.

Electricity consumption numbers were converted from kWh to MWh. The MWh electricity consumption was multiplied by a pounds of CO₂e emissions factor for the AZNM subregion (EPA 2022) which was then converted to metric tons. The AZNM region encompasses the majority of Arizona and New Mexico and is a part of the EPA's Emissions and Generation Resource Integrated Database (eGRID). This approach was done for each of the residential, commercial, and industrial numbers provided by APS for the given Zip Code. Though not included in this report's methodology, emissions from electricity consumption has been calculated for the 86351 Zip Code to replicate processes of the previous inventory, provide

additional insights from the surrounding area, and identify discrepancies between the inventories. Additionally, electricity consumption from wastewater treatment and water delivery were subtracted out of the commercial APS data for 86336 to avoid double counting in those sectors.

Residential Electricity Results



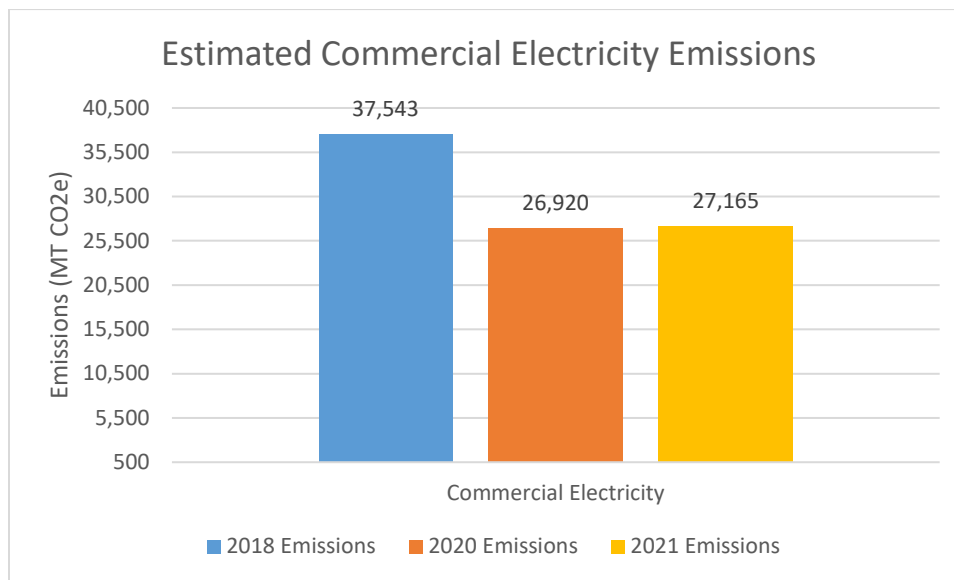
With the updated methodology and boundary lines, emissions from residential electricity consumption were revised down from the 54,658 MT reported in the 2018 baseline year to a revised 34,510 MT (37% decline in revised number). Emissions reductions found in the 2020 and 2021 dropped primarily from improvements in the AZNM eGRID emissions factors from the 2018 factors. In 2018, the EPA reported emissions factors for the AZNM subregion as 1,027.5 lbs./MWh, which improved to 850.2 lbs./MWh (17% improvement) in 2020 in the *Emissions and Generation Resource Integrated Database* (2022). Updated eGRID emissions factors for electricity are not currently available for 2021, therefore 2020 emissions factors were applied as is best practice at the time of calculation.

The revised 2018 inventory reported 114,906 MWh used in residential electricity, but this includes the Village of Oak Creek data that lies exclusively outside city limits. Revised 2018 numbers with the new methodology narrow 2018 residential electricity consumption to 74,045 MWh. 2021 residential electricity consumption was reported at 83,511 MWh (1% decline from 2020, 13% increase from 2018). The 17% reduction in the emissions factor is the primary driver in reduced emissions since utility consumption in that coverage area is up 13% from 2018 (83,511 MWh in 2020 vs. 74,045 MWh in 2018).

Residential electricity consumption did not see a significant impact from the COVID-19 pandemic. The reductions that are seen are from narrowed boundary changes to better reflect contributions from the city of Sedona and reduce contributions reported from outside of city limits, along with the improvements in the eGRID emissions factors. The reported number of

premises in 2020 receiving residential electricity was 7,989. These premises comprised roughly 54% of emissions generated from electricity consumption.

Commercial Electricity Results

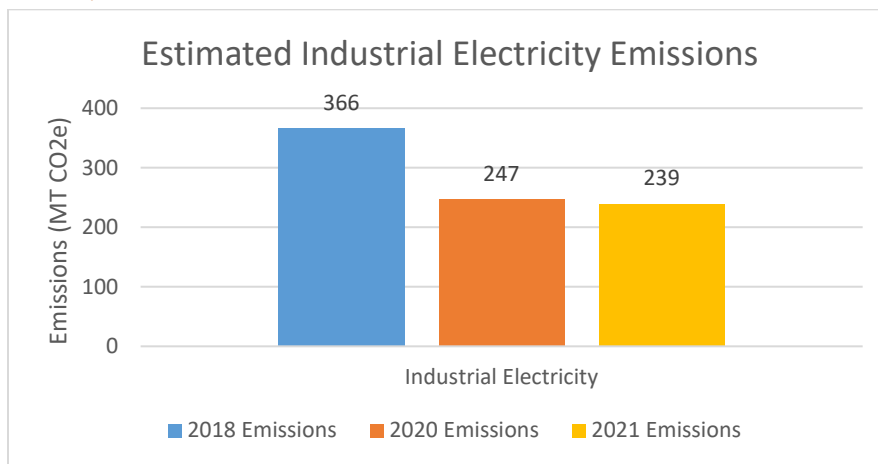


Commercial electricity was also affected by the data boundary changes and the improvements in the eGRID emissions factors. 46,644 MT were reported in the 2018 inventory. Revised 2018 numbers have been recalculated down to 37,543 MT. 2021 emissions in the sector increased 1% from 2020, but down 28% from revised 2018, to 27,165 MT. Revised 2018 calculations report commercial electricity usage of 80,553 MWh, as opposed to 77,775 MWh for 2021 (3% decline).

Although premises receiving commercial electricity increased from 2,048 establishments in 2021 from 1,969 reported in the baseline year, commercial premises may have seen an impact from the COVID-19 pandemic. However, much like with residential electricity, it is difficult to decipher natural use changes vs. potential pandemic responses based on available data.

Commercial electricity, not including water delivery and wastewater treatment, comprised 46% of emissions generated from electricity consumption. Water delivery and wastewater treatment electricity consumption were subtracted from commercial usage to avoid double counting.

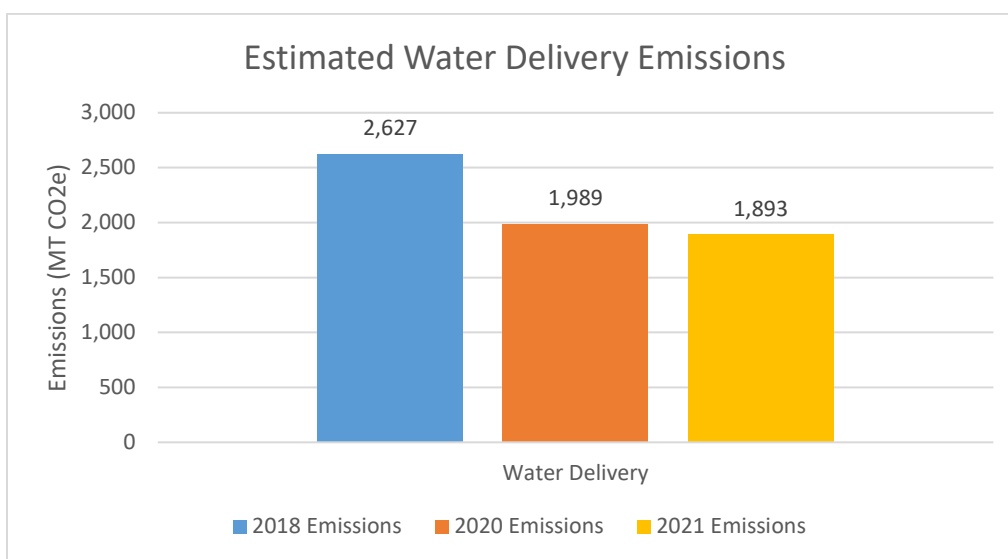
Industrial Electricity Results



Industrial emissions were impacted as well from the methodology changes. Revised 2018 reported usage of 785 MWh (down from original 839 MWh) compared to 619 MWh in 2021 (21% decrease). This decrease in electricity usage, along with eGRID improvements, resulted in a decline of 35% in emissions in this sector (366 MT to 239 MT). Industrial electricity consumption is down 21% from 2018 numbers and down 3% from 2020.

Much like the residential and commercial electricity sectors, Industrial electricity consumption may have seen an impact from the COVID-19 pandemic, but it's hard to quantify based on available data. There was also a reduction in premises defined as receiving industrial electricity. Premises declined from 57 to 40 establishments from 2018 to 2021 (30% decline). However, it is unknown whether this change is due to the pandemic or other market trends.

Delivered Water



Delivered Water Methodology

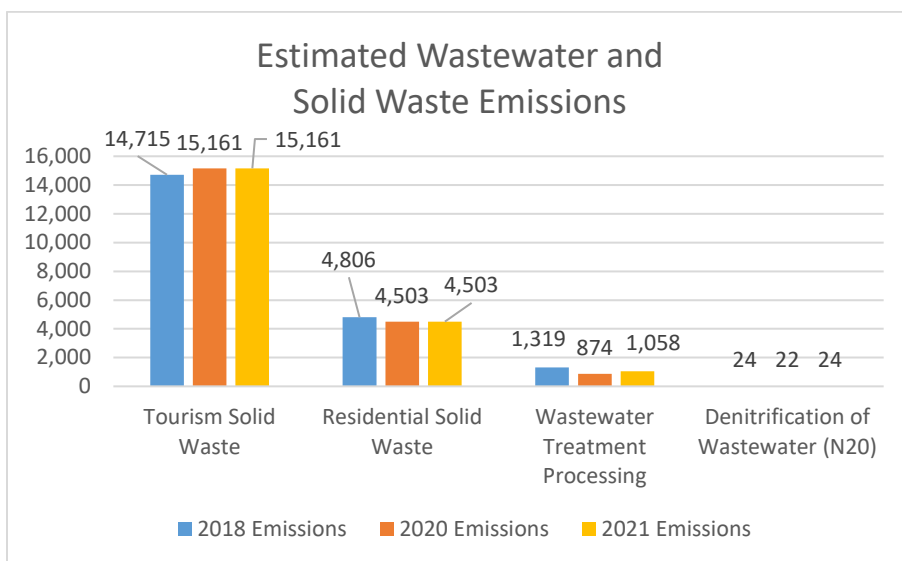
Emissions from delivered water is derived from the energy (electricity and natural gas) that was reported from the water companies that serve the city of Sedona. No natural gas usage was reported for 2018, 2020, or 2021. Arizona Water Company and Oak Creek Water Company provided data on the total water amounts delivered and the electricity consumption required to deliver that water to properties within city of Sedona boundaries. In 2018, only Arizona Water Company was reported. The 2020 and 2021 inventories include information from Oak Creek Water Company as well.

Electricity emissions calculations from energy use converted the reported kWh totals into MWh and then applied the lbs. CO₂e/MWh emission factor that is associated with the AZNM region. Pounds of emissions were then converted to metric tons of CO₂e. There was no natural gas consumption reported for water deliveries in 2018, 2020, or 2021.

Delivered Water Results

Emissions from water delivery is down 28% to 1,893 MT in 2021. This decrease in emissions can be contributed to two factors. In 2018, reported MWh for energy consumed to deliver water to community properties was 5,522. In 2021 it was reported at 4,908 MWh (11% decline). The electrical grid also became cleaner from 2018 to 2020. In 2018, the emission factor for electricity on the AZNM subregion was 1,027.5 lbs. CO₂e/MWh. That emissions rate improved for 2020 to 850.2 lbs./MWh (17% decrease). The reduced electricity consumption for water delivery and improved emissions rates allowed for emissions declines, even though amount of reported water delivered increased 6% from 974,150,000 in 2018 to 1,033,511,426 gallons.

Solid Waste and Wastewater Treatment



Solid Waste Methodology

The generation of municipal solid waste (MSW) is a large component of greenhouse gas emissions at the Community Level. However, quality data to derive emissions calculations is difficult to obtain, since the City of Sedona doesn't own or operate any community waste haulers. Additionally, waste haulers in the area often serve a large territory on a respective route that includes Village of Oak Creek, Cottonwood, Camp Verde, and surrounding areas. This makes the ability to decipher specific amounts of waste as originating from the city of Sedona boundaries difficult to adequately track or entirely nonexistent. Additionally, waste haulers aren't required to track amounts collected. Weight loads and transfer amounts are only required to be reported at destination landfills; removing the ability to effectively decipher how much came from one community. At the time of this inventory, adequate regional solid waste data was insufficient to generate emissions calculations from. In the absence of the regional data, national MSW numbers provided by the EPA are utilized.

The EPA provided number of pounds of municipal solid waste per person per day was applied to the residential population of Sedona, which was derived from the 2020 Census completed by the United States Census Bureau. Contributions to MSW from tourism was also calculated. Annual tourism numbers were provided by the Sedona Chamber of Commerce and Tourism Bureau, along with the average tourist length of stay in days. The total tourism numbers were divided by the number of days in the year and multiplied by the average length of stay to get an estimation on the number of tourists on a given day. Updated tourism numbers for 2021 were not available at the time of this report, so emissions from tourism are the same as estimated in 2020.

The estimated tourist population and residential population were then multiplied by the EPA provided MSW generation rate, given as lbs./day, to produce an estimated amount of waste generated on a given day (EPA 2021). This was then multiplied by the days in a year to get an annual approximation. The annual waste generated estimation was then multiplied by a GHG emissions factor for landfilled municipal waste. It assumed that all MSW generated is landfilled at the Gray Wolf Regional Landfill. That landfill does not incinerate or combust any materials that are sent there, so only the emissions factor related to landfilled material was applied to the MSW estimations.

Residential & Tourism Solid Waste Results



Methodology did not change from 2018 to 2021. Originally, the 2018 inventory estimated solid waste emissions from tourism and residential sources at 88 and 40 MT respectively. The reason for the disparity in reported emissions in 2018 and the chart above is due to a calculation error found in the 2018 inventory. The emissions rates used in 2018 were in lbs. MSW per person per day. The 2018 inventory did not multiply residential and tourist populations by the number of days in the year to obtain an annual MSW estimation. This oversight significantly underestimated emissions in this category.

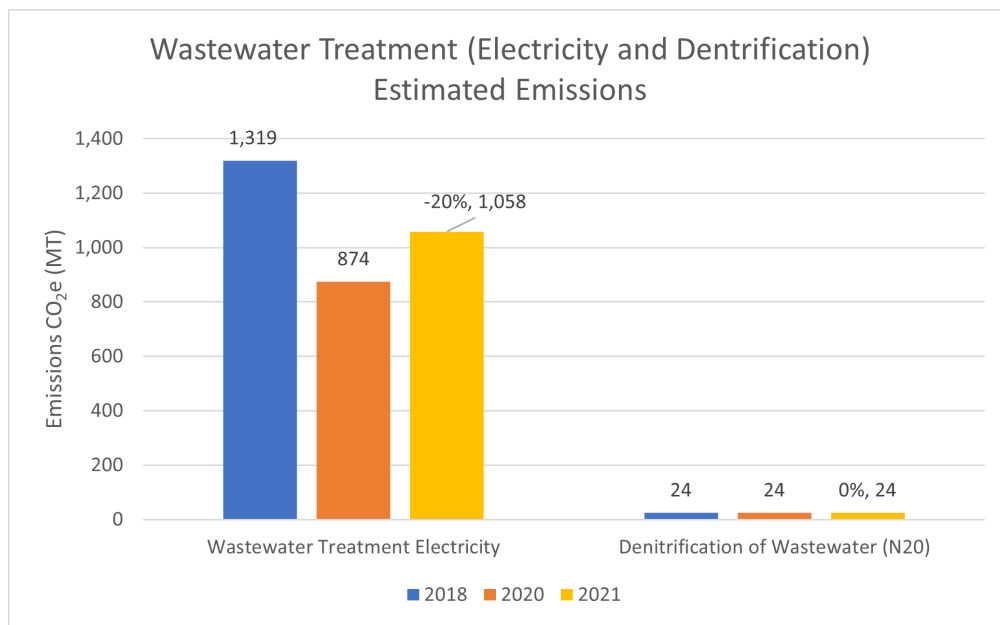
The total emissions estimation in this section of 15,332 MT (Tourism and Residential) is a broad estimate based off national EPA MSW generation rates. Regional or community specific data was not available at the time of this report. Collaboration and improvements in waste monitoring is needed from regional waste haulers to improve on the emissions estimation in this section. However, an improved application of the methodology and quality control improves and begins to estimate impacts more adequately from solid waste at the community level that were not originally estimated effectively in the 2018 inventory.

Wastewater Treatment Methodology

There are two sources of emissions associated with wastewater treatment for the City of Sedona: energy consumption needed for operations and denitrification during the treatment process. Both calculations are made in the Municipal GHG Inventory. Utility usage from locations associated with wastewater treatment (lift stations, pumps, treatment facility, etc.) have emissions factors applied to them in the same way as highlighted in the Purchased Electricity and Stationary Combustion Methodology, also found in the Municipal GHG Inventory Report. Additionally, there is a solar photo-voltaic array at the Wastewater Treatment Plant, as well as some energy from the Hoover Dam that is credited at a Wastewater location. The solar array and Hoover Dam energy, and associated emissions, are accounted for in the 2021 Municipal GHG Inventory.

To calculate emissions generated from the denitrification process of wastewater treatment, the EPA Community GHG Inventory Tool was utilized (2022). Usage parameters including population and amount of wastewater were provided as inputs into the wastewater module. Emissions were then estimated by the tool. Additional quality control was applied to provide data and calculation confirmation through input into the ICLEI ClearPath platform. The tools used ask for population as an input parameter. There are no inputs for tourism in the denitrification estimation tools. This may slightly underrepresent emissions associated with the wastewater denitrification process. Methodologies of future inventories may be updated once advanced tools or applications are available.

Wastewater Treatment Results



Emissions from electricity consumed in the wastewater treatment process saw a decrease of approximately 20% from the 2018 baseline (1,319 down to 1,058 MT). Denitrification emissions are estimated to have remained the same as found in 2018 (24 MT). The lack of change seen in denitrification is largely due to the community inventory tool relying on residential population in its calculation, where the city of Sedona saw a residential population decline from 10,383 in 2018 to 9,684 found in the 2020 US Census (United States Census Bureau, 2022). That relatively small population and respective change did not significantly change calculations found within the tool.

The City of Sedona's Wastewater Treatment Plant processed 421 million gallons in 2018 and 444 million in 2021. This increase in wastewater treated didn't significantly change energy usage. 3,861 MWh were reportedly purchased in 2018, while 3,847 MWh were reported in 2021. This is approximately a 0.3% increase in energy use, so emissions reductions seen in 2021 compared to 2018 are largely from improvements in AZNM eGRID emission factors. Additionally, and to a lesser degree, there was mixed renewable performance between 2021 and the baseline year. Renewable energy attributed as coming from the Hoover Dam increased

slightly to 220 MWh from 209 MWh in 2018. However, the Longroad solar farm produced 917 MWh in 2021, down 16% from the 1,088 MWh in 2018. Hoover Dam energy productivity should not be anticipated to increase due to ongoing drought and climate change that is significantly impacting the Colorado River watershed.

Discussion

The 2021 Community GHG Inventory is estimated to be 9% below the revised 2018 numbers, or down around 14,950 MT. As a reminder, the 2018 inventory estimated totals were revised from 165,800 to 162,733 MT for the 2018 baseline year. Emissions reductions are largely found in the residential, commercial, and industrial electricity sector, where a 17% reduction in emissions rates on the AZNM eGRID region were found. However, electric utility consumption when confined to the 86336 Zip Code had varied results. Residential electricity consumption is 13% above baseline, while commercial and industrial consumption decreased 21% and 3% respectively. This same trend happened in natural gas usage. Residential gas usage in 2021 is 13% higher than baseline, while commercial natural gas consumption is down 2%. However, projects aimed at reducing residential and commercial utility consumption should be further developed, as residential and commercial properties are estimated to comprise about 60% (91,470 MT) of estimated Community emissions.

An increase in renewable energy sources should be facilitated to address the electricity consumption and natural gas usage in the community, which are the largest estimated emissions sources in the 2021, 2020, and 2018 inventories. Projects that include solar co-ops and installations, energy efficiency projects, green power purchase agreements, conservation outreach, green building codes, developer outreach and consultation, and development review can all be tools to drive emissions reductions in these categories. Additionally, partnerships with the area's utility providers, mainly APS and Unisource, can be further developed to procure green, low emissions energy to the grid for community members.

Compared to the 2018 baseline, increases in estimated emissions were found in 2021 aviation, residential natural gas, process and fugitive emissions (natural gas) and wastewater treatment. On-road travel saw a decrease in VMT (6%) from baseline, which stayed the same as estimated in 2020. Transportation emissions are about 25% of emissions estimated in 2021. Aviation emissions are up 43% year to year and 65% compared to baseline. Continued improvements in shared-use paths, trailhead shuttle systems, EV charging stations, vehicle electrification, and workforce housing within city limits should be targeted to provide additional emissions reductions benefits.

About 10% of emissions (15,332 MT) are estimated to come from solid waste. This is a significant increase on the 127 MT (<1% emissions) that was originally reported for the CAP. As discussed, this underestimation is largely due to an unnoticed mistake in the calculations in the 2018 inventory. However, 2020 and 2021 estimations in this sector are still quite broad and lack regional data to estimate emissions more effectively and accurately in these fields. Even with the broader estimations in these fields, additional projects and methodologies can be targeted.

Projects that improve third party waste hauler reporting, waste diversion programs (e.g., composting, recycling, hazardous waste events), community/wastewater outreach campaigns, and similar could be targeted for this sector.

Emissions associated with delivered water are down 28% from 2018 and 5% from 2020, however, reported gallons delivered increased to over one billion gallons (6% increase). While the improvements in emissions and reduction in electricity usage reported for water delivery are positives, with water uncertainty around the Colorado River and aquifers in the Southwest projected to increase in the future, water conservation projects, retrofits, and outreach campaigns should be developed. Additionally, partnerships and collaboration with the area's water providers should be expanded.

The 2021 Community GHG Inventory estimated varied results in emissions sources. Overall, electricity emissions improved, while natural gas sources and aviation emissions increased. On-road travel and solid waste are estimated to be the same as in 2021 but down slightly from 2018. This is mainly due to updated datasets not being available in those sectors. Emissions calculations for 2020 and 2021 should not be considered a representative year when factoring in the impacts of the COVID-19 pandemic. However, the estimations of 2021 Community GHG report help provide insight on trends and changes in the data. Revisions to the 2018 inventory were completed to match the methodologies used in 2020 and 2021. A further understanding of the challenges and approaches that were taken in the 2018 baseline year were obtained through this process.

Greenhouse gas accounting is continuously evolving. The 2018 inventory, which helped develop the City of Sedona's Climate Action Plan, provided a foundation and overview of significant emissions sources from the Sedona area. The calculation methodology and data acquisition processes have changed from that effort to more accurately represent emissions attributed to the city of Sedona for the 2021 Community GHG Report. Future inventories will further adapt, adjust, and incorporate new standards and best practices to provide more granularity in identifying emissions sources and rates. This will allow for future projects and solutions to be more targeted and effective in their implementation, and for success to be measured utilizing the metrics and data discussed in this report.

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